

A COMPARATIVE ANALYSIS OF TEACHERS'  
PERCEPTIONS OF PROFESSIONAL TEACHING  
STANDARDS AND TEACHING PRACTICES:  
IMPLICATIONS FOR PROFESSIONAL TEACHING  
STANDARDS DEVELOPMENT AND TEACHER  
CERTIFICATION

**BRUCE KEVIN MOWBRAY**

Bachelor of Science (University of Newcastle, NSW)  
Diploma of Education (University of Newcastle, NSW)  
Master of Science (University of Newcastle, NSW)  
Diploma of Coal Geology (University of Newcastle, NSW)

Thesis submitted in fulfilment of the requirements  
of the degree of Doctor of Philosophy of the  
University of New England

## ACKNOWLEDGEMENTS

The successful completion of a study such as embodied in this thesis is dependent on a range of factors: the least being inspiration and insight. While perseverance and perspiration also play a role, the task could not have been completed without the encouragement, guidance, assistance and support provided by others. In this respect, I am indebted to many.

In particular, I would like to thank my supervisors; Professor John Pegg and Dr Ted Redden. John, I am grateful for your patience, ongoing support, clear guidance and tutelage, but most of all for your friendship. Ted, thank you for your advice on aspects of the thesis design and assistance with measurement techniques.

I am grateful also to the Department of Education and Training, and the University of New England for providing reports on student and beginning teachers for analysis. The Department also provided access to schools and to the teachers surveyed. I also want to acknowledge the Department's financial assistance with travel and accommodation. There are many others who helped me in big and small ways. These include:

- the University of New England staff members who transcribed the student teacher reports;
- Sara Gandolfo who undertook the task of transcribing the beginning teacher reports;
- Patsy West who assisted with typing and editing through the final stages of the thesis preparation;
- my work colleagues Duncan McNabb, Jill Hill and Julienne Leathhart who helped with the final editing;
- Associate Professor Trevor Bond, James Cook University, who provided advice on the Rasch analysis; and
- my good friend Judy Henderson who acted as critical friend and editor in the final stages of the thesis preparation.

I am grateful also to many others who helped in small ways sometimes without knowing it.

Last but not least I want to thank three people that without their assistance and ongoing support this thesis would not have been possible. To my wife Denise and daughters Philippa and Alexandra go my love and thanks.

## ABSTRACT

The development of professional standards for teachers in Australia has been constrained by the lack of professional structures and organisations with the capacity or will to undertake their development. The establishment by governments of a range of semi-professional organisations to undertake this task has engendered in NSW, and elsewhere, significant debate about the purpose, form and function of professional teaching standards. Classroom teachers have been largely excluded from these debates, consequently, little is known about teachers' perceptions of professional standards or how their practices might impact on them.

This thesis involves two studies. The first investigates teachers' perceptions of a theoretical set of professional standards for beginning teachers from three perspectives: *achievability*, *preparedness* and *development-priority*. The second reports on an analysis of approximately 600 reports on student and beginning teachers to determine how teachers in New South Wales currently describe their practice. The methodology for Study 1 involved the application of Rasch analysis to Likert scale survey responses. Study 2 involved, first, the qualitative analysis of supervisors' reports written on student and beginning teachers and, second, the use of Rasch to analyse patterns of comments amongst the reports and across different groups of supervisors.

The analysis of teachers' perceptions of the theoretical standards found teachers are more likely to perceive positively elements of the standards focused on classroom practice. Elements requiring theoretical knowledge and understanding were perceived more negatively. The analysis of supervisors' reports on student and beginning teachers, while providing authentic descriptions of practice, provide an insufficient basis for the development of professional standards.

Consequential findings from the investigation include the need to actively promote quality in the selection and support of mentors and supervisors of beginning teachers. Despite differences in the perceptions of the professional standards investigated amongst groups of teachers differentiated on the basis of age, experience and position in school, there was no difference in the perceptions of teachers with and without recent mentoring and supervisory experience. Also apparent from the analysis of supervisors' reports on student and beginning teachers was a lack of focus on teachers' ability to teach effectively in judgements of teacher competence. Supervisors comment more readily on planning and evaluation of teaching, capacity to manage students, relationships with peers and others, than they do on classroom practices.

The application of Rasch modeling to the outcomes of a NUD\*IST analysis provides a methodology for analysing patterns and trends in qualitative data, including differences in the pattern of comment or response amongst identified group. Further, a methodology is presented for analysing variation by comparing misfit and differential item functioning arising from the analysis.

# TABLE OF CONTENTS

ACKNOWLEDGEMENTS .....	I
ABSTRACT .....	II
LIST OF TABLES .....	XI
LIST OF FIGURES .....	XIII
PREAMBLE .....	1
CHAPTER 1: PROFESSIONAL TEACHING STANDARDS: SETTING THE CONTEXT .....	4
INTRODUCTION.....	4
‘STANDARDS’: MAKING SENSE OF THE TERMINOLOGY.....	5
Uses of standards in industry.....	6
Conceptualising standards in the educational context .....	8
Benchmarking performance.....	11
Summary .....	12
PROFESSIONALISATION OF TEACHING, THE STATUS OF TEACHERS AND TEACHER PROFESSIONALISM.....	13
Recognising teaching as a profession .....	13
The status of teachers.....	18
Teacher professionalism .....	20
Summary .....	22
POLICY AND EDUCATIONAL RESEARCH CONTEXTS .....	23
The policy context.....	24
The research context.....	31
Summary .....	34
STANDARDS IN LEARNING AND ASSESSMENT WITHIN NATIONAL AND INTERNATIONAL EDUCATIONAL CONTEXTS .....	35
The curriculum standards movement.....	35
Assessment of student learning .....	43
Summary .....	46

COMPETENCIES AS A CONCEPTUAL FRAMEWORK FOR PROFESSIONAL TEACHING STANDARDS .....	46
The behaviourist model of competence .....	48
The generic model of competence.....	50
The integrated model of competence .....	52
Cognitive constructs of competence .....	52
Summary .....	53
CONCLUSIONS.....	54
CHAPTER 2: STANDARDS FOR TEACHERS: NATIONAL AND INTERNATIONAL DEVELOPMENTS .....	56
INTRODUCTION.....	56
DIFFERENCES IN THE CONCEPTION OF STANDARDS .....	57
THE UNITED STATES .....	59
National developments.....	60
State-based developments.....	61
Competing national and state agendas .....	62
The National Board Standards.....	65
Summary .....	68
ENGLAND AND WALES .....	68
Quality initiatives .....	68
Underlying tensions.....	71
The Hay McBer initiative .....	73
Summary .....	75
ONTARIO, CANADA .....	75
The Ontario College of Teachers.....	76
Unresolved questions.....	77
Summary .....	78
PROFESSIONAL STANDARDS DEVELOPMENTS IN AUSTRALIA .....	79
National developments.....	79
Developments in New South Wales .....	84
Summary .....	85
PARAMETERS AND SCOPE OF INVESTIGATIONS .....	85
Definitions adopted in this study.....	85
Development of a set of theoretical standards .....	86

Research themes and questions .....	89
<b>CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY .....</b>	<b>91</b>
INTRODUCTION.....	91
CONTEXT OF THE STUDY .....	92
OVERVIEW OF THE RESEARCH DESIGN AND ITS EPISTEMOLOGICAL FOUNDATIONS .....	94
Epistemological foundations .....	95
Overview of the Designs .....	96
DESIGN OF INSTRUMENTATION AND SAMPLING FOR STUDY 1 .....	96
Development of the survey instrument.....	98
Piloting and trialling of the survey instrument .....	99
Outcomes of the pilot.....	100
Sampling and implementation.....	100
INSTRUMENTATION AND SAMPLING FOR STUDY 2.....	101
Identification and preparation of reports to be sampled .....	102
Identification of an initial coding structure .....	105
Piloting of the coding structure .....	106
Coding of the reports and presentation of results.....	107
SUMMARY .....	108
DATA ANALYSIS .....	109
Frequency analysis.....	109
Factor analysis .....	111
Rasch Scaling and Analysis .....	111
Parametric Analysis – MANOVA and ANOVA.....	114
EVALUATION OF THE RESEARCH DESIGN.....	115
Quantitative Paradigm.....	116
Qualitative Paradigm .....	119
CONCLUSIONS.....	122
<b>CHAPTER 4: ANALYSIS OF TEACHERS’ PERCEPTIONS OF THEORETICAL STANDARDS .....</b>	<b>124</b>
INTRODUCTION.....	124
THE RELATIVE <i>ACHIEVABILITY</i> OF ELEMENTS OF THEORETICAL STANDARDS .....	125
Percentage Frequency Analysis – <i>Achievability</i> .....	125

Factor Analysis.....	127
Rasch Analysis – <i>Achievability</i> .....	130
MANOVA.....	134
Discussion and Implications.....	135
THE RELATIVE <i>PREPAREDNESS</i> OF BEGINNING TEACHERS TO MEET ELEMENTS OF THEORETICAL STANDARDS .....	137
Percentage Frequency Analysis - <i>Preparedness</i> .....	137
Rasch Analysis – <i>Preparedness</i> .....	138
MANOVA.....	142
Discussion and Implications.....	143
THE <i>DEVELOPMENT-PRIORITY</i> AFFORDED ELEMENTS OF THE THEORETICAL STANDARDS .....	144
Percentage Frequency Analysis – <i>Development-priority</i> .....	144
Rasch Analysis – <i>Development-priority</i> .....	146
MANOVA.....	149
Discussion and Implications.....	151
DIFFERENCES BETWEEN PERSPECTIVES .....	152
Rasch analysis .....	152
<i>t</i> -Test.....	155
Correlation Analysis .....	158
Non-parametric analysis .....	158
Rank Order Comparisons.....	159
Discussion and implications.....	161
CONCLUSIONS .....	163
CHAPTER 5: DIFFERENCES AMONGST GROUPS OF TEACHERS IN THEIR PERCEPTION OF THE THEORETICAL STANDARDS .....	165
INTRODUCTION.....	165
YEARS OF TEACHING EXPERIENCE .....	167
Analysis of Overall Difference - MANOVA.....	167
Differential Item Functioning .....	168
Discussion.....	173
TEACHER AGE.....	174
Analysis of Overall Difference - MANOVA.....	175
Differential Item Functioning .....	176
Discussion.....	179



SCHOOL STAGE.....	180
Analysis of Overall Difference - MANOVA.....	180
Differential Item Functioning .....	181
Discussion.....	184
POSITION IN SCHOOL.....	186
Analysis of Overall Difference - MANOVA.....	186
Differential Item Functioning .....	187
Discussion.....	191
MENTORING AND SUPERVISION.....	192
Analysis of Overall Difference - MANOVA.....	193
Differential Item Functioning .....	194
Discussion.....	197
CONCLUSIONS.....	198
CHAPTER: 6 QUALITATIVE ANALYSIS OF REPORTS.....	202
INTRODUCTION.....	202
FOUNDATION KNOWLEDGE AND SKILLS .....	204
Knowledge of content and how students learn.....	204
Teaching skills.....	208
Discussion.....	211
CLASSROOM AND STUDENT MANAGEMENT.....	214
Managing learning.....	214
Student management.....	220
Discussion.....	223
THE TEACHING AND LEARNING CYCLE .....	226
Preparation and Planning.....	226
Thinking about and improving on practice.....	230
Discussion.....	233
PROFESSIONAL CHARACTERISTICS AND RELATIONSHIPS .....	235
Personal characteristics.....	235
Professional relationships .....	240
Discussion.....	243
CONCLUSIONS.....	245

CHAPTER 7: DIFFERENCES AMONGST SUPERVISORS' COMMENTS .....	248
INTRODUCTION.....	248
CONSTRUCT VALIDITY AND RELIABILITY OF ESTIMATES. ....	249
Construct validity .....	249
Ordering of aspects of teaching.....	250
DISCUSSION .....	255
ASPECTS OF TEACHING THAT SUPERVISORS FIND EASIER OR MORE DIFFICULT TO COMMENT UPON .....	256
Differences in aspect scores across the four teaching themes.....	257
Differences in the aspect scores across the eight areas of teaching.....	258
DISCUSSION .....	259
DIFFERENCES IN THE EXTENT AND FORM OF COMMENT OF SPECIFIC GROUPS OF SUPERVISORS .....	260
Differences in the extent of comment of specific groups of supervisors .....	261
Differences in the form of comment of different groups of supervisors.....	263
Discussion.....	276
CONCLUSIONS .....	281
 CHAPTER 8: CONCLUSIONS .....	 284
INTRODUCTION.....	284
CONSTRAINTS AND LIMITATIONS ON THE RESEARCH .....	285
DISCUSSION OF FINDINGS .....	286
Teachers' perceptions of the theoretical professional teaching standards.....	287
Supervisors' documentation of student and beginning teachers' practice.....	290
Comparing teachers' perceptions with practice .....	293
FUTURE DIRECTIONS.....	297
CONCLUDING COMMENTS .....	298
 REFERENCES.....	 301

# APPENDICES

APPENDIX 1: SURVEY INSTRUMENT AND SUPPORTING DOCUMENTATION .....	320
APPENDIX 2: UNIVERSITY OF NEW ENGLAND STUDENT TEACHER PRACTICE TEACHING REPORTING PRO-FORMAS .....	3366
APPENDIX 3: SUGGESTED CRITERIA FOR THE ASSESSMENT OF PROBATIONARY TEACHERS .....	3433
APPENDIX 4: THEORETICAL STANDARDS FRAMEWORK .....	3444
APPENDIX 5: RASCH STATISTICS- <i>ACHIEVABILITY</i> QUESTION .....	3455
APPENDIX 6: RASCH ANALYSIS – <i>PREPAREDNESS</i> QUESTION .....	3499
APPENDIX 7: RASCH ANALYSIS – <i>DEVELOPMENT-PRIORITY</i> QUESTION.....	3533
APPENDIX 8: RASCH ANALYSIS OVERALL CONSTRUCT .....	3577
APPENDIX 9: COMMENTS FROM REPORTS .....	3655
Foundation knowledge and skills .....	365
Student and classroom management .....	373
The teaching and learning cycle.....	3833
Professional characteristics and relationships .....	3899
APPENDIX 10: RASCH ANALYSIS NUD*IST DATA.....	3999

## LIST OF TABLES

Table 2.1:	The Five Propositions of Accomplished Teaching.....	66
Table 2.2:	Characteristics of effective teachers.....	74
Table 2.3:	Overview: Standards of practice for the teaching profession .....	76
Table 2.4:	Summary of domains and elements of the theoretical standards framework.....	88
Table 3.1:	Distribution of final year practice teaching reports by group.....	103
Table 3.2:	Distribution of beginning teacher reports by group.....	104
Table 3.3:	Codes used to identify the subjects of supervisors' comments.....	108
Table 4.1:	Cumulative frequency analysis classification of elements with respect to <i>Achievability</i> .....	126
Table 4.2:	Eigenvalues and variance of principal components derived from <i>Achievability</i> ratings.....	128
Table 4.3:	Elements of standards by <i>Achievability</i> – Factor analysis solutions.....	129
Table 4.4:	Rasch analysis <i>Achievability</i> ratings – Summary of estimates.....	130
Table 4.5:	Elements of Standards by <i>Achievability</i> ranking - Rasch estimates....	133
Table 4.6:	Mean and distribution of <i>Achievability</i> estimates by domain.....	134
Table 4.7:	Rasch analysis <i>Preparedness</i> ratings – Summary of item estimates..._	138
Table 4.8:	Elements of standards by <i>Preparedness</i> ranking – Rash estimates....	141
Table 4.9:	Mean and distribution of <i>Preparedness</i> estimates by domain.....	142
Table 4.10:	Cumulative frequency analysis classification of elements with respect to <i>Preparedness</i> .....	145
Table 4.11:	Rasch analysis <i>Development-priority</i> ratings – Summary of item estimates.....	146
Table 4.12:	Elements of standards by <i>Development-priority</i> – Rasch estimates ...	148
Table 4.13:	Mean and distribution of <i>Development-priority</i> estimates by domain.....	150
Table 4.14:	Rasch analysis All data sets – Summary of estimates.....	159
Table 4.15:	Difference between the means for each perspective, <i>t-test</i> .....	155

Table 4:16:	Correlations between <i>Achievability, Preparedness</i> and <i>Development-priority</i> perspectives.....	158
Table 4:17	Significance of perspective differences across domains .....	159
Table 4:18	Perspective ranks and ratings for <i>Achievability, Preparedness</i> and <i>Development-priority</i> .....	160
Table 5.1:	Groups of teachers identified through the survey.....	166
Table 5.2:	Mean <i>Preparedness</i> case estimates by years of teaching experience.....	168
Table 5.3:	Mean <i>Preparedness</i> case estimates by Teacher age.....	175
Table 5.4:	Mean <i>Achievability, Preparedness</i> and <i>Development-priority</i> case estimates by school stage.....	181
Table 5.5:	Mean <i>Achievability</i> and <i>Preparedness</i> case estimates by Position in school.....	187
Table 5.6:	Mean <i>Achievability, Preparedness</i> and <i>Development-Priority</i> case estimates by Mentoring/Supervisory experience.....	193
Table 6.1:	Teaching themes and areas identified by NUD*IST analysis.....	203
Table 7.1:	Rasch analysis Aspects of teaching – Summary of estimates.....	250
Table 7.2:	Rasch estimates Aspect scores.....	252
Table 7.3:	Summary Statistics: Aspect scores by Teaching theme.....	257
Table 7.4:	Summary Statistics: Aspect scores by Areas of teaching.....	258
Table 7.5:	Summary Statistics: Report scores by Supervisor group.....	261
Table 7.6:	Aspects of teaching commented upon more readily by Supervisors of student and beginning teachers.....	268
Table 7.7:	Correlation coefficients standardised differences: Student and beginning teacher supervisor groups.....	269
Table 7.8:	Aspects of teaching commented upon more readily by supervisors of primary and secondary teachers.....	272
Table 7.9:	Correlation coefficients standardised differences: Primary and secondary supervisor groups.....	274
Table 8:1	Comparison between the domains of the theoretical standards framework investigated in Study 1 and the areas of teaching identified in Study 2.....	294

## LIST OF FIGURES

Figure 3.1:	Design overview of the research study.....	97
Figure 3.2:	Data Analysis Plan.....	110
Figure 3.3:	Example of Rasch item fit map.....	113
Figure 4.1:	Item Fit Map – <i>Achievability</i> ratings by elements of the standards.....	131
Figure 4.2:	Item Fit Map – <i>Preparedness</i> ratings by elements of the standards.....	139
Figure 4.3:	Item Fit Map – <i>Development-priority</i> ratings by elements of the standards.....	147
Figure 4.4:	Item fit map ‘overall’ construct.....	150
Figure 4.5:	Item Estimate Map.....	156
Figure 4.6:	Comparison between item estimates by perspective.....	157
Figure 5.1:	Differential Item Functioning: Comparison of <i>Achievability</i> estimates: Years of teaching experience.....	170
Figure 5.2:	Differential Item Functioning: Comparison of <i>Preparedness</i> estimates: Years of teaching experience.....	171
Figure 5.3:	Differential Item Functioning: Comparison of <i>Development-priority</i> estimates: Years of teaching experience.....	172
Figure 5.4:	Differential Item Functioning: Comparison of <i>Achievability</i> estimates: Teacher age.....	176
Figure 5.5:	Differential Item Functioning: Comparison of <i>Preparedness</i> estimates: Teacher age.....	177
Figure 5.6:	Differential Item Functioning: Comparison of <i>Development-Priority</i> estimates: Teacher age.....	178
Figure 5.7:	Differential Item Functioning: Comparison of <i>Achievability</i> estimates: School stage.....	182
Figure 5.8:	Differential Item Functioning: Comparison of <i>Preparedness</i> estimates: School stage.....	183
Figure 5.9:	Differential Item Functioning: Comparison of <i>Development-priority</i> estimates: School stage.....	184
Figure 5.10:	Differential Item Functioning: Comparison of <i>Achievability</i> estimates: Position in school.....	188

Figure 5.11:	Differential Item Functioning: Comparison of <i>Preparedness</i> estimates: Position in school.....	189
Figure 5.12:	Differential Item Functioning: Comparison of <i>Development-priority</i> estimates: Position in school.....	190
Figure 5.13:	Differential Item Functioning: Comparison of <i>Achievability</i> estimates: Mentoring and supervisory experience.....	194
Figure 5.14:	Differential Item Functioning: Comparison of <i>Preparedness</i> estimates: Mentoring and supervisory experience.....	196
Figure 5.15:....	Differential Item Functioning: Comparison of <i>Development-priority</i> estimates: Mentoring and supervisory experience.....	197
Figure 7.1:	Item Fit Map – Aspects of teaching identified in NUD*IST analysis of student and beginning teacher reports.....	251
Figure 7.2:	Report Score – Aspect Score Fit Map: Aspect scores by Teaching area.....	254
Figure 7.3:	Differential Item Functioning: Comparison of Aspect scores: Ms and Pd teacher groups.....	264
Figure 7.4:	Differential Item Functioning: Comparison of Aspect scores: Teaching stages.....	266
Figure 7.5:	Plot comparing infit <i>t</i> statistics with standardised differences: Student teachers-Beginning teachers.....	270
Figure 7.6:	Differential Item Functioning: Comparison of Aspect scores: Teaching contexts.....	271
Figure 7.7:	Plot comparing infit <i>t</i> statistics with standardised differences: Primary teachers-secondary teachers.....	275
Figure 7.8:	Plot comparing infit <i>t</i> statistics with standardised differences: Primary student teachers-secondary student teachers.....	275

## **PREAMBLE**

The concern with teacher quality has been driven by growing recognition, fuelled by accumulating research evidence, of how critical teachers are to student learning. In this, policy makers have been catching up with parents, who have long believed that teachers matter most.

(Darling-Hammond & Sykes, 2003, p.2)

Over the past decade there has been a resurgence of interest in the development and application of professional standards for teachers, a concept which is not new but had its origins more than forty years ago (Zeichner, 2003). However, the absence of professional structures or organisations with the capacity or will to undertake the role of professional arbiter of the quality of teachers and teaching, has meant that there has been slow progress on the development and implementation of professional teaching standards. On this issue, teaching is inconsistent with other professions, where members of the profession are seen to “protect their value and reputation by making informed decisions about what constitutes competence” (Interim Committee for a NSW Institute of Teachers, 2003).

In the absence of any viable professional capacity to undertake responsibility for professional teaching standards, teacher quality and competence have been largely defined and contested by employer and industrial organisations (Darling-Hammond, 1994, 1998b, 2000a; Ramsey, 2000; U.S. Department of Education, 1996; US Department of Education, 1998). In order to bring a more professional view point to these debates, governments in the United States (Kelly, 2000a), the United Kingdom (Department for Education and Employment, 1999), Australia and elsewhere (Ontario College of Teachers Implementation Committee, 1995) have established a range of semi-professional organisations focused on the development and implementation of professional teaching standards. These organisations are having a significant effect on the policy context for developing and applying professional teaching standards.



Although there are a range of such developments underway internationally and in Australia, the debate about the function, form and application of professional teaching standards in NSW continues predominantly to involve employers, industrial and subject-based professional teaching organisations and interest groups. The reality is that the majority of classroom teachers have been largely excluded from these debates. If professional teaching standards are to impact positively on teachers and their practices, they must be recognised by teachers as authentic and achievable descriptions of their work.

Teacher ownership of professional standards is dependent upon the standards having due regard to teachers' perceptions of the standards and relevance to their practice. This thesis addresses these issues by investigating, firstly, teachers' perceptions of professional standards including the homogeneity of their perceptions and; secondly, the implications of teachers' current practices in reporting on teaching practice for the development of professional standards.

The thesis is organised in eight chapters. The first two chapters survey the literature to identify, and provide commentary on, issues involved with the conceptualisation, development and application of professional standards for teachers. Chapter 1 investigates the standards movement generally and the broader professional and educational contexts within which professional standards for teachers are being developed. Chapter 2 reports on progress and issues in the development and application of professional teaching standards overseas and in Australia.

This analysis leads to the development of a theoretical set of standards which are used in subsequent chapters to investigate teachers' perceptions of standards from the perspectives of *achievability*, *preparedness* and *development-priority*. The chapter also includes definitions used in this study. It concludes with an elaboration of the research themes to be explored and research questions to be answered by this thesis.

Chapter 3 begins with a description of the context for the study and an overview of the research design and the epistemological foundations underpinning the two studies that comprise the thesis. The design and instrumentation of the two studies is described in detail as are the techniques employed in the analysis of the data. The research methodologies are also evaluated in this chapter.

Chapter 4 is the first of four chapters reporting the results of the two studies that underpin the thesis. This chapter reports on teachers' perceptions of the theoretical set of standards developed in Chapter 2 from the perspectives of *appropriateness*, *preparedness* and

*development-priority*. It compares teachers' perceptions overall and reports on differences in their perceptions of individual standards. Chapter 5 continues this analysis and reports on differences in the perceptions of primary and secondary teachers, teachers of different ages and experience, promoted and unpromoted teachers, and teachers with and without supervisory experience.

Chapter 6 describes the practices of teachers identified from an analysis of supervisors' reports on student and beginning teachers. Chapter 7 makes use of Rasch analysis to explore differences in the extent of comment on the aspects of teaching identified in Chapter 6 as well as differences in the patterns of comment by different groups of supervisors.

Chapter 8 identifies limitations and constraints of the methodology and discusses the conclusions of the research. It also identifies areas where subsequent research could contribute further to the successful development and application of professional standards.

# CHAPTER 1

## PROFESSIONAL TEACHING STANDARDS: SETTING THE CONTEXT

It is one thing to perfect an instrument, but it is quite another to make sure it is only put to use in ways that are just, virtuous and rational.

Stephen Toulmin, *Cosmopolis*,  
cited in Sykes and Plastrik (1993, p.1)

### INTRODUCTION

The emergence of the culture of 'quality improvement' that is characteristic of contemporary industry and business environments is now apparent in the education sector. Despite the widespread use of, and the importance placed on, the terms 'quality' and 'standards' in industry, business and commerce, as well as in contemporary education policy discourse, there are significant differences in the way they are used. These differences exist because:

within different contexts, a standard [can take] on different meanings and utility. One context is time and space, the physical world we measure. Another is communication, the language and ideas we construct, examine, and reconstruct for meaning. Yet another is cultural, the norms we assess, reward, and sanction.

(Sykes & Plastrik, 1993, p.4)

In education, standards, which set out expectations for students in schools, have emerged over the past decade, as key quality improvement levers for governments seeking to raise levels of educational achievement.

In the absence of agreed teaching standards, judgements about the quality of teachers, particularly at the point of entry to employment, are predominantly made on the basis of graduate or postgraduate qualifications. Despite their widespread use as criteria for determining entry to the profession, and in reporting informally or formally, on the quality of teachers in a school or school system, qualifications represent, only a proxy for judging the quality of teachers and teaching.

The establishment in 1987 of the National Board for Professional Teaching Standards (National Board for Professional Teaching Standards, 1996a) in the United States saw for the first time the parallel development of learning standards for students and teaching standards for teachers. It could be argued that learning standards and teaching standards ought to be intrinsically linked. On one hand, the quality of teaching is an enabling factor in the learning of students (Darling-Hammond, 2000b). On the other, the quality of teaching is inferred from the capacity of teachers to facilitate learning. Questions associated with the development and application of standards for teachers are the major concerns of this study.

This Chapter outlines the environment in which professional teaching standards are being developed under five main headings. First, it discusses how standards and related quality improvement terminology are used in a range of contexts. Second, it considers the contexts in which professional teaching standards are being promoted, these include attempts to address teachers' concerns about their status and standing in the community, and government policy responses to increasing student, parent and community expectations of school education. Third, it investigates policy and research contexts in which professional teaching standards are being developed. Fourth, it discusses the application of standards to curriculum and assessment, and identifies issues relevant to the development of professional teaching standards. The final section discusses a range of theoretical competence models as a basis for the development of professional teaching standards.

### **'STANDARDS': MAKING SENSE OF THE TERMINOLOGY**

The *Macquarie Dictionary* provides both a generic meaning and a specific meaning for the term standards. Its generic definition, "a grade or level of excellence" is inferred when we refer, for example, to community standards of behaviour. Its specific meaning, "anything taken by consent as a basis of comparison," is intended when we refer, for example, to standard measures, such as the standard metre. The discussion of standards that follows relates to both, but the focus is on the specifics of professional teaching standards.

This section considers a range of meanings attributed to the word standards arising from its use in commerce and industry, as well as education. It reports on differences in the meanings attributed to standards within the education sector itself, and also how the meanings of other quality improvement terms vary in different contexts. Finally, it proposes definitions for specific quality improvement terms to ensure consistency in the way they are applied throughout the following Chapters.

### Uses of standards in industry

'Standards' is not a new concept in industry. Although, standard weights and measures have long been essential in trade and commerce, the

globalization of industry and markets, rapid technological changes, environmental and consumer concerns, and the move towards less government regulation have made voluntary standardization efforts more important than ever.

(Standards Engineering Society, 1999, p.1)

Indeed, standards

are now absolutely critical to the survival and prosperity of companies marketing in multiple nations ... It is not unusual for a product marketed in Europe to have been assembled in the U.S. from components made in Asia.

(American National Standards Institute, 1999, p.1)

Although in these contexts, the term standards<sup>1</sup> infers conformity or consistency, the term is used also to infer quality, that is, a grade of excellence. In the quality domain, a set of standards has a number of dimensions. Standards can be used to ensure high levels of quality control in the manufacture of a product: that is, to define acceptable levels of error or allowable manufacturing tolerances (Everhart, 1997, p.1). They can apply to chemical composition of materials or even the quality of the air, although these latter standards are expressed in terms of recommended maximum levels of human exposure to pollutants (EPA: United States Environmental Protection Agency, 1998). The term is used also in the context of quality control standards for pharmaceuticals. In this instance, standards are expressed in terms of rates of adverse reaction to specific dosages of a medicine (US Food and Drug Administration, 1999). Standards also apply to the wear and durability of the materials used to make surgical implants (International Standards Organisation, 2003).

More recently, standards have been used to describe quality in organisations or in their management, e.g., Institute for the Accreditation of Professional Employer Organisations (1999). The International Standards Organisation's ISO 9000 series of *Quality Management Standards* is accepted as the industry benchmark standard for performance management in organisations. In these contexts, standards take on a further dimension, that is, one of quality

---

<sup>1</sup> The term 'standards' is used in two ways in this study. When used as singular it refers to a set of standards. When used as plural it refers to individual elements of a set of standards or to sets of standards.

improvement. This perspective is made clear in the draft *Quality Management Principles* developed in the revision of the ISO 9000 series.

The draft defines a quality management principle as a

comprehensive and fundamental rule or belief, for leading and operating an organisation, aimed at continually improving performance over the long term by focusing on customers while addressing the needs of all stakeholders.

(International Standards Organisation, 1997, p.3)

Standards have also been developed to define education and skill requirements in particular professions and occupations. Such standards commonly ascribe minimum levels of competence – usually in terms of skills or qualifications – and set out ongoing learning requirements for members of the profession or vocational calling (Australian Medical Association, 1996, 1998; Public Relations Society of America, 1988). In a number of professions, separate standards have also been established as a basis for accreditation of high level expertise, e.g., specialist doctors and barristers. Eraut (1994, p.212) commented that whatever their broader purposes, one role of occupational standards is to “establish a reasonable level of agreement and common understanding on the definition of competence.”

To sum up at this point, the term standards is applied in industry and commerce to measurements, objects and processes, as well as to the performance of organisations and individuals. Conceptions of a standard as a static concept have been extended to include the notion of quality improvement. Given this range of conceptualisations, it is not surprising that there are differences in how standards are defined and articulated.

Within the specific industry-based discourse of ‘quality improvement,’ the term standards has been defined in a number of ways, consistent with the specific meaning put forward by the Macquarie Dictionary. For example, according to Standards Australia (1998, p.2) a standard is

a published document which sets out technical specifications or other criteria necessary to ensure that a material or method will consistently do the job it is intended to do.

Likewise, the Standards Council of Canada (1999, p.1) reported “standards are publications that establish accepted practices, technical requirements and terminologies for diverse fields of human endeavor.” Both of these definitions vest the meaning of standard in the document or publication.

An important question concerns how should standards and other related quality improvement terminology be defined to address the needs and quality improvement context of the educational constituency? These issues are taken up in the following parts of this section.

### **Conceptualising standards in the educational context**

As noted in the Introduction to this chapter, standards in education are now central to government strategies for quality improvement in education. Nonetheless, the lack of consistency in how standards and other quality improvement terms are defined in business and industry extends to the education sector. Hunter (1999) considered this issue from the perspective of how standards are developed. He commented

[v]irtually all scholars concur that standard setting is a judgemental exercise. A standard can only be as good as the judgements and evaluative processes used in setting it. Popham (1978, p.379) has argued that serious standard-setting which relies “on decent collateral data, wide-ranging input from concerned parties, systematic efforts to make sense out of relevant performance and judgemental data is not capriciously arbitrary. Rather, it represents the efforts of human beings to bring together their best analytic powers to bear on important decisions.”

(Hunter, 1999, p.2)

Further, he drew attention to two criticisms of the use of standards in education. First, standards represent a form of standardisation “that denies the individuality of people and undermines the unique transactional nature of teaching,” and second, “standards, because they are human creations, are arbitrary” (Hunter, 1999, p.2). With reference to the first criticism, he pointed to the potential of standards to act as “external referents to guide successful professional practice” (p.2). In response to the second, he cited Livingston and Zieky (1982) “once a standard has been set, the decisions based on it can be made objectively. ... Standards cannot be objectively determined but they can be objectively applied” (Livingston & Zeiky, 1982, cited in Hunter, 1999, p.2).

In education, the term standards has in the past referred to a level of performance, inferred from test results. Increasingly, in curriculum and in the area of professional standards for teachers, standards are defined in terms of expectations of performance. For example, the New Zealand Ministry of Education’s *Interim Professional Standards: Primary School Deputy Assistant Principals, Primary School Teachers* (1998, p.1) defined standards thus

Professional standards describe the important knowledge, skills and attitudes that all teachers and deputy assistant principals are expected to demonstrate.

Similarly, Ingvarson (1997, p.1) noted of the profession-developed standards, articulated by the National Board for Professional Teaching Standards (NBPTS) in the United States, that professional teaching standards

clarify what the profession expects its members to get better at ... Profession defined standards provide the basis on which the profession can lay down its agenda and expectations for professional development and accountability.

It is worth mentioning at this point that the procedures of the National Board for Professional Teaching Standards and its professional teaching standards were endorsed by the American National Standards Institute, (Sanders, 1994) thus closing the so-called quality circle, a feature of the Total Quality Management (TQM) movement. A more detailed analysis of the Board's work and other professional teaching standards developments follow in a later section of this and in the following chapters.

Sykes and Plastrik (1993, p.4) defined standards as "a tool for rendering appropriately precise the making of judgements and decisions in a context of shared meanings and values." This definition arose from their brief from the National Council for Accreditation of Teacher Education (NCATE) in the United States, to ensure that standard setting activities provided "firm, stable and shared guidance to the education system." In contrast with the definitions noted previously, this definition was intended to emphasise:

- a pragmatic adherence to the purpose of the standards in their construction;
- the required degree of precision;
- their use in making judgements and decisions;
- their justification within some system of meanings and values; and
- the dynamic and problematic aspects of the process of creating a shared normative framework.

They noted also that standard setting "like other matters of human judgement and social decision making, embodies a complexity that belies its simpler images" (Sykes & Plastrik, 1993, p.4).

Paradoxically, work undertaken in Australia to clarify the meaning of a range of accountability terms, including the term 'standards,' confused the issue further. The Taskforce charged with revising the *Australian National Goals for Schooling* noted that consistent definitions were needed to ensure that educationalists and the treasury-based economists "would speak a



common language in the context of the National Goals” (National Goals Taskforce, 1999, p.47). The outcome of this work, however, potentially widened the gap between the way the terms are to be used by the educational bureaucracy and the primary consumers of the products of school education, such as parents, providers of further education and training, and employers.

The definition of standards adopted by Australian Ministers of Education at their April 1999 Ministerial Council Meeting (National Goals Taskforce, 1999, p.34) retreated to the generic interpretation, noted above, and defined standards as “agreed levels of excellence in performance or accomplishment in academic or non-academic pursuits.” This definition did not take into account the kind of approach recommended by Sykes and Plastrik (1993) or those adopted by industry-based agencies providing endorsement of standards.

In addition, the overall approach to educational quality improvement set out in the National Goals Taskforce’s report moved the focus of educational improvement strategies from more subtle quality assurance measures towards explicit accountability measures. Although *Strengthening Australian Schools: A Consideration of the Focus and Content of Schooling* (Dawkins, 1988) promoted increased accountability, the educational improvement agenda which emerged from the initial 1989 version of the *National Goals for Schooling*, was based on quality assurance type strategies. Nevertheless, some ten years later, the revised National Goals could be characterised as having adopted an accountability-based educational improvement strategy. Although State and Territory Ministers did not endorse the specific ‘performance targets’ associated with the 1999 revision of the *National Goals for Schooling*, the implied shift from implicit quality assurance measures to explicit accountability targets could be characterised as moving from carrot-based to big-stick-based improvement strategies.

Tom (2000) noted similar changes in emphasis in the United States.

... an interesting evolution occurred and moved the ideological battles in the various subject matter areas in an entirely different direction. From being goals to be aspired to, the standards became increasingly viewed as criteria which must be fulfilled. ... The instrumental goal of efficiency – how can we best accomplish particular standards – increasingly took the place of the philosophical question of what standards should we pursue.

To underpin this more explicit accountability-based strategy, the National Goals Taskforce established definitions for a range of terms in addition to standards. These included benchmarks, outcomes, goals, targets, outputs, effectiveness, inputs, efficiency, performance measures, objectives, achievement levels, competencies, competence, essential learnings, proficiency and aims (National Goals Taskforce, 1999, pp.33-34). Although standards are

foundational to the quality improvement strategies of agencies, such as the Australian Standards Association, the National Goals Taskforce saw standards as a second-order term.

In summary, within the education sector, the meaning attributed to the term 'standards' is not universally agreed. The term is used variously to mean a level of excellence or performance, goals to be achieved or the knowledge, skills and capacities expected of teachers. It is this latter meaning that is explored within this thesis.

### **Benchmarking performance**

The term 'benchmarks' also has a range of meanings that differ between industry and educational contexts. In industry, the term is used to refer to the process of performance measurement. For example, Sill (1996) defined a benchmark as "a **test** [emphasis added] that measures the performance of a system or subsystem on a well-defined task or set of tasks." Similarly, The Benchmarking Network (1999) defined a benchmark as "a performance measurement tool used in conjunction with improvement initiatives to measure comparative operating performance and identify Best Practice." At other times benchmark is taken to mean 'best practice' against which an organisation judges its own performance.

In education, the term is commonly associated with the minimum level of accepted or expected performance, e.g., "The benchmarks describe the necessary knowledge and essential skills students would be expected to achieve at approximately grade 7" (Commission on Student Learning, 1997). Similarly, the Australian National Goals Taskforce established by the Ministerial Council on Employment, Education, Training and Youth Affairs defined a benchmark as the "expected minimum levels of performance at defined points in schooling" (National Goals Taskforce, 1999, p.53).

The issue for educationalists is confused further, if the definition of Close, Miller, Titterington, and Westwood (1996) is taken into account. They defined benchmarks and standards in the context of the United States *National Science Education Standards* (National Research Council, 1996) and *National Science Literacy Benchmarks* (American Association for the Advancement of Science (AAAS), 1993) as follows:

The Benchmarks are intended to serve as curriculum design tools to help schools promote scientific literacy, specifying the levels of understanding and ability that all students are expected to reach along the path towards becoming literate in science. The Standards ... [go] beyond science content considerations to provide

frames of reference for judging the quality of teaching, professional development, assessment, science education programs and education systems.

(Close et al., 1996, p.1)

Clearly, the discussion above highlights the need to develop common understandings about the way quality is both described and ascribed in educational contexts. The following guidelines for developing workforce specifications identified by the Foundation for Industrial Modernisation (FIM) (1995, p.2) provide a helpful guide:

What is the action? [skill]

What are the conditions under which the action is performed? [assessment]

How good is good enough? [measurement criteria]

How will the action be measured? [portfolio, test, observation]

Why must the action be performed? [rationale]

These guidelines distance the terms standards and benchmarks from the broader theoretical debates considered earlier in this section. Although some commentators may be critical of the use of these guidelines on the grounds that they reflect a particular behaviourist philosophy of competence, their effect is to shift the focus of the debate from theory to practice. In doing so, they give a practical meaning to the term benchmark, that is, a benchmark is a response to the question 'how good is good enough?'

### **Summary**

There is little consistency in the way quality improvement terms are used across and within business, industrial, scientific and educational communities. The terms standard, benchmark and quality are often used interchangeably, even within the same context. Increasingly, industry is using the term 'standard' to refer to the specification of agreed levels of performance or to agreed specifications of technical requirements.

In comparison with other business and industry sectors, however, education has been slow to adopt a more explicit quality-improvement focus. In this sense, the education sector, and, in particular, the school education sector has been left to react to an established quality agenda. This agenda does not entirely represent the uniqueness of the existing relationships between teacher educators, school authorities, teachers, students, parents and the community.

The challenge in developing professional standards for teachers is two-fold. The first challenge is to ensure that the particular statement of professional standards, agreed by the various

educational stakeholders, represents the complexity of teachers' work and the range of expectations of teachers and learners. The second, and potentially more problematic, is to reach agreement on benchmarks setting out the level or quality of expected performance of teachers at different stages of their career.

## **PROFESSIONALISATION OF TEACHING, THE STATUS OF TEACHERS AND TEACHER PROFESSIONALISM**

Teachers, themselves, are amongst the strongest advocates of professional teaching standards. At various times they have proposed their development as the means of achieving the professionalisation of teaching, of raising teacher status, and of enhancing teacher professionalism.

The distinction proposed by Sockett (1990) between the process of 'professionalisation' of teaching and the concept of teacher 'professionalism' has been maintained in the following discussion. Professionalisation refers to the process by which occupations seek to gain status and privilege in accord with the community's concept of a profession. Professionalism concerns "the skills, knowledge and values of teachers" (Furlong, Barton, Miles, Whiting, & Whitty, 2000a). Status refers specifically to the standing of teachers in the community.

Despite the currency of debates about professionalisation, professionalism and the status of teachers these are not new issues. The status of teachers, teachers' professionalism and professionalisation were the focus of educational debate more than 50 years ago (American Association of Colleges of Teacher Education, 1970; Council for Exceptional Children, 1966; Fris, 1975; Gress, 1975; Joint Committee on Professional Standards Boards, 1967; Texas Education Agency, 1972; Ward, 1968).

Professional teaching standards are a common element or means to achieving the goals of professionalisation, higher status and increased professionalism. This section explores issues concerning these three goals and presents a commentary on progress towards realising them.

### **Recognising teaching as a profession**

Attempts to establish teaching as a recognised profession have a relatively long history. In Australia, MacNeil, a former Principal of Wesley College, proposed in a speech delivered to the 1946 ANZAAS Conference that a Teachers' Guild be established which would include all

Australian teachers and “speak with authority in all matters affecting the profession itself, on ethics, etiquette, status of teachers and projected education changes” (Boston, 1999b). The issue was raised again by Russell at the Australian College of Education Foundation Conference in 1956. He proposed the need for the college to “give leadership to a growing profession in a new age” and to “administer its own standards and engage in self evaluation” (Australian College of Education, 1960 quoted in Boston, 1999b).

More recently, in the United States, the Holmes Group (1986, p.ix) identified in *Tomorrow’s Teachers* its goal as “nothing less than the transformation of teaching from an occupation into a genuine profession.” Abdal-Haqq (1991, p.1) commented that this statement implied “first, that teaching is not a profession; and second that there is something desirable, both for teachers and the public welfare, in making teaching a profession.” While there is general support for the Holmes Group’s assertion, there is less agreement on how this vision might be achieved.

Traditionally, efforts to conceptualise teaching as a profession have focused primarily on identifying or delineating lists of characteristics common to other professions. Characteristics of professions identified by Burbules and Dunsmore (1991), Case, Lanier, and Miskel (1986), Haberman (1986), and Pratte and Rury (1991) include:

- professional autonomy;
- a highly developed and specialised and theoretical body of knowledge;
- certification and licensing requirements for new entrants to the profession;
- self regulation especially with regard to professional ethics;
- a commitment to public service; and
- a highly developed collegium.

The issue of professionalisation of teaching was discussed also by Beare who, in 1992, noted eight characteristics of a profession. These include: an esoteric service; pre-service study; registration and regulation of the profession by itself; peer appraisal and review; a professional code of conduct; earned status; an ideal of public service; and client concern (Beare, 1992, pp.67-70).

Burbules and Dunsmore (cited in Abdal-Haqq, 1991, p.1) labelled these kinds of approach to “teacher professionalisation” the “taxonomic approach.” Such an approach is concerned primarily, with listing “characteristics which are typical of occupations that have been traditionally regarded as professions” (Abdal-Haqq, 1991, p.1). But achieving the standing of a

formal profession is much more complex than merely 'checking-off' characteristics of teachers against classifications of the kind noted above.

A different perspective is evident in the definition of a profession advanced by the Australian Council of Professions (1997). The Council sets a high value on the ethical dimensions of being a profession.

A profession is a disciplined group of individuals who adhere to ethical standards and uphold themselves to, and are accepted by the public as possessing special knowledge and skills in a widely recognised body of learning derived from research, education and training at a high level, and who are prepared to exercise this knowledge in the interests of others.

It is inherent in the definition of a profession that a code of ethics govern the activities of each profession. Such codes require behaviour and practice beyond the personal and moral obligations of an individual

They define and demand high standards of behaviour in respect to the services provided to the public and in dealing with professional colleagues.

Further, these codes are enforced by the profession and are acknowledged and accepted by the community.

(Australian Council of Professions, 1997, p.1)

This definition raises the issue that prior to

arriving at any valid concept of what constitutes a profession, it is necessary to explore the relationship that exists between members of that profession and the wider community.

Brock (1999, p.12)

Brock cited Longstaff (1996, p.109) on this issue.

If the idea of a profession is to have any significance, then it must hinge on this notion that professionals make a bargain with society in which they promise conscientiously to serve the public interest – even if to do so may, at times, be at their own expense. In return, society allocates certain privileges. These might include one or more of the following:

- The right to engage in self regulation
- The exclusive right to perform certain functions
- Special status

...

At all times it must be remembered that what society gives, it can take away. It only accords the privileges on the condition that members of the profession work to improve the common good. ... Once again, it should be noted that a capacity for a profession to fulfil this rule depends on the extent to which the broader community trusts its judgement and motives.

Brock noted that this aspect of common or social good “ought to be the foundation for any framework of ethical [teaching] standards” (Brock, 1999, p.14). The Institution of Engineers, Australia, considered this aspect of professionalisation in its recent review of engineering education in Australia, when it noted:

The social contract model of a profession emphasises the service orientation to which professionals are supposedly committed, in return for the privilege of self-regulation of their profession. In this model professionals are not solely wedded to economic self-interest, but rather they are the guardians of public trust.

(Johnson, 1996, p.19)

Brock (1999) contended, that any attempt to identify the social good provided by teachers must serve the needs of students rather than teachers.

Through addressing the needs, taking account of the interests, and challenging the capacities of each individual student – the essential good pursued by the profession of teaching is to maximise the *learning* opportunities that will help each individual student achieve personal excellence in the intellectual, personal, social, cultural, physical, moral, spiritual and other aspects of human development.

(Brock, 1999, p.15)

While Brock’s analysis inferred that there is a strong element of social good in the way teachers undertake their responsibilities, this is not sufficient to conclude that professional standing can be unilaterally declared. Professional standing is reliant on an element of reciprocity, which is bound up in the social contract the profession makes with the community. The status of a profession is, in a sense, bestowed by the community on a profession as an act of faith in its motives and capacities. This sense of reciprocity may be as important to achieving teachers’ goal of professionalisation as the exhibition of specific group characteristics. Given the increasing community perceptions that teachers have failed to deliver on the higher standards of education now expected, (Joint ILO/UNESCO committee of experts on the application of the recommendation concerning the status of teachers, 1998) there is reduced likelihood of teachers being granted the privilege of self-regulation which is characteristic of a profession.

A further view of professionalisation was advanced by Diessner (1997) who considered two perspectives. The first perspective being that a profession is based, not so much on the

content of the work, but on the manner in which it is performed. He based this view on the definition advanced by McIntyre (1984) that a “practice” was

any coherent and complex form of socially established cooperative human activity through which goods internal to that form of activity are realized in the course of trying to achieve those standards of excellence which are appropriate to, and partially definitive of, that form of activity, with the result that human powers to achieve excellence, and human conceptions of the ends and goods involved are systematically extended.

(McIntyre, 1984, cited in Deissner, 1997, pp.5-6)

He noted that this definition allowed “all systematic forms of work that is in service to a community to be potentially the work of a professional” (Diessner, 1997, p.7). The second perspective advanced by Deissner was what he termed a ‘normative position’ on the nature of a profession which

revolves around two factors: a) the right and responsibility to act from principles and not simply the technical rationality of rules, and b) the right and responsibility to systematically investigate the effectiveness of one’s work.

(Diessner, 1997, p.1)

These two perspectives reinforce the service nature of the work of professionals and their capacity to evaluate and refine their practice. These are characteristics of teachers, and support to some extent the contention of Martineau (1998) who noted that although teaching is far from achieving formal recognition as a distinct profession, it already demonstrates the characteristics of a profession in that it is an

intellectual activity that requires professional responsibility. It is a learned activity, not a mechanical one, and requires judgement and reflection. It is not only learned, but practical, because its aim is not theoretical speculation and development. It is learned in part through lengthy study at university. There is an internal cohesion amongst those who practise it. And, professional activity is a service to society.

(Martineau, 1998, p.1)

D. Hargreaves (2000) also considered teaching a profession, based on the definition advanced by Abbott (1988) that a common feature of all professions is service to clients requiring diagnosis, inference and treatment.

Diagnosis and treatment are mediating acts: diagnosis takes information into the professional knowledge system and treatment brings instructions back from it [...] inference [...] takes the information of diagnosis and indicates a range of



treatments with their predicted outcomes.

(Abbott, 1988 cited in Hargreaves, 2000, p.221)

These points of view were supported by Ramsey (2000). He concluded that teachers are professional people, but unlike other recognised professions, such as law or medicine, there are few structures to allow teachers to take responsibility for the professional aspects of their practice. In particular, agreed professional standards to enable teachers to evaluate their work or mechanisms to communicate within their profession were largely absent. The absence of such structures, common in other professions, was advanced as a reason for the lack of public recognition of teachers as professionals.

Ramsey noted that professional standards are an integral part of the structures and guidelines established by recognised professions to guide the work of their members and to determine also who is entitled to practise. Whether these objectives can be achieved will depend, in part, on the level of professional autonomy enjoyed by teachers. Ramsey noted that this professional autonomy arises from changes to the teacher labour market as an increasing proportion of teachers become self employed.

If, as Ramsey (2000) and Martineau (1998) suggested, teaching is already a profession, then formal recognition of this fact may be a lesser issue than failure to attain the status and public standing of a recognised profession. The following sub-section discusses issues concerned with the status and public standing of teachers.

### **The status of teachers**

Perceptions about the low status of teaching are of increasing concern both to teachers and to those responsible for educational policy. Low status and consequently the unattractiveness of teaching as a career and in particular, the “unattractiveness of the teaching profession to the brighter students” (Joint ILO/UNESCO committee of experts on the application of the recommendation concerning the status of teachers, 1998, p.7) is perceived to be affecting the supply and quality of teachers in schools.

Several recent studies have sought to identify the causes of low status. Predominant amongst these are the report of the Joint ILO UNESCO Committee of Experts on the Application of the Recommendation Concerning the Status of Teachers (1998) the report of the Australian Commonwealth Government’s Senate Employment Education and Training References Committee (1998) and the Report of Ontario College of Teachers (1995).

Although, the traditional response of teacher unions to concerns of low status for teachers has been to call for increased wages, the ILO UNESCO Joint Committee noted, as a general cause for the decline in status of teachers, “a community perception ... that their main preoccupation has been with their own salaries and benefits” (1998, p.7).

*A Class Act*, the report of the Australian Senate Employment Education and Training References Committee (1998) differentiated between ‘individual’ status and ‘group’ status. The report commented that, individually, many teachers are held in high regard by their students, communities and peers because of their skills, integrity and professional acumen. As a group, however, teachers have not been able to develop the institutional structures needed to establish a professional voice. Consequently, they have failed to consolidate the degree of group status befitting the importance of their work. *A Class Act* noted, the view, put almost universally to the Committee, that the status of teachers in Australia was declining. The report noted also that while teachers see themselves as professionals, their professional status and professionalism is not generally recognised by others.

Identifying low status of teaching as a concern is easier, however, than determining how to raise the status of teachers.

The Senate Employment Education and Training References Committee (1998) argued that the adoption of professional standards for teachers was necessary to increase the status of teaching. It proposed the establishment of a national system of professional standards to underpin teacher registration and cited the trend towards the development of professional standards enforced through mandatory teacher registration in the United Kingdom, in Ontario, and other international contexts.

But there is not universal support for the proposition that professional standards and teacher registration are sufficient to raise teacher status. Kemp, Commonwealth Minister For Education, Training and Youth Affairs commented on the proposal of the Senate Employment, Education and Training References Committee to recommend registration of teachers in its then draft report, *A Class Act*, that:

the Commonwealth believes that the external imposition of registration will not necessarily improve the education offered in our schools nor enhance the professional standing of teachers.

(Kemp, 1997, p.7)

Simpson (1997, p.1) proposed an alternative viewpoint. He noted that since the “status of teachers is an amalgam of a variety of impressions gained by members of the public from their

own experiences as children” efforts to raise the status of teachers could be beyond any explicit action that the profession might take. This conclusion was supported by Figgis (1998) who argued that increased status for teachers in Australia was dependent not only upon the articulation of professional standards, but also upon better reporting and recognition of educational success in the media. Hence, while the teaching profession investigates more complex responses to the issue of its low status, such as professional standards, the cure might be dependent upon old fashioned remedies as indicated in this comment from Laird: (1998, p.4) “trivial and unfair though it may be, teacher dress and appearance are always of interest to the public.”

Therefore, while teachers seek increased status through higher salaries and other strategies, the public’s perception of teachers, based upon their professional bearing, their effectiveness as teachers, and their contribution to the social good (Brock, 1999) may be more critical to increasing their status. These imperatives are bound up in the concept of teacher professionalism.

### **Teacher professionalism**

The term professionalism has significant currency in a range of professional settings. The Canadian Information Processing Society (1997) noted:

[P]rofessionalism implies taking responsibility and being accountable for one’s work and performing that work to the highest possible standard.

Rather than setting out to define the term, a number of other professional organisations point to institutional structures designed to ensure professionalism or high standards of practice. For example, the American Academy of Actuaries (1999, p.1) observed that:

[A]ctuarial professionalism rests on three pillars: qualifications to provide professional services, adherence to the profession’s standards of practice, and compliance with the ethical standards set forth in the Code of Professional Conduct.

Smith (1999) considered such structures in teaching to be deficient:

We need to further develop the professionalism of teachers and to have a unified code of ethics that matches other professional bodies. I do not believe that the current professional standards and regulatory framework reflect the importance of teaching to the nation.

The Saskatchewan Teachers Federation (1997, p.2) commented that

Professionalism is not encapsulated in a defined set of occupational attributes but, is better represented by a continuum along which occupations to varying degrees exhibit a set of beliefs and behaviours associated with the idea of professionalism. The term *professionalism*, therefore, 'is a collective symbol ... not a neutral and scientific concept.'

This view that professionalism could not be reduced to a listing of attributes was supported by Eraut (1994). He commented that such lists were often advanced without clearly argued justification and were based on their proponent's view of "the most salient characteristics of high-status professions" (p.1). He considered professionalism to be more an ideology which "accord[s] primacy of place to the professional knowledge base" of the occupation. Bound up within this ideology are notions of "unique expertise, moral integrity, confidentiality, and protection from political abuse" (p.2).

Much of the discussion of teacher professionalism in the literature is from the perspective of contributions to the professional knowledge base or practice of teachers. For example, Harrington (1987) discussed teacher professionalism in terms of factors identified with competence or proficiency. She identified eleven factors which contribute to teacher professionalism: the individual, the setting, teacher schedules, resource allocation, support of administrators, belief in the value of the teachers' contribution, shared educational philosophy, focus on the needs of the student, a sense of collegiality, openness to experimentation and training and development.

Caldwell (1999) pursued a related theme, discussing implications for teacher professionalism in the context of changed dimensions of practice. He highlighted changes arising from the demands of new teaching subject knowledge, the increased importance of diagnostic and assessment tools to support a focus on individual student learning needs, the emergence of team-based teaching approaches and cross-cultural communications and attempts to involve parents more effectively. He noted these priorities required "a more sophisticated body of knowledge and skill than in the past, and a new and very demanding set of expectations to live up to" (Caldwell, 1999, p.5).

Other emerging educational priorities, such as requirements for employability of school graduates and the demands of technology, have been identified also as challenges and opportunities for teachers to redefine their knowledge base, and hence themselves as professionals (Fernandez, 1999; Yu, 1999). Consequently, the identification of new professional priorities for teachers has led to the development of training and development initiatives

designed to 'enhance the professionalism of teachers' (Barker, Kagan, Klemp, Roderick, & Takenaga-Taga, 1997; Eric Review, 1995; Training and Development Directorate, 1999).

An alternative view on professionalism was advanced by Sockett (1993) who considered professionalism in teaching from the perspectives of its moral foundations grounded in notions of community, knowledge, accountability and ideals. This moral perspective was also pursued by Goodson (1999) who grounded his discussion of the ethical dimensions of professionalism in an analysis of teachers' working lives.

Further perspectives on professionalism were advanced by Hargreaves (1997) who noted, in a commentary on possible future developments in education, increased opportunities for raising teacher professionalism in the post-modern age. This post-modernist perspective was considered by Sachs (1999). She identified two types of professionalism operating over the past decade: "democratic professionalism," which emphasised collaborative, cooperative action between teachers and other stakeholders; and "managerial professionalism," which stressed accountability for achievement of measurable outcomes. Sachs suggested that these two forms of professionalism were being overtaken by a new "activist view of professionalism [which] recasts the political and professional role of teachers in quite fundamentally different ways" (Sachs, 1999, p.1). Her model of "activist professionalism" has been based on the notions of "active trust" and "generative politics" advanced by Giddens, (1994) which require a shift in the focus of analysis and action from the individual to the group.

Despite the differences apparent in the viewpoints above, the nature and quality of teaching practice remains the underlying focus of conversations about teacher professionalism. Increasingly, professional teaching standards are seen as fundamental to describing the nature of teachers' work and to establishing expectations about the quality of teaching practice.

### **Summary**

The rationale for the development of professional standards arising from efforts to professionalise teaching, raise the status of teachers, and enhance teacher professionalism could be said to be based largely on teacher or 'profession' focused imperatives. These aspirations have fuelled a debate which has endured for more than fifty years. The issues are complex. There are multiple perspectives on each, with no particular viewpoint or agenda being dominant. Despite the importance teachers attach to each of these agendas, Ramsey (2000) contends, at least in the context of his Review of Teacher Education in New South

Wales, that teachers are further from achieving any of them than in the past. His analysis of developments in a range of professions indicates that this situation is unique to teaching.

Without professional structures the goal of professionalisation appears, at this time, to be out of the reach of teachers. Professional standards and codes of ethical conduct are essential elements of such structures.

The means available to teachers to enhance their status are not readily apparent. Indeed, industrial action by teachers to gain salary parity with other professions, ostensibly as a means of raising their status, has turned public opinion against teachers, and hence damaged their status and standing. Nonetheless, the availability of professional teaching standards has been identified as a mechanism for enhancing the status of teachers.

The concept of professionalism represents a broader and more recent debate about the quality of teachers and teaching. The following quote makes this point strongly:

Let me speak directly. I think this pursuit of status is fruitless; that we have to discard the word, the concept and the longing; and until we do we will continue to be distracted from the main game of teacher professionalism which is about development and maintenance of a critical mass of excellent practitioners with the knowledge about their practice, and about the monitoring of that knowledge and practice through standards.

(Boston, 1999b, p.6)

The discussion above has identified multiple perspectives on teacher professionalism and how it could be identified and fostered. Even so, the proposition advanced by Darling-Hammond (1994; 1998a) and Ingvarson (1997; 1999a; 1999b) that professional standards be developed, which are capable of clarifying and explaining what teachers should know and be able to do has the potential to raise teacher professionalism.

Thus, teachers' images of themselves as professionals and the community's response to issues of teacher professionalism provide a significant context for the development of professional teaching standards.

## **POLICY AND EDUCATIONAL RESEARCH CONTEXTS**

In contrast with the previous section which considers issues of concern to teachers, this section, policy and research contexts represent factors largely external to the teaching profession. Policy and research contexts, however, provide complementary and possibly more

compelling rationales for the development of professional standards for teachers than achievement of the professionalisation, status and professionalism.

Internationally, the quality of education represents a common policy theme, but because of different social, economic structural and political constraints, the policy response in individual countries varies. Initially, the focus of this educational quality movement was on the curriculum and its assessment. More recently, the quality of teachers and teaching has received greater attention. Supporting and facilitating changes in policy emphases are changes in research emphases, and consequently, the emergence of research findings emphasising the importance of good teaching.

The following sub-sections elaborate on these developments over the past three decades as a further context for the development of professional teaching standards. The first sub-section explores educational policy developments in the United States, England and Wales, and Australia, in particular, in New South Wales respectively. The remaining sub-section considers changes in the focus of the research context and, in doing so, discusses how research provides a further rationale for the development of professional standards for teachers.

### **The policy context**

Policy development is an evolutionary rather than a revolutionary process, and consequently, it is difficult to point to any particular antecedent to specific initiatives to develop professional standards for teachers. Barcan (1999, p.1) noted in his review of school reform movements in the United States, England and Wales, New Zealand and Australia, that such reforms are a global phenomenon to which countries such as Australia “both contribute and derive ideas.” The broad social, cultural and economic contexts leading to such reform movements are, however, common.

A new impetus for reform, this time emanating from economists, politicians and Ministries rather than from Departmental bureaucracies, started about 1987. This movement was driven by a serious economic recession, accentuated by the remarkable competition of the surging East Asian economies. Many other western societies, notably England, New Zealand and America, made similar efforts to reform public education.

(Barcan, 1996, p.1)

McIntosh (1995, p.1) described the policy environment of the 1980s similarly.

By the mid to late 1980s the emphasis on economic imperatives in the education system was manifesting itself through exhortations ... to schools to help restructure the economy to become more internationally competitive and improve the skills base of the economy. At the same time the 'economically rationalist' view of how public institutions, including schools, should operate came to dominate. As a consequence a range of changes and reforms under the guise of 'productivity improvements,' 'efficiency' and 'market outcomes' were instituted.

Much of the current interest in education, particularly its instrumental orientations, appears to have been influenced by the policy development work of the Organisation for Economic Cooperation and Development (OECD). Its report, *Education and Working Life*, (OECD, 1997) drew attention to the need for Governments to strengthen the links between education and employment. The report emphasised the idea that better preparation in education for working life was an important way of facilitating the transition to stable and satisfying employment. This had a number of consequences for education and training including providing new emphases on vocational education and training, the quality of education and the need for research to improve the relevance, effectiveness and credibility of government policies in education.

Welsh (1998) commented on developments in this quality movement

by 1985, 'quality' was very much on the international education agenda. In 1984 OECD Ministers met in Paris and recommended that the OECD Education Committee incorporate analysis and exchange of information on the 'quality of basic schooling' as a key element of its work. The OECD report, *Schools and Quality* (1989), was the culmination of that work.

She noted several reasons for the emphasis on quality including public scrutiny of education both from an economic perspective and from an educational perspective. Technological innovation also increased the demand for high quality schooling through its requirement for a more highly skilled workforce (OECD 1989, p.20). Furthermore, international studies which allowed comparisons to be drawn between the outcomes of schooling in different countries raised concerns that countries would lose their competitive edge in the world economy. These concerns stimulated interest in educational quality (Welsh, 1998, p.12).

Regardless of these common economic imperatives, the specific political and educational contexts of different countries meant that they responded differently.

### ***The United States***

The impetus for professional standards in education, at least in the United States, arose from the release of the now famous report, *A Nation at Risk* (National Commission on Excellence in



Education, 1983). Marzano and Kendall (1997, p.2) reported comments by Seldon, Director of the State Assessment Center at the Council of Chief State School Officers, that

after this prominent expose on public education, state and local leaders set out to improve the education system through new policies, such as increasing the rigor of graduation requirements. When these efforts produced disappointing results, policy makers turned to national goals and standards.

The report provided an indictment of the quality of school education in the United States. It recommended the need to reform the school curriculum, raise expectations of students, use school time more effectively, and improve the quality of teachers and teaching.

Significant reform efforts ensued from the report, however, the 'fragmentation of responsibility' (Barcan, 1999) between federal, state and local authorities provided a confused focus for change. Consequently, although there has been significant reform of the curriculum and assessment practices, and a range of school reform movements, little progress has been made in enhancing the outcomes of school students (*A Nation Still at Risk*, 1998).

Nevertheless, following the release of *A Nation At Risk*, the Carnegie Corporation's Taskforce on Teaching, released the report, *A Nation Prepared: Teachers for the 21<sup>st</sup> Century*, which recommended the establishment of the National Board for Professional Teaching Standards. The National Board was established in 1986 as

a nonprofit, nonpartisan, nongovernmental organisation to establish high and rigorous standards for what accomplished teachers should know and be able to do, to develop and operate a national voluntary system to assess and certify teachers who meet these standards.

(National Board for Professional Teaching Standards, 1996b, p.3)

Further impetus was given to efforts to raise the quality of teachers and teaching in a report from *The National Commission on Teaching and America's Future* (1996) which found that

fewer than 75 per cent of America's teachers can be considered fully qualified: that is having studied child development, learning, and teaching methods; holding degrees in their subject areas; and having passed state licensure requirements.

(US Department of Education, 1998, p.3)

Consequently, in 1999 the United States Government confirmed its support for the initiatives of the National Board for Professional Teaching Standards by providing further funding to enable

teachers to be accredited by the National Board. These developments are discussed in greater detail in the next chapter.

### ***England and Wales***

The policy response in England and Wales to the economic imperatives of the 1980s was concerned, initially, with attempts to improve technical-vocational preparation and to reform the school curriculum. The latter being concerned mainly with the development of a national curriculum for school students. Much of the reform was in response to criticisms of low educational standards. The reforms to the curriculum and continuing tensions over the directions being pursued were summarised by Barcan (1999).

Over the past decade the focus of reform in England has shifted to the quality of teacher education and standards for teachers. Responsibility for these reforms has been vested in a range of statutory authorities. These include: the Office for Standards in Education (OFSTED), which has responsibility for the inspection of schools and teacher training institutions; the Teacher Training Agency (TTA) responsible for establishing teaching standards, and managing the funding of teacher education; and the General Teaching Council which was established to serve the professional interests of teachers.

More recently, professional standards have been proposed as a necessary precursor to the implementation of performance appraisal and merit-based pay strategies for teachers (David Blunkett Secretary of State for Education and Employment, 1998). Along with developments in the United States, these also are described in greater detail in Chapter 2.

### ***Australia***

Reforms in Australia have taken different pathways. Brock and Mowbray (1998) in their analysis of national and international professional teaching standards developments, noted that the impetus for the development of professional standards for teachers in Australia could be linked to three policy agendas. These were policies designed to enhance the quality of teaching and learning in schools, broader employment-based policies seeking to define occupational standards and competencies, and calls from teacher educators to develop a system of self-regulation.

The first of these policy agendas arose out of the Dawkins (1988) paper, *Strengthening Australian Schools*, referred to previously. This paper proposed a reform agenda based on the development of national goals for schooling and greater coherence between the curriculums of

individual states and territories. The purpose of the reforms was to enhance the quality of teaching and learning in Australian schools.

Consistent with this quality theme, Dawkins went on to establish the National Board for Education, Employment and Training (NBEET) in 1988 as an umbrella organisation for the provision of statutory advice to the Federal Government. For the first time, stakeholders – academics, professionals, and representatives of business and industry – were brought together for their individual and collective expertise in the employment, education and training arenas. It is important to note that the forums for advancing teacher quality issues at this time included members of professional and industrial organisations.

The Board addressed issues of teacher quality through its councils: the Schools' Council; the Employment and Skills Formation Council; the Australian Language and Literacy Council; and, the Higher Education Council. Most active of these, in the field of teacher quality, was the Schools' Council. It released a number of reports including *Teacher Quality: An Issues Paper* (1989), *Teacher Education in Australia* (1990), *Australia's Teachers: An agenda for the next decade* (1990), and *Agenda Papers: Issues arising from Australia's Teachers: An agenda for the next decade* (1991). These reports identified and recommended strategies to maintain the supply of quality teachers in Australian schools as well as for meeting professional development needs, including the development of professional standards.

The reports led to a further round of profession-led teacher quality initiatives in the early 1990s. These include the National Project on the Quality of Teaching and Learning (NPQTL), the Australian Council of Deans, the Advanced Skills Teacher Project, the Australian Literacy Federation (ALF), and the Australian Research Council (ARC). Consequently, the report of the National Project on the Quality of Teaching and Learning (NPQTL) led to the development of the *National Competency Framework for Beginning Teachers* (National Project on the Quality of Teaching and Learning, 1996).

The second policy agenda arose from broader attempts to define occupational standards in the context of the *Australian Standards Framework* (ASF) (National Training Board, 1991). This framework established a basis for the development of professional standards in a range of occupations, in the form of occupational specific competencies. Although individual professions were to be responsible for articulating their own 'professional standards,' the *National Office of Overseas Skills Recognition* (NOOSR) was given responsibility for assessing professional standards as part of the *Migrant Skills Recognition Strategy*.

The subsequent attempts to develop professional standards for teachers in Australia using a 'competency-based' model were the subject of considerable disagreement. Burrow (1993, p.110) wrote, "the education community [was] divided by the value and effectiveness of competency-based training." Similarly, Collins (1993, p.3) commented the "competencies approach has been part of the discourse of the training sector for a dozen years ... In the 1990s, however, the competencies approach has spilled out of the training sector." Although it was accepted that teachers should be able to demonstrate 'competence,' the profession was broadly of the view that the proposed competency-based model was not able to characterise adequately the complexity of the knowledge, understanding, skills and attitudes expected of a competent teacher (Preston & Walker, 1993). More recently, Ramsey (2000) rejected the training sector's competence model for the development of professional standards on the grounds that they set out minimalist expectations rather than providing the basis of a developmental framework to extend the capacities of teachers.

The third policy imperative for the establishment of professional standards arose from pressures within the teacher education sector. The expectations placed on initial teacher education by Governments and teacher employers were rising at a time when resources had decreased (Ministerial Advisory Council on the Quality of Teaching (MAQT), 1999). Gale, Erben, and Danaher (1997) in their response to the *Refereed Proceedings of the July 1997 Australian Teacher Education Association Conference* referred to the need for a new settlement in teacher education to respond to the increasingly market-based orientation of teacher educators' work.

Although Dawkins (1988) had cautioned against focusing education policy too narrowly on economic considerations, some writers (Deer, Meyenn, Taylor, & Williams, 1995, p.1) noted almost a decade later that education increasingly is "seen as a branch of economic policy rather than a mix of social, economic and cultural policy" with consequent demands for greater accountability. They reported an increasing general impression that teacher education was not keeping up-to-date with educational developments, and argued the need to adopt a system of "self regulation for teacher education before it was forced on the teacher education world" (Deer et al., 1995, p.1).

### ***New South Wales***

In New South Wales, Williams, O'Donnell, and Sinclair (1997) noted three developments in their arguments for developing professional standards to underpin a system of teacher registration and for accreditation of teacher education courses. These were:

- (i) concerns for child protection following the Police Royal Commission investigation into paedophilia;
- (ii) the report of the Ministerial Advisory Council on the Quality of Teaching to the Minister for Education and Training on the outcomes of public consultation on the issues raised in the Ministerial Discussion Paper, *The Establishment of a Teacher Registration Authority in New South Wales*; and
- (iii) the potential for a shortfall between the number of teacher education students who will graduate from universities and number of teachers who will be required in schools as we move towards the new millennium.

To support establishment of the proposed Teacher Registration Authority, John Aquilina, Minister for Education and Training, requested the Strategic Policy Branch of the then Department of Training and Education Coordination undertake a major project to:

formulate policy identifying teacher standards or proficiencies or competencies for all teaching and learning areas in NSW schools, and to identify ways of ensuring that such standards or proficiencies or competencies are attained and maintained by teachers.

(Aquilina, 1997)

This project resulted in the release of the monograph *Towards Identifying Professional Teaching Standards for New South Wales Schools* (Brock & Mowbray, 1998). Subsequent to consultation on the Ministerial Discussion Paper, noted above, legislation providing for the mandatory registration of teachers was presented to Parliament in New South Wales. The Legislative Council of Parliament, however, deferred consideration of the Bill on the casting vote of its President. Although many argue that registration of teachers against professional standards is a necessary condition for raising teacher quality, it has proven more difficult to sustain the argument that it is a sufficient condition.

Subsequently, the Ramsey Review of Teacher Education in New South Wales rejected the possibility of teacher registration on the grounds that it was founded on notions of minimal standards (Ramsey, 2000).

In New South Wales at least, professional standards may need to be progressed in contexts other than teacher registration. Examples of such developments exist in other Australian States and elsewhere. In Victoria, the former *Standards Council of the Teaching Profession* developed professional standards in contexts that did not require teacher registration (Standards Council of the Teaching Profession, 1997). Similarly, the L3 teaching project

(Jasman, 1997; 1998a; 1998b; 1999a; 1999b; 1999c; Jasman & Barrera, 1998) established standards for accomplished teachers in Western Australia without the need for teacher registration.

### ***Further policy imperatives***

Concern with the quality of teachers and teaching is not a recent phenomenon, nor is it confined to the countries considered above. Public concerns with the quality of teachers and teaching, and with the high number of uncertified teachers in Scottish schools was noted by the General Teaching Council for Scotland (GTCS) (quoted in Williams et al., 1997, p.2) as a rationale for the establishment of the Council in 1965. In Ontario, Canada, the Ontario College of Teachers was established, independent of government, to enhance the status and professionalism of teachers. Only teachers registered by the College against professional standards were licensed to teach (Grant, Adamson, Craig, Marrin, & Squire, 1998).

As in the United Kingdom, the New Zealand government has attempted also to link professional standards to performance appraisal and teacher remuneration (New Zealand Ministry of Education, 1998, p.1).

Despite the lack of agreement about the nature and purpose of standards, noted earlier, there is significant policy consensus amongst governments, teachers and teacher educators in Australia, the United States and the United Kingdom on the need and potential for professional standards to enhance the quality of teaching. Nevertheless, there are differences in how different countries have progressed professional standards for teachers. These differences are the subject of a later section of this chapter.

### **The research context**

Although efforts to establish professional teaching standards can be linked to a range of policy agendas, Laird (1998) advanced a different hypothesis. He noted a link between changes in the focus of research into what makes for effective learning and the development of professional teaching standards. He suggested three phases of research.

The first phase arose out of the work of Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, and Yorke (1966). It focused attention on the influence of social class and culture on learning. This focus had two effects:

- (i) the provision of additional resources to correct 'natural' or cultural disadvantages through programs, such as Headstart in the USA and the Disadvantaged Schools Program in Australia; and
- (ii) the development of differentiated learning materials targeted towards under-privileged groups.

Laird (1998) commented, that both these major trends, underplayed the role of teachers with curriculum materials being "sometimes deliberately designed to be 'teacher proof'" (Laird, 1998, p.1). Such was the claim made at that time for curriculum materials developed as 'programmed learning' initiatives and for the Science Research Association (SRA) 'teaching' and 'testing' programs (Brock, 1999, pers. com.).

Some programs established then still exist, albeit surviving numerous revisions. However, their efficacy is now coming under increasing scrutiny, particularly from conservative political elements. Ravitch (1999) in a review of educational developments in the United States for the Brookings Institute, claimed that

The largest categorical Federal Programs – Title I, special education, bilingual education and Head Start – were created to provide equality of educational opportunity. All were established with high hopes, but none has lived up to the expectations of its sponsors. All are ripe for reform.

The 1997 reform of the Disadvantaged Schools Program in Australia, reflected similar concerns of loss of focus. The reforms removed discretion for expenditure of supplementary funds provided under the program from schools, and required them to provide explicitly for the literacy and numeracy development of their students.

The use of differentiated learning materials for so-called under-privileged students is also being questioned. The review of the Higher School Certificate in New South Wales demonstrated quite clearly that high-achieving students in lower-socio economic areas of western and south-Western Sydney had a lower rate of enrolment in higher level courses in English than other areas of the state (McGaw, 1997, p.44). The subsequent reform of senior school curriculum in New South Wales – to provide a less differentiated curriculum – was specifically designed to reduce the potential for students to enrol in less challenging courses.

Laird's second research phase arose out of the work in the 1980s of Rutter (1979), Mortimore and Sammon (1987) and, Purkey and Smith (1983) "which drew attention to the influence of school culture on student learning" (Laird, 1998, p.2). He suggested that this research, together

with research into school leadership, gave rise to the 'effective schools movement' and, in particular, to extensive reforms in the devolved management of public schools. The results of these reforms are evident in the Charter schools movement in the United States, the Local Management of Schools (LMS) in the UK, and devolution initiatives in New Zealand and Australia, "especially in Victoria through the Schools of the Future program" (Laird, 1998, p.2).

In arguing for a more holistic understanding of the kinds of reform needed, Ingvarson (1999b, p.6) noted that "the teacher is a more fundamental unit of change in terms of student learning." He cited Peterson, McCarthy, and Elmore (1996) who found in a study of school restructuring that "changing practice is primarily a problem of teacher learning, not a problem of organisation." Elmore (1996, cited in Ingvarson 1999a, p.7) observed, after finding the majority of promising educational initiatives this century were adopted by fewer than 25 per cent of teachers, that "change needs to be based on more explicit theories about how teachers learn to do things differently."

Laird's third research focus concerned research into effective teaching and the effectiveness of teachers. The availability of student achievement data enabled quantitative analysis of the effect of teacher factors on student outcomes. Laird noted research by Hill, Rowe, and Holmes-Smith (1993) in Victoria. Their analysis showed that teacher effects had greater impact on student outcomes than the school system, or school. Others, such as Fetler (1999), Greenwald, Hedges, and Laine (1996), and Hanushek (1996) have also investigated the relationship between teacher quality and teacher effectiveness finding that student outcomes were related to teacher quality.

More recently, Darling-Hammond (2000b) reviewed evidence of studies on the effects on student learning of a range of teacher variables including general academic ability and intelligence, knowledge of subject, pedagogic knowledge, teaching experience, certification status and teachers' behaviours and practices. She noted that although much of the evidence was inconclusive and contradictory, "the positive effects of subject knowledge are augmented or offset by knowledge of how to teach the subject to various kinds of students" (Darling-Hammond, 2000b, p.5). She also provided an analysis of the differing effects of teacher characteristics, state policies and performance in statewide testing programs on student progress. She concluded, "while student demographic characteristics are strongly related to student outcomes at the state level, they are less influential in predicting achievement levels than variables assessing the quality of the teaching force" (Darling-Hammond, 2000b, p.30).

In addition to these research findings, Laird (1998) noted "a variety of societal factors has produced a commonly held view that high performance for all students is required, and that



there should be clear measurement of performance to illustrate this.” This view, based on the premise that given the right conditions all children can learn, has arisen from the ‘outcomes’ movement in education. Mowbray, Parker, and Squires (1998) cited the following principles adapted from Capper and Jamison (1993, pp.427-446) as providing the basis for the current focus on teaching and assessing syllabus outcomes in NSW

- Every student can learn and succeed: given sufficient time, appropriate methods and materials all students can succeed at a satisfactory level.
- Success breeds success: when students experience success at one task, they are more likely to succeed on a task at the next level of difficulty because they now have a foundation of knowledge on which to base their learning and are motivated by their success.
- Schools control the conditions of success: schools adopt practices designed to enable students to achieve success in desired outcomes. This requires a restructuring of curriculum design and delivery, student grouping and assessment. Above all, though, it requires a change in teachers’ expectations of their students.

(Mowbray et al., 1998, p.6)

This view shifts the responsibility for learning ‘failure’ from the student to the teacher, and when viewed in conjunction with the research noted above linking the quality of teacher qualifications and characteristics to the quality of learning outcomes, makes “high performance for all teachers ... mandatory as a government policy priority” (Laird, 1998, p.2). Thus, policies aimed at teacher improvement strategies, such as professional teaching standards, may well be a more effective educational quality improvement lever than the curriculum and assessment focused strategies commonly pursued by governments over the past decade and a half.

### **Summary**

The quality of teaching and learning is a common policy focus across the countries studied, but developments in individual countries have proceeded in idiosyncratic ways which have more to do with political perspectives, governmental and school structures than any identifiable policy antecedents. Professional standards represent a policy response to concerns about the quality of teachers and teaching.

On the one hand, there are demands for increased accountability for teachers through registration against standards. On the other, there are calls for teachers to have greater responsibility for establishing standards through self-regulation. Although these competing accountability and quality assurance agendas add to the pressure for the introduction of professional standards, they represent different approaches to their development.

Research into identifying those factors that make a difference in schooling shows a clear link between the quality of teachers and teaching, and the learning outcomes of students. When considered against increasing demands for all students to achieve at higher standards, this research mandates government action to raise the quality of teachers and teaching. The extent to which governments will hand over to teachers the responsibility for the development of professional standards and the privilege of self-regulation is considered in Chapter 2.

### **STANDARDS IN LEARNING AND ASSESSMENT WITHIN NATIONAL AND INTERNATIONAL EDUCATIONAL CONTEXTS**

The previous section considered contextual factors arising from broad policy developments in a range of countries. Standards for teachers do not stand alone from other quality improvement developments in education. In many countries, the development of learning and assessment standards has preceded that of teaching standards. These provide a conceptual context for the development of professional teaching standards.

As with the work undertaken to identify curriculum outcomes for students, much conceptual development needs to be undertaken to clarify the purpose and form of professional standards and, consequently, benchmarks for outlining accepted levels of performance for teachers. Unless broad general agreement on the purpose and form of professional standards is reached amongst teachers and others charged with their implementation, their development may not proceed, or worse, proceed with little impact on practice.

This section considers issues for professional teaching standards arising from the development of curriculum standards, in particular, it focuses on (i) the development of curriculum standards, and (ii) assessment of student learning.

#### **The curriculum standards movement**

Over the past decade there has been significant re-conceptualisation of school curriculum in Australia and overseas. The focus has shifted from curriculum stating what should be taught in schools, to curriculum that sets out what children are expected to learn. In some countries (viz, the United Kingdom and the United States) such curriculum carries the appellation “curriculum standards.” Within the Australian context, individual states use a range of nomenclature including ‘Curriculum frameworks,’ ‘Profiles and outcomes,’ and ‘Outcomes-based curriculum.’

Despite the almost universal adoption of outcomes-based curriculum or curriculum standards in contemporary school education, their conceptualisation, development and implementation was not achieved without controversy. The following discussion of developments in the United States, in England and Wales, and in New South Wales provides ample evidence of such discord.

### ***The United States***

The impetus for the initial work to define curriculum content standards in the United States arose out of the critical report *A Nation at Risk*. Marzano and Kendall (1998) noted that standards development has largely been undertaken at two levels. The first has involved professional associations for teachers, and the second State governments. The lead for the work of professional associations was provided by the 1989 report of the National Council of Mathematics Teachers, *Curriculum and Evaluation Standards for School Mathematics*, which identified three reasons for involvement in standards development.

First, standards often are used to ensure that the public is protected from shoddy products.

Second, standards often are used as a means of expressing expectations about goals. Goals are broad statements of social intent.

Third, standards often are set to lead a group toward some new desired goals.

(National Council of Teachers of Mathematics, 1989)

Marzano and Kendall (1998, p.1) noted “standards documents have [now] been published [with the aid of funding from the US Department of Education] by virtually every national subject-matter organisation.” The concern identified by these authors is that in some cases, for example Science, a number of so-called national standards has been developed. These authors cite three sets of standards: *The National Science Education Standards* (National Research Council, 1996); *Benchmarks for Science Literacy* (American Association for the Advancement of Science (AAAS), 1993); and *Scope, Sequence, and Coordination of National Science Education Content Standards* (Aldridge & Strassenburg, 1995). They have rightly asked, “which document contains the definitive listing of content standards in science” (Marzano & Kendall, 1998, p.3).

This situation is compounded at the second level of development. Almost all States have developed their own content standards. These developments, in keeping with States’ constitutional responsibility for education, have generally been designed to underpin statewide testing programs. A report prepared for the American Teachers’ Federation, however, noted

that “most States still need to improve some of their standards in order to provide the basis for a common core of learning” (Gandal, 1998 cited in Marzano & Kendall, 1998, p.3).

There were also concerns about differing approaches to standards, too many outcomes and poorly written standards lacking the clarity and specificity for implementation (Marzano & Kendall, 1998, pp.8-9). Moreover, there is a broad tension between State rights and Federal rights in the United States. These are exemplified by the Goals 2000: Educate America Act which was enacted in 1994 to establish mechanisms to:

- (1) certify and periodically review voluntary national content standards and voluntary national student performance standards that define what all students should know and be able to do;
- (2) certify State content standards and State student performance standards submitted by States on a voluntary basis, if such standards are comparable or higher in rigor and quality to the voluntary national content standards and voluntary national student performance standards certified by the National Education Standards and Improvement Council;
- (3) certify and periodically review voluntary national opportunity-to-learn standards that describe the conditions of teaching and learning necessary for all students to have a fair opportunity to achieve the knowledge and skills described in the voluntary national content standards and the voluntary national student performance standards certified by the National Education Standards and Improvement Council;
- (4) certify opportunity-to-learn standards submitted by States on a voluntary basis, if such standards are comparable or higher in rigor and quality to the voluntary national opportunity-to-learn standards certified by the National Education Standards and Improvement Council.

(Goals 2000 Act: Section 211, Congress of the United States of America, 1994)

The developments in the United States were characterised by Pascoe, as “an assessment reform movement that was related to the standards movement” (1997, p.28). But there are increasing criticisms of the use of such assessment-focused educational reforms. These criticisms concern the potential to atomise learning and to reduce its scope to only that which can be efficiently tested. Other criticisms are concerned with the validity of the assessment measures (Biddle, 1997; Bigelow, 1999a; Jennings, 1999; Rothstein, 1998) and the potential impact on educational provisions for students from diverse backgrounds (Bigelow, 1999b). The following comment in response to lower than expected test results in Virginia flowing from “tough new standards for schools and students and tough new tests to measure them” (Olson, 1999, p.1) is indicative of some criticism of assessment-focused educational improvement policies.

The state insisted on testing first, training teachers second, and purchasing new books and teaching materials third, which is the exact opposite of what you need to do, Frank E. Barham, the executive director of the Virginia School Boards Association, said. "I don't think it's a reflection of what our kids know or don't know, as much as the state getting the process backwards."

(Olson, 1999, p.3)

Tom (2000, p.6) encapsulated the prevailing educational and policy tensions:

State legislatures, however, did not necessarily have in mind a broad conception of education, and the rich subject matter content embedded in the standards was often reduced to the so-called "basics" for elementary and secondary school youngsters.

...

In the U.S. the evolving pattern is state-level testing of subjects thought to embody the basics, with the idea that schools (and often teachers) should be rated and rewarded in relation to the test results of their students. The standards movement, which began as an attempt to broaden and deepen the teaching of the various subjects, has ended up a device to measure the effectiveness and productivity of public schools.

Thus, the development of learning and assessment standards in the United States continues to be controversial. The initial concerns about conception and form are now being overtaken by concerns about their underlying purpose.

### ***England and Wales***

In response to concerns about falling educational standards, the Thatcher Government introduced, in 1988, the Education Reform Act, mandating a national curriculum and corresponding system of testing" (Tell, 1998, p.1). In its conception, the ensuing national curriculum could be characterised as an example of an educational standards development.

For each subject and for each key stage [in the National curriculum], programmes of study set out what pupils should be taught and attainment targets set out the expected standards of pupils' performance.

(Department for Education and Employment, 1995, p.2)

However, the National Curriculum has also undergone a number of revisions. The initial conception of standards was not well received by teachers charged with their implementation, or by academics. Campbell (1992) noted five features to commend the national curriculum:

1. a clear sense of children's entitlement to education;

2. improved breadth and balance of subjects;
3. a bias towards conceptual assessment over testing;
4. an updating of concepts taught in science and technology including the use of computers;  
and
5. higher standards.

Despite these positive aspects, Campbell commented that assumptions, underpinning its implementation, about teacher approval, commitment, expertise and workload as well as the staff and time available to schools were misguided. Likewise, Osborn, Broadfoot, Abbott, Croll, and Pollard (1991) noted that implementation of the curriculum required teachers to change their teaching approach, classroom practices, and professional role perceptions, resulting in pressures of time, work intensity and loss of autonomy and job satisfaction.

The curriculum has since been revised to address these and other concerns. The most recent revision released by the Blair Government as *The Revised National Curriculum for 2000*, (Qualifications and Certification Agency, 2000) was intended to provide:

- a single set of teaching requirements;
- greater coherence within and between subjects, as well as with other strategies such as the national strategies for literacy and numeracy;
- a stronger emphasis on the rationale for each subject; and
- statutory statements on the use of language and integration of information and communication technology across the curriculum.

As in the United States, the National Curriculum has evolved as a tool to support assessment aimed at measuring school performance. The use of such assessments in high-stakes school accountability contexts in the United Kingdom has been criticised by Gillborn and Youdell (1998). These writers raised concerns about the apparent potential arising from the use of such assessments to increase inequality in education through the diversion of school-based resources away from students most in need, towards students more likely to succeed at higher levels.

### ***New South Wales***

Eltis (1995) provided a historical overview of events in New South Wales leading up to his 1995 report *Focusing on Learning: Report of the Review of Outcomes and Profiles in New South Wales Schooling*. He noted that the catalyst for this work in Australia, as referred to earlier,

was the Dawkins' statement *Strengthening Australia's Schools* which "invited cooperation from all education systems in undertaking a more concerted national effort 'to strengthen the capacity of Australia's schools'" (Eltis, 1995, p.6). He reported that Dawkins identified seven focus areas:

- the purposes, objectives and priorities of schooling
- increased school retention
- education and equity
- a common curriculum framework
- a common approach to assessment
- priorities for improving the training of teachers
- maximising investment in education including determining ways to enhance cooperation, joint undertakings, and remove unnecessary differences in schooling in Australia.

(Eltis, 1995, p.6)

Subsequently in 1989, the Australian Education Council of Ministers endorsed what was known as the *Hobart Declaration: the Common and Agreed National Goals of Schooling*, and approved a range of collaborative curriculum activities, building on earlier work initiated in 1988 by Directors of Curriculum. This work involved identification and mapping those curriculum elements common to the range of existing State and Territory syllabuses and the development of national statements in eight learning areas: English, Mathematics, Science, Studies of Society and Environment, Languages Other Than English, Technology, The Arts, Health and Physical Education.

Eltis (1995) noted that in addition to work on curriculum, the Ministerial Council established a working party to report on student achievement. This working party advocated the development of student profiles, which were envisaged as helping teaching and learning in the context of a common framework for reporting on student progress and achievements. When completed, the 'National Statements' were intended to provide a curriculum development framework, while the 'profiles' were intended to provide a map of typical student progression. That these developments were not universally supported is evident in the critique provided by Clements (1996) who argued strongly against outcomes statements, indicators and profiles describing them as "expressions of neo-behaviourism" (p.1) and their development as a "top-down 'authority-innovation-decision-making model'" (p.2).

Nonetheless, within this broader national context, the NSW Government had already taken a decision in 1990 to legislate to require the Board of Studies to include statements of outcomes in NSW syllabuses. The Education Reform Act, 1990 Section 14 (3) stated:

Any syllabus developed or endorsed by the Board for a particular course of study is to indicate the aims, objectives and desired outcomes in terms of the knowledge and skills that should be acquired by children at the various stages of schooling.

The rationale advanced for the use of outcomes by the Board in 1991, however, stated that:

Outcomes can assist teachers by:

- inviting focus upon the product as well as the process of teaching
- providing specific guidance for planning the learning environment, programming learning activities, selecting appropriate teaching resources, and evaluating courses
- providing a focus for assessment
- defining the content level of the syllabus more precisely
- assisting in determining student need whether it be for consolidation, extension activities, remediation or progress to another stage
- clarifying the type of student achievement to be assessed by helping teachers make realistic decisions about appropriate knowledge, skills and values for students
- providing concrete means of establishing whether an objective has been achieved
- assisting reporting of student achievement
- providing students with a clear perception of goals to be achieved
- giving parents, employers and the wider community a clearer understanding of the instructional intent and likely achievement of students.

(New South Wales Board of Studies, 1991, p.7)

The melding of the National and State developments occurred when Chadwick, then NSW Minister for Education and Youth Affairs, instructed the Board of Studies in 1993 “to incorporate the outcomes of the National Profiles into Board syllabuses” (Eltis, 1995, p.8). Interestingly, the completed Board of Studies syllabuses were not well received (Eltis, 1995; Eltis & Mowbray, 1997).

There were significant concerns about the nature and number of outcomes within and across the range of curriculum areas, the workload implications for teachers, and conflicting approaches to assessment emerging from school systems and the Board of Studies. In 1995,



the incoming Minister commissioned the Review of Profiles and Outcomes in NSW Schooling. Subsequent to the Review, the Minister endorsed the reviews recommendation that:

[he] affirm the prime role of NSW syllabuses in describing the curriculum content – knowledge, skills and understandings – in each subject area;

- the expected learning outcomes in syllabuses be the basis for the development in school settings of: [sic]
  - teaching programs for school classroom use, and
  - data on students' learning achievements, including samples of students' work.

(Eltis, 1995, Recommendation 1, p.i)

Subsequent to the Eltis Review, McGaw (1996) canvassed the issue of curriculum standards in the Higher School Certificate Greenpaper, *Their Future*. His response to consultation on the Greenpaper *Shaping their future: Recommendations for the Reform of the Higher School Certificate* (McGaw, 1997) noted two contrasting conceptions of a 'curriculum standards framework.' He made a distinction between the implicit standards or expectations inferred by syllabus objectives and outcomes and the explicit standard or quality of performance achieved by students. This blurred the distinction between the specific and the generic definition of standards noted previously.

### ***Lessons from curriculum standard developments***

This analysis of learning-standards developments in, the United States, England and Wales, and New South Wales provides a number of lessons for those seeking to develop professional standards for teachers. Not the least of these is the need to clarify the purpose of professional standards. But, there are also lessons about form. These were identified by Brock and Mowbray (1998) from their analysis of international developments in this area. They noted the need to ensure that:

- any specification of outcomes must be framed according to the broad areas of knowledge, skill, and understanding and professional values needed to undertake the complex role of a teacher
- the individual elements of competence are inter-related and any attempt to isolate them or treat them as discrete entities would be disastrously unproductive
- elements of competence or proficiency described in a statement of standards need to have demonstrable outcomes, either quantitatively or qualitatively

- the elements of competence should be described in continuous prose: lists of individual 'behaviourist' or 'check list' outcomes are to be avoided as they run the risk of atomising the elements of teachers' work.

(Brock & Mowbray, 1998, p.63)

There are also lessons to be learned about the application of standards from school-based assessment practices in this new standards environment.

### **Assessment of student learning**

In general usage, the term assessment is not applied to teacher effectiveness. Elliot (1990) drew a distinction between the 'assessment' of student learning and the 'appraisal' of individual teacher performance. This study avoids such a distinction, as there is much to compare and contrast in the two contexts.

Much effort has been expended in developing methods for validly and reliably assessing student learning. In comparison, despite the importance of the quality of teachers and teaching in the learning process, little work has ensued into ways of assessing teaching effectiveness. Even so, teachers are subject to continuous assessment or appraisal of their effectiveness throughout their careers. Students, parents, peers and supervisors make continuous judgements about teachers' effectiveness for a range of formal and informal purposes, such as for appointment and promotion, performance appraisal as well as to make judgements about the effectiveness of the teaching being received.

Evidence upon which such assessments are based arises, primarily, from a range of subjective sources and the decisions about relative 'competence' are framed against personal and often idiosyncratic notions of teacher effectiveness. Thompson (1999) found that principals' brought a range of collegial, intuitive, covert, third-party, and inspectorial approaches to the appraisal of beginning teacher competence. He noted that such approaches to teacher appraisal are often based on "'gut feelings' and are difficult to quantify" (Thompson, 1999, p.28).

Two recent developments in student assessment have particular relevance to the assessment of teachers against professional teaching standards. The first relates to how assessment evidence is collected or presented to support subsequent assessment. The second involves the empirical attribution of 'quality of performance' measures to that information.

Portfolios are commonly used in industry as a means of judging the quality of work. Increasingly, they are being used to collect and present evidence of student learning, often supplementing or replacing traditional assessment methods and information (Darling-

Hammond & Aness, 1994; Eltis, 1995). Proponents of portfolios claim that the evidence collected is richer, covering a broader range of outcomes than that assessed through traditional pen and paper tests. Frederick and Shaw (1996) concluded from a survey of 162 primary-school teachers from twelve primary schools in southwest Alabama that portfolios have had an impact on teaching strategies. They reported also that teachers felt that portfolios were more useful in communications about achievement between students and teachers, and between teachers themselves than communications between parents and teachers, and teachers and school authorities.

Grubb and Courtney (1996) noted that portfolios allow teachers to observe development, to evaluate the curriculum, to determine efficacy of their teaching practices, and to facilitate faculty discussions. They reported also that they support students' self-evaluation, goal setting, and learning opportunities. Hebert (1998) observed that one surprising outcome of the use of portfolios in assessment has been the profound importance to children of the process of selecting samples of work and assembling them into a portfolio.

Other research shows that, not only do well-constructed portfolios provide a richer source of assessment evidence, they assess different outcomes to those of traditional tests. Reckase (1997) compared assessments arising from school-based portfolios with the results of American College Testing Program (ACT) assessments using a combination of content analyses, multidimensional analyses and cluster analyses. His results showed that portfolios provided evaluations of student performance on major writing tasks and on those mathematics skills concerned with data analysis and problem solving. The standardized test provided information about the details of the writing process and the rules for manipulating mathematical expressions.

Although the proponents of portfolios claim that their assessment is more authentic than other forms of assessment: some contest this view. Terwilliger (1997) reported that portfolio-based assessment generally shows a bias in favor of performance over more basic outcomes, such as the acquisition of knowledge. He said that portfolios do not offer a more psychometrically sound basis for assessment, being based possibly on unsound concepts of growth. He also questioned their value in the face of the inordinate investment of time and effort on the part of teachers.

Despite these concerns, portfolios are being used increasingly in assessment in teacher education and teacher certification. Part of their attractiveness, is their capacity to enable prospective teachers to reflect on their professional competence, and to demonstrate their teaching effectiveness and growth (Morin, 1995). Doolittle (1994, p.1) stated

a teacher portfolio is designed to demonstrate the teacher's talents. Thus, teacher portfolios are constructed by teachers to highlight and demonstrate their knowledge and skills in teaching. A portfolio also provides a means for reflection; it offers the opportunity for critiquing one's work and evaluating the effectiveness of lessons or interpersonal interactions with students or peers.

The second development in assessment concerns advances in educational measurement and assessment. Such developments provide the means of empirically quantifying 'quality of performance' measures, thus, giving scale and meaning to performance.

Recent developments in New South Wales illuminate this point. As noted above, in discussion of McGaw's work with the New South Wales Higher School Certificate, it is difficult to conceptualise or to articulate curriculum standards without considering the quality of performance. McGraw demonstrated empirically, using item response theory, that it was possible to develop a scale of achievement for each subject from data provided through conventional examinations process. This scale of achievement could be linked to "descriptors that give meaning to the scale" (McGaw, 1997, p.94).

The NSW Government's acceptance of McGaw's hypothesis has increased pressure to move away from 'norm-referenced' assessment towards 'standards-based' approaches. This approach is not new to New South Wales as it draws on assessment and reporting procedures that have been practised in the *Basic Skills Testing* program in New South Wales for almost a decade. What is different in New South Wales is the use of such techniques with assessment information arising from conventional examinations – essays and short answer and assessment of major works – as well as multiple-choice questions.

The New South Wales Board of Studies (1999, p.2) has followed McGaw's conceptualisation and has defined standards in terms of syllabus standards and performance standards. The Board defined syllabus standards as "the knowledge, skills and understanding expected to be learned by students as a result of studying a course" and performance standards as "the levels of achievement of the knowledge, skills and understanding."

Notwithstanding this distinction, the item response theory techniques, which are used to develop the performance standards for the Higher School Certificate standards framework, have precedents in the assessment practices of the National Board for Professional Teaching Standards in the United States. Item response theory is used to ensure that teachers accredited by the National Board demonstrate the required levels of performance (National Board for Professional Teaching Standards, 1996a).

### Summary

The development of curriculum and assessments standards for schools provides a further context for consideration of professional teaching standards. As noted previously, although there is a subtle attractiveness to the simplicity of competency-based approaches to defining professional standards for teachers, there are concerns that such standards cannot reflect adequately the knowledge, skills, attitudes and values that are the hallmarks of good teachers and teaching.

Similar challenges confronted the developers of curriculum standards. The task was to ensure that curriculum standards adequately captured the richness of learning outcomes expected of school students. Teacher standards must articulate clearly what is expected of teachers and reflect appropriately, stages of professional growth. The statement of standards must be manageable and have meaning in the contexts in which they will be used.

Initial attempts to develop curriculum standards for school students were beset by concerns about their purpose, relevance and practicality. Therefore, any attempt to develop professional standards for teachers must first attend to the issues of purpose and form.

As with the development of curriculum standards, the process of developing professional teaching standards needs to be incremental with numerous opportunities for comment, and *trailing* along the way. Developments in assessment for school students should also have relevance to how quality in teaching is assessed and to how benchmark standards for teachers are set and by whom. Such assessment must be authentic and objective, and provide opportunities for teachers to demonstrate professional growth.

### **COMPETENCIES AS A CONCEPTUAL FRAMEWORK FOR PROFESSIONAL TEACHING STANDARDS**

Over the past fifteen years competencies have been promoted in Australia and elsewhere as a means of setting out broad parameters for education and training and for defining the work of occupations and professions (Norris, 1991). Collins (1993, p.3) observed, although competencies were the “focal concept in the world of education and training in Australia” in the early 1990s, that the concept is not new. Behaviourist educational psychologists explored the concept in the 1960s “because ‘competent’ is a descriptor, an adjective, which [can be] assessed through overt behaviour” (Collins, 1993, p.3). Norris (1991, p.331) reflected that

The concept of competence has been associated with a drive towards more practicality in education and training placing a greater emphasis on the assessment of performance rather than knowledge. A focus on competence is assumed to provide for occupational relevance and a hardheaded focus on outcomes and products. The clarity of specification, judgement and measurement in competency-based training indicates an aura of technical precision.

The current interest in Australia in competencies emerged from “attempts to solve particular economic, industrial relations and labour market problems” (Preston & Walker, 1993, p.116). From an ideological perspective, competencies were seen as a means of achieving ‘efficiency,’ ‘effectiveness’ and ‘relevance’ (Jackson, 1993) although their real import in this agenda was to establish a system for “administering and managing the delivery of instruction, in which the relevance to needs of industry is made accountable in organisational terms” (p.156). In addition, the competence paradigm was seen as providing a “unifying principle integrating the various sectors of education and training, as well as professional recognition and award restructuring” (Thompson, 1999, p.41).

Structures established in Australia during the late 1980s to implement competency-based training reforms included:

- the National Training Board (NTB) ;
- the National Office of Overseas Skills Recognition (NOOSR) ;
- the delineation of areas of responsibility between the NTB and NOOSR for the development of competency standards for the professions and higher education;
- the proclamation by the Commonwealth Government of a Mutual Recognition Bill; and
- the decision of a Special Premiers’ Conference to develop by the end of 1992 competency-based standards for all occupations and professions (Burrow, 1993).

The ramifications of this competency-based definition of professionalism were widespread. Collins (1993) noted the possibility of a direct alignment between any listing of competencies for teachers and university programs of preparation.

There is a range of competency models. Two schemas categorising models of competence are evident in the literature. The first, more apparent in papers from Britain, refers to ‘behaviourist,’ ‘generic,’ and ‘cognitive’ models of competence (Eraut, 1994; Norris, 1991). The second schema, detailed in Australian sourced articles describes ‘behaviourist,’ and ‘integrated’ or ‘holistic’ models of competence (Preston & Walker, 1993; Thompson, 1999). The differences are a consequence primarily from their diverse context of application and genesis. A further difference between three of the models, according to Kennedy and Preston (1995) is

in their orientations to tasks and attributes. They noted that behaviourist conceptions were concerned with discrete tasks, generic approaches were concerned with tasks and attributes, but considered them separately, while integrated or holistic approaches treated tasks and attributes together.

### **The behaviourist model of competence**

The behaviourist model of competence has been widely adopted within the vocational education and training sector as competency-based training (CBT). Collins (1993, p.4) commented that a key strategy of the initial competency-based reforms in Australia, the Australian Standards Framework was “based upon behaviourist assumptions” and was implicitly a “skills collection model,” which promoted the view that learning could be broken up into discrete ‘bits’ and learned through a sequence of ‘steps.’ The process for determining the bits and steps, or competencies, fundamental to a behaviourist approach required two stages: ‘job analysis’ followed by ‘skills analysis’ (Eraut, 1994). Collins observed, although breaking particular employment tasks down to components and steps made “some sense in relation to learning a set of concrete skills related to handling materials” (p.4), it was less relevant to school education and, in particular, to defining the work of teachers. Nonetheless, the competency-based training (CBT) agenda in Australia was founded on a behaviourist competency model.

The following comment indicates a significant level of dissatisfaction with early progress on the development of competency-based standards in Australia.

The approach, however, has been ad hoc. There was not first a thorough investigation of various different competency approaches and other alternatives which might help solve the identified problems. Rather the competency movement evolved quickly in a context of practical urgency, with little opportunity for reflection. Thus the behaviourist approach, with its apparent simplicity, intelligibility, potential for comprehensive application and its prevalence in vocational education and training around the world, became the basic model.

(Preston & Walker, 1993, p.116)

Issues unresolved at the time included whether competence referred to achievements or abilities, the specificity or generality of the abilities of individuals, the distinction between competence and performance, the capacity of the concept of competence to capture and represent expertise, the transferability of knowledge and skills across domains, and the tension between the dominant mastery learning paradigm of competency-based education compared

to 'guided discovery' models, common in education, as opposed, to the training (Stanley, 1993).

An attempt by the National Training Board (1992) to eliminate uncertainty about standards by precisely specifying competence was interpreted by Thompson (1999) as an attempt to overcome the need for judgement. He remarked (p.45) "Louden (1993) sees this 'framework of precision' as a fatal weakness because it cannot be applied to phenomena, like teaching, which are not precise."

In his review of early attempts to articulate competencies for beginning teachers setting out behaviours, that is the knowledge and skills, expected of teachers, Thompson (1999, p.35) commented that summative lists of competencies arise from 'the teacher-effects research literature' which takes a 'traditional view of "good teaching" ... grounded in the process product, generic competency aspects that emphasised teachers performance of discrete instructional and managerial skills" (Ralph, 1994). He further commented that such lists are underpinned by "several often unquestioned, taken for granted assumptions."

A primary concern of the behaviourist approach voiced by Deer (1993, p.138) was that "teaching is a holistic activity and the breaking down of the areas of competence into a checklist will not reflect the complexity of the profession." This complexity of describing teaching through a behaviourist model is obvious from the following quote. "The matrix of aptitudes X learning types X content domains X instructional designs X situations X populations must be portioned into regions within which common descriptions and common principles apply" (Snow & Swanson, 1992, p.590).

The practicality and validity of the approach to assess behaviourist competencies are also of concern. Eraut (1994, p.172) cites Elam's early but still relevant criticism. "The overriding problem before which others pale into insignificance is the adequacy of measurements and procedures" (Elam, 1972, p.21). Pointedly, many current approaches to assessing teacher competence have not progressed beyond the use of checklists, particularly, in relation to assessment of student and beginning teacher, or the appraisal of teaching competence. This extract from Thompson (1999, p.45) captured the essence of the debate.

At the heart of the tension between the ... differing stances on competence is the dichotomy between two disparate views of competence. The former implies that the essence of teacher competence is a set of separate technical skills expressed in context free behavioural terms. The latter is consistent with a 'holistic' view of competence that emphasises the importance of context, subject content and personal experience in determining what counts as effective teaching for individual



teachers working with particular groups of students (Louden, 1993). This clash of viewpoints has been the cornerstone of the debate on competence for a long time.

Collins (1993, p.4) posed the challenge for educators arising from the behaviourist competence model clearly

whether from such a starting point, we can invent ways of envisaging, and then defining competence, which is valued for more holistic, less material, more human relational, more open-ended human performance capabilities.

The response of educators to this challenge is outlined in the discussion of 'integrated' models of competence.

### **The generic model of competence**

Generic models of competence differ significantly from behaviourist models.

Whereas CBT is designed to ensure all workers are significantly competent to do what is required of them, generic competencies are concerned with what enables them to do it; and this sometimes includes what are sometimes called 'personal qualities.'

(Eraut, 1994, p.172)

Further the

generic competency approach favours empirical investigation to establish the competencies which discriminate between average and expert performers as opposed to the theoretical or logical requirements of a particular occupational function.

(Norris, 1991, p.332)

Generic competencies focusing on personal attributes have application in management theory, especially in the selection of senior management executives. A pioneer in the identification of management competencies has been McClelland and his associated company, McBer. They developed lists of eight to fifteen competencies for managers, which were claimed to distinguish average and superior performance. A five stage process resulting in a "list of characteristics which discriminate, arranged into clusters" is used to determine the "competency model" (Eraut, 1994, p.174). The procedure can be summarised as follows:

(i) identify the most effective performers in the job; (ii) study what these people

actually do that distinguishes them from individuals whose performance is less satisfactory, and (iii) identify the specific skills, abilities and characteristics which are responsible for this difference

(Norris, 1991, p.333)

The process is designed to identify competencies, which have validity across a range of management situations and organisations. Competencies specific to particular contexts – products or services – are eliminated from the model. It is interesting to note that the consultants engaged by the Department for Education and Employment (DfEE) in England to distinguish between average and expert teachers were Hay McBer.

There are several criticisms of the generic competencies concept. One being the ‘circularity’ of the validation process, which Eraut (1994, p.174) noted “is inevitable whenever normative judgements are involved.” Another being that the approach assumes a single type of good manager, whereas Schroder, (1989) for example, found good managers exhibited only three high performance competencies as strengths.

Notwithstanding these criticisms, Thompson (1999) pointed to further concerns. The first, raised by Sandberg (1994), relates to the difficulty of transforming work activities into attributes. The second, broached by Norris (1991), was whether “the universality of generic constructs of competence is a strength or a weakness” (p.333). Thompson commented that both Sandberg and Norris were convinced that the assumed universality of generic competencies posed serious problems for the assessment of competence. Further, he cited Hager and Beckett (1995, p.15) on this point

different contexts have different cultures – what counts as skill, even as a generic skill (like ‘oral communication’) in one context (say, a tutorial) may appear as a deficiency in another (say, a workplace team meeting).

Thompson concluded that

As far as teaching is concerned attempting to identify teaching competence in generic terms is problematic since teaching in different contexts requires different competencies.

(Thompson, 1999, p.53)

### **The integrated model of competence**

The 'integrated' model of competence incorporates perspectives about tasks (what is done on the job), attributes (what is brought to the doing of the job) and the context (where the job is done) (Hager & Becket, 1995). Thompson (1999, p.53) provided a summary of Hager's perspectives of the integrated model.

Hager (1992) believes this view is very different from the 'natural' way of conceiving competence as a series of tasks. Likewise it does not have the limitations of a view of competence consisting of attributes or generic skills. The integrated or holistic view of competence is a richer conception compared to an atomistic approach whether the atoms be tasks or attributes

The essence of the integrated model of competence lies in its relational character (Hager & Becket, 1995). Preston and Kennedy (1995, p.33) described this aspect in the following terms:

*Competency is the relation between an individual's personal attributes (such as their knowledge, physical and social skills, values and dispositions), the performance of tasks (which can be very broadly defined and can involve professional judgement), in the context of practice (which can be complex and unpredictable). Competencies are the combination of personal attributes which enable competent performance in particular contexts. There are thus important distinctions between competencies, the attributes which constitute them, and performance.*

The integrated model differs also from behaviourist and generic conceptions in the assessment of performance. The integrated view of competence, requires assessment, rather than being based on direct observation, to be based on a range of evidence or samples of performances (Hager & Becket, 1995; Preston & Kennedy, 1995). The model has significant currency within the education sector. Preston and Kennedy (1995, p.32) noted that the *National Competency Framework for Beginning Teachers* (National Project on the Quality of Teaching and Learning, 1996) "is generally (but not fully) consistent with the 'integrated' (non-behaviourist) approach to competency Standards."

### **Cognitive constructs of competence**

Behaviourist, and generic models of competence attempt to "validate competence in terms of performance" (Eraut, 1994, p.177). This is true also to some extent of the integrated model. Research in cognitive psychology has frequently sought, however, to distinguish competence from performance. According to Eraut (1994) such distinctions are evident in Chomsky's (1968)

discussion of 'linguistic competence' and 'linguistic performance' and similar distinctions made in child development by Flavell and Wohlwill (1969) and in cross-cultural psychology by Scribner and Cole (1981, cited in Eraut (1994), p.178)).

The distinction between competence and performance is summarised by Messick (1984).

Competence refers to what a person knows and can do under ideal circumstances, whereas performance refers to what is actually done under existing circumstances. Competence embraces the structure of knowledge and abilities, whereas performance subsumes as well the processes for accessing and utilising these structures and a host of affective, motivational, attentional and stylistic factors that influence the ultimate response. Thus a student's competence might not be validly revealed in either classroom performance or test performance because of personal or circumstantial factors that affect behaviour.

Norris (1991, p.333) observed, the cognitive model of competence is concerned with "potential whereas performance is about situated behaviour." Wood and Power (1987, p.414) defined competence as distinct from competencies and resting on "an integrated deep structure (understanding) and on the general ability to co-ordinate appropriate internal cognitive, affective and other resources necessary for successful adaptation." They further contended that a successful conceptualisation of competence would show "how specific competencies are integrated at a higher level and would also accommodate changing patterns of salience among those skills and abilities at different ages and in different contexts" (pp.414-415). Norris (1991, p.334) concluded, however, from his reflections on the cognitive construct

If competence is thought of as a deep structure of general ability then it is difficult to see how this abstract construct can be related to practice. It is also close to offering a general theory of intelligence in terms of cognitive potential.

### **Summary**

Notions of competence have had significant currency in education and training over the past two decades. Despite effort to develop the concept internationally, there is still a diverse range of views about the nature of competence, how it can be ascribed, and how it can be acknowledged. The most widespread model, the behaviourist or CBT construct has a beguiling simplicity. Competence, seen simply, is the ability to perform a particular task. Yet it is this simplicity that has seen it rejected by many academics and practitioners as being an insufficient construct for representing the complexity of the teachers' role.

By definition, generic constructs are intended to distinguish between average and excellent workers. Although, they have application in management, there are questions about the generic competence construct that has been applied to the identification of effective teachers in England.

The integrated model of competence attempts to present a holistic view of competence, integrating perspectives on the requirements of the task, the attributes brought to the task and the context in which the task is performed. The model appears to have support amongst teacher educators and the teaching profession.

The cognitive model presents a different theoretical perspective separating the notion of competence from that of performance. The model is of interest to the extent that significant progress has been made in developing theoretical perspectives in the cognitive sciences, but the complexity of the field makes the possible articulation of a workable model unlikely.

Common to all models is uncertainty about the validity of assessment practices. While much effort has been expended in developing statements of competence for teachers, less attention has been given to the development of effective and valid assessment models (Thompson, 1999).

## **CONCLUSIONS**

Professional teaching standards are a relatively recent artefact. Five contexts for their development were examined in this Chapter. A number of themes are consistent across each of the contexts considered.

The first theme is that standards are integral to quality improvement mechanisms characteristic of prevailing economic ideologies. Quality improvement is an accepted mantra in business and industry, amongst professions and in government policy initiatives. As education has been required increasingly to serve instrumental rather than humanist ends, there have been increased demands from Government for quality improvements. Similarly, the social contract that professions make with their communities requires that professionals seek continuously to evaluate and improve the quality of their practice.

The second theme is that there is limited consensus on how standards should be conceptualised and framed. The term 'standards' has a number of meanings and conceptions. In the contexts considered, professional teaching standards have been proposed as a means

of addressing a range of quality improvement agendas, and consequently competing purposes. Despite the agreement amongst stakeholders – teachers, employers of teachers, governments, and communities – on the need for standards, there is a range of professional, educational, and political priorities. In addition, the concepts of ‘competence’ described provide a range of models for the development of standards.

Although there is much to build on in the development of professional standards for teachers there is a need for significant conceptual development to be undertaken to clarify the purpose and form of professional standards and, consequently, benchmarks for outlining accepted levels of performance for teachers. Unless broad general agreement is reached amongst teachers and others charged with their implementation on the purpose and form of professional standards, their development will have little impact on the profession.

## **CHAPTER 2**

# **STANDARDS FOR TEACHERS: NATIONAL AND INTERNATIONAL DEVELOPMENTS**

We humans seem to be extremely good at generating ideas, theories and explanations that have the ring of plausibility. We may be deficient, however, in evaluating and testing our ideas once formed.

(Thomas Gilovich cited in Stedman, 1996, p.1)

### **INTRODUCTION**

As noted in the previous Chapter, standards, setting out expectations of teacher behaviours, are emerging increasingly as key strategies for quality improvement in the school education sector. Developing professional teaching standards, which will have a direct impact on the quality of students' educational outcomes, is no simple task. Much of the knowledge about how to teach is tacit knowledge, that is, knowledge that "has not been documented and made explicit by the one who uses and controls it. ... Teachers often have their own ideas about how to teach, and they seldom write them down in a form that is accessible to others" (OECD, 2000, pp.18-19).

The previous discussion considered how standards are conceptualised differently in a range of contexts including in the articulation of professional standards. This chapter extends this discussion by considering how teaching standards are conceived as a result of their different purposes as well as differences in the strategies adopted by bodies responsible for their development.

The first section of this chapter outlines some of those differences. The subsequent sections provide case studies of approaches to the development and use of professional standards in the United States, England and Wales, the Canadian province of Ontario, and in Australia. Although there are other examples of professional standards developments, these particular examples provide insight into a mix of profession-led and government-mandated developments.

The discussion and description of these standards developments leads to three further sections of this chapter that are central to the overall thesis. The first is the enunciation of definitions of terms that are used in the chapters to follow. The second is the articulation of a set of theoretical standards which provide the basis for the research that is to follow. The third is the identification of research themes to be explored and the research questions to be answered by this thesis.

### **DIFFERENCES IN THE CONCEPTION OF STANDARDS**

As noted in Chapter 1, professional teaching standards have been developed in response to a range of professional and government concerns. Governments have been active supporters of professional teaching standards either by supporting profession-led developments or by assuming full responsibility for their development and application. In many cases, where there are several tiers of government (for example, state and national), there are competing standards developments at each level of government. Consequently, there is a high level of contestability around the purpose and nature of professional teaching standards, which is not found in other professions.

Standards developments differ in a number of ways. Six areas of difference were identified by Brock and Mowbray (1998) from a detailed analysis of standards developments in Australia and elsewhere. These differences include:

1. The purpose for developing the standard and the teacher population to whom the standards can apply
2. The frame of reference for the standard development
3. The roles of government and the profession in the development of standards
4. The degree of specificity in articulating standards
5. The elements of competence
6. How the standards are assessed.

(Brock & Mowbray, 1998, p.51)

In relation to the purpose of professional standards, Brock and Mowbray reported an extensive range of standards developments with a variety of purposes, including standards to support:

- recruitment of students into programs of teacher preparation
- the preparation of student teachers



- certification of beginning teachers on completion of probationary requirements
- on-going licensing or registration requirements for practising teachers
- teacher appraisal or accountability measures applying to experienced teachers
- accreditation of accomplished teachers
- selection and appraisal of school executives.

The purpose and frame of reference of the standards are generally a reflection of the needs of the developing authority.

The second and third areas of difference relate to the relative roles of governments and the profession, and the specificity of the standards. As teaching has not generally achieved the status of a self-regulating profession, more often than not, governments or employers of teachers have taken the lead in the development of standards. In these circumstances, standards are commonly framed to inform minimal requirements of teachers. Such standards represent a 'hurdle' or 'bar,' especially in regard to minimal licensing requirements. However, increasingly, there are examples where the profession has accepted a high degree of responsibility for the development of the standards, and in these circumstances, standards have been framed as optimal standards. These set out expectations of accomplished teachers, and provide aspirational or developmental goals.

In relation to the three remaining areas of difference identified by Brock and Mowbray they noted:

4. the degree of specificity. Although some of the standards were generic in nature, applying to all teachers as in the case of licensing requirements, others were specific to different categories of teachers. For example, the standards developed by the National Board for Professional Teaching Standards have two dimensions: subject content and student age range, so that a teacher could be accredited as an accomplished teacher of *Early Adolescent Mathematics*, or as a teacher of *Adolescent and Young Adulthood English Arts* (National Board for Professional Teaching Standards, 1996).
5. variation in the elements of competence embodied in different sets of standards. As standards represent mediated socio-cultural constructs, (Sykes & Plastrik, 1993) there was a high level of variation in the elements of competence amongst the various standards identified.
6. the mode and rigour of teachers' assessment. In many cases, the performance benchmarks for teaching rely on implicit assessment through course expectations, employment guidelines or supervisor's professional judgement. Less common are explicit and external assessments of teacher performance.

(Brock & Mowbray, 1998, p.51)

Louden (2000) also compared standards developments. He identified two phases in the evolution of professional teaching standards in Australia. He noted a first wave of standards, prior to 1999, which was dominated by:

the large State government school systems, and influenced by competency-based conceptions of standards ... [He] concluded that these standards are characterised by long lists of duties, opaque language, generic skills, decontextualised performances, an expanded range of duties, and weak assessments

(Louden, 2000, p.1)

Louden proposed a set of criteria to guide development of what he saw as a “second wave” of standards developments in Australia led by professional associations. These new standards should be “brief, transparent, specialised, contextualised, focused on teaching and learning, and matched by strong assessment” (Louden, 2000, p.1). The distinctions in the waves of development identified by Loudon (2000) present a useful guide for discussion and evaluation of the standards developments that follow. Thus, the terms ‘immature’ and ‘mature’ have been advanced in this study to represent the essential differences between the nature of the two waves of development as well as their temporal differences.

There is an increasing volume of literature describing teaching standards developments, both nationally and internationally. As noted above, a number of these were summarised in Brock and Mowbray (1998). While extensive work has occurred in standards development in anglophile countries, it should be noted that teaching standards have been also developed in other countries, e.g., Mexico (Ramsey, 1999) and Thailand (Khurusapha The Teachers Council of Thailand, 1997). The following sections survey a range of international and national teaching standards developments. The international examples were chosen because they represent a variety of approaches and contexts against which developments in Australia can be compared.

## **THE UNITED STATES**

The discussion in Chapter 1 drew attention to tensions and competing priorities evident in the range of state and national, government and profession-developed learning or curriculum standards in the United States. The discussion that follows discusses and comments on national and state professional teaching standards initiatives in the United States.

### **National developments**

At the national level in the United States, there are standards for school leaders, standards for accomplished teachers, standards for beginning teachers, and standards for initial teacher education. The standards for accomplished teachers (National Board for Professional Teaching Standards, 1996b) and for initial teacher education (National Council for the Accreditation of Teacher Education, 1997) were professional initiatives. Standards for school leaders (Council of Chief State School Officers: Interstate School Leaders Consortium, 1996) and beginning teachers (Interstate New Teacher Assessment and Support Consortium, 1992) were developed as national cooperative initiatives of the Council of Chief State School Officers. They represent employer or government led developments.

The initiatives of the National Board for Professional Teaching Standards (NBPTS) are perhaps the best known and most studied teaching standards developments on the international scene (Darling-Hammond, 1994, 1998a; Gitomer, 1997; Ingvarson, 1997, 1998, 1999a, 1999b; National Board for Professional Teaching Standards, 1996a; Shapiro, 1995; Sparkes, 1994).

As noted previously, the Board was established in 1987 with a mission “to establish high and rigorous standards for what accomplished teachers should know and be able to do, and to operate a voluntary national system to assess and certify teachers who meet these standards” (Shapiro, 1995, p.4). The Board is highly focused on the task of developing teaching standards and assessing teachers against these standards. “That’s about all it does – it develops teaching standards and provides an independent structure for assessing teacher performance” (Ingvarson, 1998, p.11). Brock and Mowbray (1998, p.17) noted that “National Board accreditation is available to teachers who have been licensed by their state authority and have been teaching for a minimum of three years in a school recognised and approved to operate in that state.”

Darling-Hammond (1986, p.76) believed that the establishment of the national board was “a stroke of genius.” Darling-Hammond claimed that a National Board “would professionally define the body of knowledge upon which good teaching rests” (p.76). She argued, that current teacher licensure tests:

are not professionally controlled; nor do they adequately represent what a teacher needs to know about teaching and learning. That knowledge is complex, and requires judgement in applying general principles to unique and specific problems of practice ... a real test of professional knowledge could have a profound influence on teacher preparation, both before and during a teacher’s career.

(Darling-Hammond, 1986, p.67)

Although developed by different agencies in the United States, all other national developments are designed to be consistent with the National Board's standards. Indeed, the Interstate New Teacher Assessment and Support Consortium (INTASC) (1992) considered this to be an important feature of its standards for beginning teachers.

The task force's goal is to create model standards or "Board-compatible" standards for a common core of teaching knowledge and skills that should be acquired by all new teachers.

(Interstate New Teacher Assessment and Support Consortium, 1992, p.3)

Similarly, the National Council for the Accreditation of Teacher Education (2000, p.7) *Program Standards for Elementary Teacher Preparation* were designed to be "compatible with that of the NBPTS and also with INTASC." The Council did:

not want to face the prospects of differing or conflicting standards as they attempted to prepare their teacher education graduates for state licensure on the one hand and their institutions for NCATE accreditation on the other. ... For these reasons, the Committee decided to build its work around the INTASC framework as detailed in its 1992 publication.

(National Council for the Accreditation of Teacher Education, 2000, p.7)

Although the range of national developments in the United States represents an interesting case study, the developments have been slow to take effect because the constitutional responsibility for education is vested within States.

### **State-based developments**

Despite efforts to ensure a high level of professional support for the National Board's professional standards (Hattie, 1996), a number of States in the United States has chosen to initiate their own teaching standards developments, e.g., *The Connecticut Competency Instrument*, (Connecticut State Department of Education, 1999) *Delaware Professional Teaching Standards*, (Delaware Department of Education, 1998) and *Framework for Evaluation and Professional Growth* (Tennessee State Board of Education, 1997). There are a number of reasons for these developments, including different purposes, for example, the need for criteria to support licensing rather than teachers' developmental needs.

Even where States supported the National Board's approach to standards, they "elected to develop their own statements of standards to reflect their particular context and identity.

These state standards are generally related in some ways to the National standards and serve a variety of purposes” (Best, 2000, p.3).

The tendency for States to exercise their constitutional responsibility for education has been evident also in the range of standards applied to beginning teachers. Although a majority of States accepted the INTASC standards as the basis for initial teacher licensure or certification, applicants investigating the possibility of teaching in one or more States are faced with a confusing mix of course requirements, standards, and performance-based skills testing. For example, the requirements for teacher licensure in New Jersey are as follows:

1. Bachelors degree from an accredited college or university
2. Passing scores on Praxis II NTE Programs specialty areas test(s) for secondary teaching and in the General Knowledge test of the Core Battery for elementary teachers.
3. Completion of a major in liberal arts or sciences for elementary education. Completion of a major in the subject teaching field for an endorsement in the subject teaching field. For additional endorsements, completion of at least 30 semester hours in a coherent major in the subject teaching field.
4. Successful completion of one of the following:
  - The provisional teacher program, or
  - A state approved college teacher preparation program and one year of full time mentored teaching under a New Jersey provisional license, or
  - A state approved college teacher preparation program and one year of teaching under a valid state license.

(New Jersey Department of Education, Unknown)

These standards reflect inputs into teachers’ preparation. They assume that teachers who have met these input criteria are able to meet the community’s expectations of performance. The following discussion investigates some of the underlying tensions that are both causes of and consequences of the range of national and state-based standards developments.

### **Competing national and state agendas**

Whereas, the primary aim of the National Board for Professional Teaching Standards work was to professionalise teaching, Tom (2000, p.20) commented that the agenda of States in the United States has been focused firmly on “teaching quality measured in terms of a teacher’s ability to produce student results on state mandated K-12 assessment.” He noted, “simply put, the logic of state accountability plays to the entrenched American idea that the only thing that really counts is results – the proof is in the pudding, not the recipe” (p.21). Leighton and Sykes (1992, p.30) commented as early as 1992 that teacher assessments were being

developed “to tighten the connections between States’ explicit educational goals and teachers’ demonstrated proficiency in helping them achieve them.”

Nonetheless, Tom (2000) reported “Darling-Hammond’s high expectations for the National Board have in part been realised” (p.76). Kelly, former President of the NBPTS, advanced the following comment on the Board’s initiatives. “Strong support emerged for the resulting system. Teachers trust it, state officials like it. Teachers and local school boards support it” (Kelly, 2000b, p.15). Ingvarson (1999a, p.68) commented in a paper supporting the NBPTS that “a certification system [such as the NBPTS] is also a powerful instrument for empowering teaching as a profession and improving the quality of teaching.”

In this respect, Kelly (2000a, p.17) noted that the system of National Board Certification “is already having widespread impact on many in education.” The three reasons he proffered for this were: “the standards are widely seen as having high fidelity to actual teaching and are not focused on extraneous or trivial aspects of teaching”; “the standards are high”; and “the absolute central role teachers play in every aspect of the work of the National Board” (Kelly, 2000a, p.17).

However, Tom (2000, p.19) reported “not all is going well with the National Board process.”

Three problems with national Board certification – the slow development of certificate areas, the small number of certified teachers, and the high cost of the assessment process to teachers – are all problems which grew out of the National Board processes, or might reasonably have been anticipated to follow from that process. A fourth problem, however, is something which Darling-Hammond and other supporters of the National Board could not have foreseen in the mid-1980s: the accountability movement.

(Tom, 2000, pp.19-20)

The results-based focus of the State accountability movement raised an obvious question for the National Board: “do the students of board-certified teachers do better on State assessments than do students of other teachers” (Tom, 2000, p.20). The implications of this question are that:

state legislators ... are reluctant to provide financial support for the National Board registration fee or to increase state funding for teacher salaries unless Board-certified teachers are distinctly better than other teachers, i.e., produce more student learning on state assessments.

(Tom, 2000, p.20)

The differing assumptions about teacher quality, that underpin state accountability and NBPTS certification, have the potential to undermine the National Board's work.

National Board proponents presume that teachers who are knowledgeable in their subject and have good professional judgement will be effective, while state accountability proponents believe that the best indicator of teaching effectiveness is the ability to achieve results with students. Of these two views of teaching quality, the logic of state accountability is simpler to understand and has fewer elements, and as a result of this results-oriented view seems to be winning the battle over how teaching quality is to be judged in the United States.

(Tom, 2000, p.21)

Despite Tom's concerns that support for the National Board's work may diminish in the future, a number of States are explicitly encouraging teachers to apply for Board certification, e.g., Arkansas, (Arkansas Department of Education, 1999) and Connecticut (State of Connecticut Department of Education, 1999). The evidence needed to strengthen support for the Board of a direct link between teacher quality and student learning outcomes is becoming available.

From her study of the relationship between State policy on teacher quality and student achievement Darling-Hammond (2000b, p.12) commented that those States:

that repeatedly lead the nation in student achievements in mathematics and reading have among the most highly qualified teachers in the country and have made longstanding investments in the quality of teaching.

She noted further that:

reform strategies during the 1980s that did not include substantial efforts to improve the nature and quality of classroom work have shown little success in raising student achievement, especially if the reforms relied primarily on student testing rather than investments in teaching.

(p.19)

This suggests that policies settings that value and develop teacher quality appear to support student achievement. Conversely, policies that attempt to improve the outcomes of schooling by focusing solely on accountability through public testing are insufficient for achieving the goal of improved student outcomes. That, Darling-Hammond's arguments were couched in terms of student's results added significantly to their impact. A recent study by Bond, Hattie, Yaegar, and Smith (2000) declared that National Board Certification is "identifying and certifying teachers who are producing students who differ in profound ways from those taught by [non-Board Certified] teachers" (National Board from Professional Teaching Standards, 2000, p.2).

Other opposition to the National Board has arisen from deeply held philosophical positions. For example, Ballou and Podgursky (2000, p.7) argued that the agendas being pursued through the National Board “serve private rather than public interests.” They base this criticism on the fact that the National Council for the Accreditation of Teacher Education and the National Board for Professional Teaching Standards are perceived as professional rather than government instrumentalities.

As more teachers qualify for National Board certification, however, evidence that certification recognises superior teaching ability is becoming available. Ramsey (2000, p.131) commented that the debate in the United States will continue as long as some remain unconvinced that teacher preparation and development are essential to quality teaching and that this deeply affects student learning.

### **The National Board Standards**

The teaching standards articulated by the National Board of Professional Teaching Standards are “designed to communicate a vision of teaching as a collegial enterprise involving complex decision making” (Shapiro, 1995, p.3). Brock and Mowbray (1998, pp.18-19) noted that the National Board’s standards differ from many other teaching standards developments, in that they are subject and school stage specific rather than generic.

To date, sixteen separate teaching standards have been developed setting out expectations of accomplished teachers at specific stages of schooling and for specific disciplines, for example, *Early Childhood Generalist* (ages 3-8), *Early Adolescence Science* (ages 11–15) and *Adolescence through Young Adulthood English Arts* (ages 14-18+). At the core of each set of standards is a set of five propositions outlined in Table 2.1 below.

The initiatives have a high degree of professional ownership and support as they are seen to be outside of government. Unlike many other teaching standards, they require performance-based assessment of teachers. The processes of developing the individual standards are well documented by Hattie (1996). He lists six criteria for the establishment of standards in his description of the processes used to develop the *Middle Childhood Generalist Standards*:

1. The integrity of the certification process requires that the certifying board be administratively independent of any professional organisation.
2. The certifying board must be solely responsible for constructing the standards.
3. The certifying board must be composed primarily of those who are already accomplished teachers.



**Table 2.1: The Five Propositions of Accomplished Teaching**


---

The National Board for Professional Teaching Standards seeks to identify and recognize teachers who effectively enhance student learning and demonstrate the high level of knowledge, skills, abilities and commitments reflected in the following five core propositions.

**1. Teachers are committed to students and their learning.**

Accomplished teachers are dedicated to making knowledge accessible to all students. They act on the belief that all students can learn. They treat students equitably, recognizing the individual differences that distinguish one student from another and taking account of these differences in their practice. They adjust their practice based on observation and knowledge of their students' interests, abilities, skills, knowledge, family circumstances and peer relationships.

Accomplished teachers understand how students develop and learn. They incorporate the prevailing theories of cognition and intelligence in their practice. They are aware of the influence of context and culture on behaviour. They develop students' cognitive capacity and their respect for learning. Equally important, they foster students' self-esteem, motivation, character, civic responsibility and their respect for individual, cultural, religious and racial differences.

**2. Teachers know the subjects they teach and how to teach those subjects to students**

Accomplished teachers have a rich understanding of the subject(s) they teach and appreciate how knowledge in their subject is created, organized, linked to other disciplines and applied to real-world settings. While faithfully representing the collective wisdom of our culture and upholding the value of disciplinary knowledge, they also develop the critical and analytical capacities of their students.

Accomplished teachers command specialized knowledge of how to convey and reveal subject matter to students. They are aware of the preconceptions and background knowledge that students typically bring to each subject and of strategies and instructional materials that can be of assistance. They understand where difficulties are likely to arise and modify their practice accordingly. Their instructional repertoire allows them to create multiple paths to the subjects they teach, and they are adept at teaching students how to pose and solve their own problems.

**3. Teachers are responsible for managing and monitoring student learning.**

Accomplished teachers create, enrich, maintain and alter instructional settings to capture and sustain the interest of their students and to make the most effective use of time. They also are adept at engaging students and adults to assist their teaching and at enlisting their colleagues' knowledge and expertise to complement their own.

Accomplished teachers command a range of generic instructional techniques, know when each is appropriate and can implement them as needed. They are as aware of ineffectual or damaging practice as they are devoted to elegant practice.

They know how to engage groups of students to ensure a disciplined learning environment, and how to organize instruction to allow the schools' goals for students to be met. They are adept at setting norms for social interaction among students and between students and teachers. They understand how to motivate students to learn and how to maintain their interest even in the face of temporary failure.

Accomplished teachers can assess the progress of individual students as well as that of the class as a whole. They employ multiple methods for measuring student growth and understanding and can clearly explain student performance to parents.

**4. Teachers think systematically about their practice and learn from experience.**

Accomplished teachers are models of educated persons, exemplifying the virtues they seek to inspire in students—curiosity, tolerance, honesty, fairness, respect for diversity and appreciation of cultural differences—and the capacities that are prerequisites for intellectual growth: the ability to reason and take multiple perspectives to be creative and take risks, and to adopt an experimental and problem-solving orientation.

Accomplished teachers draw on their knowledge of human development, subject matter and instruction, and their understanding of their students to make principled judgements about sound practice. Their decisions are not only grounded in the literature, but also in their experience. They engage in lifelong learning which they seek to encourage in their students.

Striving to strengthen their teaching, accomplished teachers critically examine their practice, seek to expand their repertoire, deepen their knowledge, sharpen their judgement and adapt their teaching to new findings, ideas and theories.

**5. Teachers are members of learning communities**

Accomplished teachers contribute to the effectiveness of the school by working collaboratively with other professionals on instructional policy, curriculum development and staff development. They can evaluate school progress and the allocation of school resources in light of their understanding of state and local educational objectives. They are knowledgeable about specialized school and community resources that can be engaged for their students' benefit, and are skilled at employing such resources as needed.

Accomplished teachers find ways to work collaboratively and creatively with parents, engaging them productively in the work of the school.

---

4. The universe of competencies required for accomplished teachers must be clearly defined.
5. The process for establishing standards must be developed on a sound scientific basis:
  - 5a. Formal instructions delineating the roles and responsibilities in setting the standards and demarcating the boundaries of the universe of content must be provided to the Standards Committee.
  - 5b. The process of developing the Standards must be formally documented.
  - 5c. After the standards are formally approved. Standards Committee members must have confidence in the process.
6. The process must result in definitions of critical aspects of practice that are the distinguishing characteristics of accomplished teachers.
  - 6a. That the process followed must ensure that 'high standards are set that recognise the variety of contexts in which teachers practice and do not prescribe a single model'
  - 6b. The work of subject matter groups, the States, NCATE and others should inform the standard setting process.
  - 6c. There must be collaboration with others in NBPTS standards committees in related fields to develop compatible requirements.
  - 6d. The Standards Committee must serve as sounding board for the Assessment Development Laboratory (ADL) charged with developing the associated assessment, and assist the ADL in designing fair and trustworthy assessment processes.
  - 6e. A wide sampling of agreement with the Standards must be sought from major relevant professional groups regarding the appropriateness of the level of standards.
  - 6f. The Standards Committee must provide advice on the implementation of the certification process in its field.

(Hattie, 1996, pp.2-3)

The design of the standards emphasises several specific priorities. These include teachers' subject content knowledge and subject pedagogic knowledge (Shulman, 1986), and the teachers as a reflective practitioner (Schön, 1983, 1987). D. Hargreaves (2000) noted the appeal of this latter perspective, that is, the teacher as a reflective practitioner "legitimises the critical scrutiny, rather than transmission of, existing professional practice" (p.226). However, he identified the focus on this perspective as a foundation for initial preparation of teachers as weakness because "the trainee is being expected to become critical of professional practice before much of the basic knowledge and skill has been acquired" (D. Hargreaves, 2000, p.226).

### **Summary**

There has been considerable effort to identify and apply professional teaching standards in the United States. The greatest efforts have been directed at national developments through the National Board for Professional Teaching Standards and the National Council for the Accreditation of Teacher Education. States have been slow to adopt nationally developed standards, preferring to exercise their constitutional authority for education by developing standards unique to their own particular needs.

The standards for accomplished teachers developed by the National Board appear to be increasingly impacting on teaching in the United States and elsewhere. Nevertheless, the link between the expectations of teachers outlined in the standards and the capacity of teachers meeting those expectations to enhance the educational outcomes of young people has not been entirely self evident.

### **ENGLAND AND WALES**

As noted in Chapter 1, the focus of the quality improvement agenda in England and Wales moved in the early 1990s from an initial focus on the quality of the school curriculum to teacher quality. Responsibility for teacher quality has been vested in three agencies: the Teacher Training Agency (TTA); the Office for Standards in Education (OFSTED); and the General Council of Teaching (GTC). A description of the roles and responsibilities of each of these agencies follows.

#### **Quality initiatives**

The Teacher Training Agency was established by the Education Act 1994. It was established to “raise standards in schools by attracting able and committed people to teaching and by improving the quality of teacher training” (Teacher Training Agency, Date Unknown). The agency’s core aims are to:

- promote teaching as a profession and boost the recruitment and retention of high quality people;
- increase the proportion of initial teacher training (ITT) places allocated to high quality providers;
- raise the standard and quality of ITT; and

- support the Government and others in wider initiatives to raise standards of teaching by helping to ensure that teachers in their induction years receive the structured support they need; by contributing to improving the knowledge, understanding and skills of serving teachers; and by helping to secure teaching as an evidence and research-based profession.

(Teacher Training agency, Date unknown, p.1)

The TTA was given broad powers and “by 1995 [it] was assuming responsibility for an ever widening range of activities” (Furlong et al., 2000a, p.20). Initial Teacher Training (ITT) was its chief area of responsibility. The remit for the TTA emphasised two requirements. These were “the formal requirement for the TTA to promote SCITT [School-Centred Initial Teacher Training]” and a “requirement to link funding [of ITT] to quality” (Furlong et al., 2000a, p.20).

As an initial step, the TTA piloted the use of a *Career Entry Profile*, which, had it been implemented successfully, would have become a national curriculum of initial teacher education (Furlong, Barton, Miles, Whiting, & Whitty, 2000b). The TTA undertook also the development of National Standards for teachers. These were intended to:

- set out clear expectations for teachers at key points in the profession;
- help teachers at different points in the profession to plan and monitor their development, training and performance effectively, and to set clear, relevant objectives for improving their effectiveness;
- ensure that the focus at every point is on improving the achievement of pupils and the quality of their education;
- provide a basis for the professional recognition of teachers’ expertise; and
- help providers of professional development to plan and provide high quality, relevant training which meets the needs of individual teachers and headteachers, makes good use of their time and has the maximum benefit for pupils. (Teacher Training Agency, 1998)

In keeping with this brief the TTA has developed a range of standards including standards for:

The award of Qualified Teacher Status - QTS

Induction

Special Educational Needs Co-ordinators

SEN Specialist Teachers

Subject Leaders

(Teacher Training agency, Date unknown, p.1)

In addition, the British Government established the Office of Standards in Education (OFSTED) in September 1992 to monitor educational standards in schools. OFSTED is empowered to conduct regular inspections of schools, to report publicly on the progress of schools, and to provide independent advice to the Government. Its principle task is the management of an independent system of school inspection defined originally by the Education (Schools) Act 1992 (Furlong et al., 2000a).

In 1996 the Secretary of State for Education expanded OFSTED's responsibilities and required it to inspect the provision of primary and secondary initial teacher training courses. The criteria for the inspection of initial teacher training were expressed as standards. These were agreed jointly by OFSTED and the Teacher Training Agency.

A third body, the General Teaching Council (GTC) was established in September 2000 as an independent professional body for all teachers. The Council's aim is to provide a voice for the teaching profession, maintain and enhance the profession's high standards, and raise the public standing of teaching.

Information provided by the Government to teachers at the time of establishment of the Council indicated that it will "give teachers the opportunity to lead and shape change, working in partnership with the government, local education authorities, schools and others" (Department for Education and Employment, 1999). The consultation paper recommending the establishment of the Council suggested that it would:

- advise the Secretary of State and others on a wide range of issues, including:
  - the recruitment and supply of new teachers
  - initial training and induction
  - on-going professional development
  - medical fitness and professional conduct
  - teacher training and professional development
- have a legal right to be consulted on any future change in the standards required for entry to teaching
- keep a register of qualified teachers, and registration will be a requirement for practising as a teacher in a maintained school. Other fully qualified teachers will also be encouraged to register, so that the Council can represent the profession as a whole
- develop and consult on a Code of Professional Conduct and Practice expected of registered teachers

- have powers to remove individual teachers from the register if it finds them guilty of serious professional misconduct or incompetence.

Besides the development of professional standards, the reform of teacher education, and the inspection of schools and the provision of teacher education, the Government embarked on a further range of teacher quality improvement strategies. Primarily, to “reward good teaching better, recognising its vital role in raising standards” (Blair in Foreword to Secretary for State and Education, 1998). Blair further promoted the teacher quality improvement strategies as a further response to the critical “issues of training, recruitment, leadership and support for teachers in the classroom and beyond.”

The key element of this strategy is a performance threshold on the salary scale beyond which only those teachers assessed by their head as suitable may progress (Department for Education and Employment, 2000b). Documentation which reported on the outcomes of consultation on the draft standards for the threshold noted that there “should be a rounded assessment covering what teachers bring to the job; how they deploy their skills; and the results they achieve taking into account pupils’ prior achievement” (Department for Education and Employment, 2000a, p.1).

To “inform the performance threshold” standards further (Morris, 2000, p.1), the Government commissioned an international firm of consultants, Hay McBer, to undertake analysis of effective teaching. Hay McBer commented:

[P]rofessional characteristics are *how* the teacher does the job. These are based upon the deeper-seated qualities the teacher brings to the role including self-image and values; traits or the way they habitually approach situations; and at the deepest level, the motivation that drives performance. These personal characteristics matter because when combined with subject and other knowledge and skills described in the National standards, they lead to effective results on the job.

(Hay McBer, 2000a, p.2)

The outcomes of the Hay McBer analysis are considered in more detail in a later part of this Chapter.

### **Underlying tensions**

Furlong et al. (2000a) reported that of the range of reforms, it is those concerned with teacher education that have been particularly contentious. They commented that the Conservative

Government set out to reconceptualise teacher professionalism by challenging traditional views of teachers as autonomous professionals. Such views held, for example:

that [teacher education] students needed to develop explicit educational values, that they needed to be knowledgeable about current educational practice and theoretically informed so that they could recognise the principles underlying current practice, and that they were capable of combining their values and their knowledge in order to make their own independent judgements as to what was and what was not effective practice.

(Furlong et al., 2000b, p.1) .

The Conservative Government's agenda "was to establish a different conception of professionalism where teachers were highly competent practitioners, proficient in working in ways that were currently demanded by schools" (Furlong et al., 2000b, p.1). Furlong et al. noted:

Governments did make considerable progress towards achieving their aspirations. The cumulative effect of a range of different policies – the invention of new routes into teaching that specifically excluded higher education, the definition of competences, the prescription of how partnerships were to be formed, the undermining of the financial stability of schools of education in universities and colleges – all of these factors contributed progressively to curtail the influence of those in higher education on the professional development of new teachers.

Ramsey (2000) and Wilson (2000) commented on the implications of the institutional framework (Teacher Training Agency, OFSTED, and General Teaching Council) for the development of professional standards in England. Ramsey (2000, p.134) noted:

the system in England is complex and that it is not possible to separate the inspectorial function in terms of the quality of schools and teachers (OFSTED) from the responsibility to accredit courses (Teacher Training Agency) from the General Teaching Council which is responsible for the professionalism of teachers.

In reality the nature of training courses flows from the needs of the profession and its clients. Whether standards are being met is integral to this process. Professionalism should be at the core, not an inspection process, although assessment of standards both of teachers and courses is a critical responsibility.

Wilson (2000, p.1) commented similarly on the separation of responsibilities. "One of the things that strikes me as curious in the design of the GTC for England is that it does not have the power to accredit teacher training." Nonetheless, it is within this institutional framework that professional standards are being developed in England.

Despite these concerns about the structures established to improve the quality of school education in England and Wales, D. Hargreaves (2000) commented from a comparison of the professional knowledge bases underpinning the medical and teaching professions that the:

educational reforms in the United Kingdom, such as school-based initial teacher training, school-based research, evidence-based professional practice and a renewed focus on teachers' classroom effectiveness, can be interpreted as part of the deeper social changes by which many kinds of knowledge production are moving from what Gibbons et al. (1994) call Mode 1 – pure, disciplinary homogeneous, expert-led supply-driven, hierarchical, peer-reviewed, university-based – towards Mode 2 – applied, problem focused, trans-disciplinary, heterogeneous, hybrid, demand-driven, entrepreneurial, accountability-tested, embedded in networks. ... My concluding hypothesis is that in the United Kingdom this rapidly growing movement within education from Mode 1 to Mode 2 will soon put United Kingdom education at the leading edge of educational knowledge production. ... the bitter opposition of the university-based teacher trainers to recent reforms may simply confirm this process is underway, probably irreversibly.

(D. Hargreaves, 2000, p.235)

Despite these tensions and concerns, the standards agenda in England and Wales has been considerably advanced by the work completed by Hay McBer.

### **The Hay McBer initiative**

The Hay McBer (2000b, p.1) report into effective teaching identified three key areas of teacher performance: teaching skills; professional characteristics; and classroom climate. Table 2.2 provides an elaboration of the three areas of teacher effectiveness identified by Hay McBer. The three areas were seen as providing “distinctive and complementary ways that teachers can understand the contribution they make. None can be relied on alone to deliver value added teaching” (p.1).

The Hay McBer analysis provides a different entry point into the development of professional standards for teachers to that of the National Board for Professional Teaching Standards. The National Board developed its standards by consensus and after having accredited teachers against the standards it commissioned research to see if the teachers meeting the standards were effective. Hay McBer attempted, first, to find out what distinguished the practice of effective teachers from those seen to be less effective. This information was then used to inform both the development of standards and the process of assessing teachers against such standards. They noted:



**Table 2.2: Characteristics of effective teachers**

Effective teachers		
<p>In classes run by effective teachers, pupils are clear about what they are doing and why they are doing it. They can see the links with their earlier learning and have some idea about how it can be developed further. The pupils want to know more. They understand what is good about their work and how it can be improved. They feel secure in an interesting and challenging learning environment. And they support one another and know where to go for help</p>		
Teaching Skills	<p><i>High expectations:</i></p> <p><i>Planning:</i></p> <p><i>Methods and strategies:</i></p> <p><i>Pupil management discipline:</i></p> <p><i>Time and resource management:</i></p> <p><i>Assessment:</i></p> <p><i>Homework:</i></p> <p><i>Time on Task and lesson flow:</i></p>	<p>Challenges and inspires pupils, expecting the most from them so as to deepen their knowledge and understanding</p> <p>Sets a clear framework and objectives for each lesson, communicates the lesson content and the content to be covered.</p> <p>Utilises a range of teaching approaches and activities designed to keep pupils fully engaged</p> <p>Has a clear strategy for pupil management and exercise authority clearly and fairly from the outset, and in their style of presentation and engagement hold the pupils interest.</p> <p>Has a clear structure for each lesson, making full use of planned time</p> <p>Uses a range of assessment methods to identify gains in learning, gaps in knowledge and misunderstandings.</p> <p>Sets and marks homework regularly, integrating it within classwork.</p> <p>Maintains at least 90% of pupils on task and the lessons flowed naturally.</p>
Personal Characteristics	<p><i>Professionalism:</i></p> <p><i>Thinking:</i></p> <p><i>Relating to Others:</i></p> <p><i>Leading:</i></p> <p><i>Planning and setting expectations:</i></p>	<p>Challenge and support; Exhibit confidence; Create trust; and Respect for others</p> <p>Analytic thinking; and Conceptual thinking</p> <p>Impact and influence; Team working; and Understanding others</p> <p>Flexibility; Holding people accountable; Managing pupils; Passion for learning; and Flexibility</p> <p>Drive for improvement; Information seeking; and Initiative.</p>
Classroom Climate	<p><i>Clarity:</i></p> <p><i>Order:</i></p> <p><i>Clear standards:</i></p> <p><i>Fairness:</i></p> <p><i>Participation:</i></p> <p><i>Support:</i></p> <p><i>Safety:</i></p> <p><i>Interest:</i></p> <p><i>Environment:</i></p>	<p>Clarity about the purpose of each lesson, as well as how it relates to the broader subject and the aims and objectives of the school.</p> <p>Discipline, order and civilized behaviour are maintained</p> <p>A clear focus on higher rather than minimum standards of student behaviour and what each pupil should do and try and achieve</p> <p>An absence of favoritism and a clear link between rewards in the classroom and actual performance</p> <p>Opportunities for pupils to participate actively in classroom activities</p> <p>Feeling emotionally supported in the classroom, students are willing to try new things and learn from mistakes</p> <p>The degree to which the classroom is a safe place, where students are free from emotional or physical bullying</p> <p>The classroom is an interesting and exiting place to learn, where pupils feel stimulated</p> <p>The feeling that the classroom is a comfortable, well organised, clean and attractive physical environment.</p>

After: (Hay McBer, 2000b)

At the start of our research we had no pre-conceived views about the specific skills or characteristics that lead to effectiveness in the classroom. Our approach

was empirical and based on established research methods. We aimed for coherence with recent research underpinning the Leadership Program for Serving Head Teachers (LPSH) and other bodies of educational research. The program of work was undertaken in a representative sample of schools and across a broad range of teachers. We drew on the expertise of a wide variety of professionals, experts and other stakeholders. Most importantly, we knew how much value each of the teachers in our main sample had added over the period of a year because we had start-of-year and end-of-year examination or test results.

(Hay McBer, 2000b, p.1)

In addition, the Hay McBer analysis provided a balance between the actions or knowledge, skills, understandings and values of effective teachers and their impacts on students. This addressed the critical issue of accountability valued by governments and communities. The Standards however, were typical of the 'generic' standards described in Chapter 1.

### **Summary**

Developments in England and Wales have proceeded from a different theoretical perspective to those underpinning the National Board in the United States. Statements of professional standards have been developed, largely by the bureaucracy in consultation with the profession. In addition, there is little emphasis on rigorous assessment or testing. Instead the Hay McBer analysis of characteristics of effective teachers was intended to provide implicit guides to assessment. Significantly, the Hay McBer analysis appears to be cast both in terms of teaching practice and impact on student learning.

### **ONTARIO, CANADA**

A further, but different, professional standards development program is that occurring in the Canadian Province of Ontario. The Ontario College of Teachers was established in 1996, in response to the 1995 report of the Royal Commission on Learning, *For the Love of Learning*. The College was established by the Government to improve the quality of teaching as:

a professional, self-regulatory body for teaching, the Ontario College of Teachers, ... with the powers, duties and membership of the college set out in legislation. The college should be responsible for determining professional standards, certification, and accreditation of teacher education programs

(Royal Commission on Learning, *For the Love of Learning* cited in Ontario College of Teachers Implementation Committee, 1995, p.6)

### The Ontario College of Teachers

The Ontario College of Teachers registers teachers for employment against *Standards of Practice for the Teaching Profession*, (Ontario College of Teachers, 1999b) and *Ethical Standards for the Teaching Profession (Ontario College of Teachers, 2000a)*. The Standards of Practice are arranged in five areas. These are shown in Table 2.3 below.

**Table 2.3: Overview: Standards of practice for the teaching profession**

---

#### **Commitment to students and student learning**

Members of the Ontario College of Teachers demonstrate care for and commitment to students. They are dedicated to engaging and supporting student learning. They treat students equitably and with respect. They encourage students to grow as individuals and as contributing members of society. Members of the Ontario College of Teachers assist students to become lifelong learners.

#### **Professional knowledge**

Professional knowledge is the foundation of teaching practice. Members of the Ontario College of Teachers know the curriculum, the subject matter, the student, and teaching practice. They know education-related legislation, methods of communication and ways to teach in a changing world.

#### **Teaching practice**

Members of the Ontario College apply professional knowledge of and understanding of the student, curriculum, teaching and the changing context of the learning environment to promote student learning. They conduct ongoing assessment and evaluation of student progress. They modify and refine teaching practice through continuous reflection.

#### **Leadership and Community**

Members of the Ontario College of Teachers are educational leaders who create and sustain learning communities in their classrooms, in their schools and in their profession. They collaborate with their colleagues and other professionals, with parents and other members of the community to enhance school programs and student learning.

#### **Ongoing professional learning**

Members of the Ontario College of Teachers are learners who acknowledge the interdependence of teacher learning and student learning. They engage in a continuum of professional growth to improve their practice.

---

(Ontario College of Teachers, 2000, p.15)

The College is empowered also to accredit providers of teacher education (Ontario College of Teachers, 1999a). The College is governed by a thirty-one member Council and serviced administratively by an independent organisation. Membership of the College is compulsory for:

- full-time or part-time teachers, supervisory officers, principals, vice-principals or consultants in a publicly-funded school
- long-term occasional teachers working in a publicly-funded school
- teachers in a private school where members contribute to the Ontario Teachers' Pension Plan
- teachers employed by the Provincial Schools Authority or the Ministry of Education and Training
- supervisory teachers (academic).

The College has approximately 175,000 members and is the largest self-regulating professional body in Canada. The College noted that

[S]elf-regulation involves the delegation of government regulatory functions to a professional body outside of government. This power is conferred only on professions that meet certain criteria, such as a specialised body of knowledge, and the profession's readiness to deal with incompetence and misconduct.

(Ontario College of Teachers, 2000c)

Since its inception the college has consulted widely amongst its members to develop Standards of Practice for the Teaching Profession and Ethical Standards for the Teaching Profession.

### **Unresolved questions**

The College is working to resolve how it might assess teachers' practice against standards. This question was given an explicit focus by the Hon. Janet Eckert, Minister for Education and Training who, in 1999, requested the college provide advice on:

how to implement a program for teacher testing which is cost effective and within the following parameters:

- regular assessment of knowledge and skills
- methodologies which include both written and other assessment techniques
- a link to re-certification
- remediation for those who fail assessments
- de-certification as a consequence if remediation is unsuccessful

(Eckert (1999) cited in Ontario College of Teachers, 2000b).

The College's response to the Minister's letter provided fifteen recommendations on the issue.

These were concerned with:

- refinement of the Board's existing accreditation requirements for teacher education and registration of teachers
- written tests of knowledge related to the Ontario curriculum, education legislation and policy appropriate for beginning teachers
- a two-year period of induction for beginning teachers
- support for teachers returning to practice
- well-defined programs of assessment to be embodied within courses supporting ongoing professional certification
- restrictions on the use of teachers teaching out of field or in specialist areas for which they do not hold appropriate qualifications
- ongoing performance appraisal of teachers
- requirements for members of the College to maintain a professional portfolio which is:
  - reported to the College every five-years for inclusion on the statement of qualifications
  - part of evidence presented in performance appraisal processes.

The Minister's request for advice could be seen to be a response to the tension between the quality assurance focus of the College, characteristic of self-regulated professions, and the accountability requirements of the government and communities.

Accountability, if defined in terms of external monitoring, is present only in terms of the accreditation of teacher education institutions. The College imposes no apparent accountability demands on individual teachers themselves or on schools.

### **Summary**

The standards developed in Ontario could be characterised as 'immature' standards as a consequence of their "generic skills and decontextualised performance" (Louden, 2000, p.1). The request by the Government for advice on 'teacher tests' presents a number of challenges for the College, not the least being to the principle of professional ownership of the standards and processes for assessing their achievement.

## **PROFESSIONAL STANDARDS DEVELOPMENTS IN AUSTRALIA**

Compared with the developments in the United States and United Kingdom, there has been less progress on the development of professional teaching standards in Australia. Brock and Mowbray (1998) reviewed developments in Australia in 1998. They reported on the development of graduate standards, competence standards, and standards to recognise teaching excellence (Jasman, 1998a, 1998b; Jasman & Barrera, 1998). Since that time there have been a range of further national and State initiatives.

The impetus for developing national standards has come from a number of quarters. The Australian Council of Deans, professional associations and school systems have all been active in the development of professional teaching standards. Other developments have arisen at the State level. The following discussion describes some recent national and state initiatives.

### **National developments**

National standards developments in Australia fall into four areas. The first concerns the development of common or agreed standards for teacher preparation. The second involves the development of subject specific standards for accomplished teachers. The third is, the attempt by the Australian College of Educators to broker an agreement about a 'National Standards Framework.' The last is the work being undertaken by the Teacher Education and Quality Leadership Taskforce on behalf of the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA).

#### ***Teacher Preparation Standards***

There have been a number of attempts to develop standards for teacher preparation. The most recent led to the publication of *Preparing a Profession* (Australian Council of Deans of Education, 1998). This report, sponsored by the Commonwealth Government recommended a detailed set of graduate standards and guidelines, program standards and guidelines, and mechanisms for ensuring their application.

The graduate standards and guidelines covered the following aspects of beginning teacher preparation:

- general professional attributes
- duty of care and health and safety
- students and their communities

- indigenous education
- content studies
- literacy
- numeracy
- teaching and learning
- relationships with learners and behaviour management
- technology
- assessment and evaluation
- working with others
- working in schools and systems.

The Program Standards and Guidelines established criteria for:

- program development, implementation and monitoring
- program staff and their qualifications and experience
- physical and other facilities
- selection and entry of students
- curricula
- duration
- structure and procedures
- teaching and learning approaches
- assessment

Ramsey (2000, p.139) provided the following commentary on *Preparing a Profession*.

An analysis of the report by Gore and Morrison (1999) noted, however, that although there is much to commend in the report, its chief failing is that it did not address adequately how faculties of education might implement this new vision of teacher preparation. They described the report as “an instance of ‘wishful rationalism,’ setting itself and the profession impossibly high goals.”

Since the release of *Preparing a Profession* there has been little support amongst teacher educators, and Commonwealth, State and Territory Government for its implementation.

***Subject specific Standards for accomplished teachers***

The Australian Research Council funded three three-year collaborative research projects in 1999, to develop professional standards and performance assessments for Science, English and Mathematics teachers (Ingvarson & Wright, 1999). Two associations, The Australian Association for Mathematics Teaching (AAMT) and the Australian Science Teachers Association (ASTA) have worked to develop standards for accomplished teachers. The Australian Association of Teachers of English (AATE) elected to develop standards applicable to all teachers of English, regardless of their level of competence or accomplishment.

Although the development of the *National Professional Standards for Highly Accomplished Teachers of Science* (Australian Science Teachers Association, 2002) and *Standards for Excellence in Teaching Mathematics in Australian Schools* (The Australian Association of Mathematics Teachers Inc., 2002) were heavily influenced by the work of the NBPTS, the form of the standards developed were dissimilar from those of the National Board. The Mathematics and Science standards were not as comprehensive as the standards developed by the National Board. They also differed in another fundamental way in that they apply to all teachers of the subjects, regardless of the stage of schooling. The National Board's standards are specific to subjects and the stage of schooling.

The Mathematics Standards were presented in ten areas of teaching organised in three domains:

## Professional Knowledge

- 1.1 Knowledge of students
- 1.2 Knowledge of Mathematics
- 1.3 Knowledge of students learning Mathematics

## Professional Attributes

- 2.1 Personal attributes
- 2.2 Personal Professional Development
- 2.3 Community Responsibility

## Professional Practice

- 3.1 The learning environment
- 3.2 Planning for learning
- 3.3 Teaching in Action
- 3.4 Assessment



The Science standards were organised in three similar domains but the areas of teaching within the domains differed. STELLA, the Standards for Teachers of English Language and Literacy in Australia (Australian Association of Teachers of English, 2002) were also organised in three domains: Professional Knowledge; Professional Practice; and Professional Engagement. The standards differed in their focus from those for Science and Mathematics teachers.

The standards for Science and Mathematics were designed to underpin processes for the identification of accomplished teachers. In Mathematics in particular, further work has been done developing assessment processes for the accreditation of teachers against the standards. Although in each case the standards were designed to address the specific needs of Mathematics and Science teachers, there were significant similarities in the organising frameworks for each of the standards developed.

### ***The Australian College of Educators***

A third recent national development has been the attempt by the Australian College of Educators to take a leadership role in the development of a national standards framework. The College's interest in professional standards was given impetus by Boston (1999a; 1999b) who was the President of the College at that time. The subsequent work was once again sponsored by the Commonwealth Government. An initiative of the College was an attempt to broker agreement on a nationally agreed framework. The statement *Teacher Standards, Quality and Professionalism: Towards a Nationally Agreed Framework* (Australian College of Educators, 2001) was the outcome of a national summit (Australian College of Educators, 2000) involving professional associations, policy makers and stakeholders. It identified three areas for action:

#### 1. Engage the profession

The profession needs to play a central role in the development of professional teaching standards, their implementation and monitoring and in advocating their use. Integral to success is ensuring that the whole profession, across all sectors, systems and jurisdictions understands and is engaged in the process of continuous development with regard to quality teaching and learning.

#### 2. Generate national commitment and support

In collaboration with key stakeholders, the profession needs to draft a 'National Declaration on the Quality of Teaching' that builds on the quality of student learning enunciated in the Adelaide Declaration on National Goals for Schooling in the Twenty-First Century, and acts as a benchmark for professionalism and professional teaching standards nation-wide. Once endorsed by the profession, the declaration should then be presented to MCEETYA [the Ministerial Council on Education, Employment, Training and Youth Affairs] for adoption.

### 3. Pursue a common and unifying approach

In partnership with MCEETYA, the profession needs to prepare a strategic plan outlining the means by which the Framework and the Declaration can be developed collaboratively with the resources required to guarantee genuine participation by educators in all sectors, levels and settings. A group representative of the profession should be appointed to assume a leadership role with a view to ensuring that both the Framework and the Declaration are all completed and endorsed by key stakeholders within an agreed timeframe (e.g. three years).

(Australian College of Educators, 2000, pp.3-4)

The work of the College was progressed through a series of national conferences which sought to broker agreement on a nationally agreed framework for professional teaching standards. Following several such conferences, the College released *A National Statement on Teacher Standards and Professionalism* (Australian College of Educators, 2003) in May 2003. This statement established principles for advancing the issue.

While the College was instrumental in promoting significant debate on the issue of professional teaching standards, the College was not able to progress the issue beyond this debate. There was little support for the College undertaking this role from State and Territory authorities or from other professional associations who had their own developments underway.

In addition, the emergence of the Australasian Forum of Teacher Registration and Accreditation Authorities (AFTRAA) whose members, in some cases, had statutory responsibility for standards of entry to the profession meant that the work could not continue without the involvement of AFTRAA. The impasse was broken by the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) through its remit to the Teacher Quality and Educational Leadership Taskforce (TEQLT) to develop a National Framework for Standards.

#### ***The Teacher Education and Quality Leadership Taskforce***

The Teacher Education and Quality Leadership Taskforce (TEQLT) was established by MCEETYA in 1999 to advise on issues related to the supply and quality of teachers. The Taskforce made up predominantly of policy officers from State and Territory school systems was requested by MCEETYA in 2001 to undertake a project to develop a *National Framework for Professional Standards for Teaching*.

In July 2002, MCEETYA approved the use of the paper *National Standards Framework for the Teaching Profession* as part of a set of consultation materials to be distributed to representatives of peak national organisations. This led to the development of the *National*

*Framework for Professional Standards for Teaching* (Teacher Quality and Educational Leadership Taskforce, 2003). With the release of the framework the focus of activity shifted to States and Territories.

### **Developments in New South Wales**

As noted previously, the move to develop professional standards in NSW was given significant impetus by the report of Brock and Mowbray (1998). However, an attempt to introduce legislation to establish a Teacher Registration Board in NSW in 1998 failed. Following this, the NSW Government commissioned Gregor Ramsey to undertake a comprehensive review of Teacher Education. His report, *Quality Matters* (Ramsey, 2000) recommended the development of a framework of professional teaching standards.

Subsequently, a taskforce was established to advise the NSW Government on a possible response to the Review's recommendations. Amongst other recommendations, the Taskforce on the Review of Teacher Education (2001) recommended to the Government:

That the Government set up an interim committee for a NSW Institute of Teachers, with members appointed by the Minister following discussion with key stakeholder groups and consistent with the principles for governance outlined in this report and in the draft Charter, to complete the following tasks:

- a. conduct a comprehensive communications and consultations strategy with schools, teachers and the community on the proposed functions and principles set out in the draft Charter for a NSW Institute of Teachers in Appendix D [see the report of Taskforce on the Review of Teacher Education]
- b. develop advice on an appropriate model for the governance and operation of a NSW Institute of Teachers, including related draft legislation
- c. begin the processes of developing professional teaching standards and related teacher accreditation criteria, consistent with the frameworks and principles for professional teaching standards and teacher accreditation recommended by the Taskforce
- d. advise the Minister on related national developments, including the work of the MCEETYA taskforce on teacher quality and educational leadership
- e. report to the Minister during 2002 on progress in relation to the above tasks and advise on the further development of the proposed NSW Institute of Teachers and the professional teaching standards framework, and related teacher accreditation system, for 2003 and beyond.

(Taskforce on the Review of Teacher Education, 2001, p.34)

To support its advice to the Government, the Taskforce set about developing a set of standards for beginning teachers as an exemplar for discussion and consultation. On the basis

of this work a decision was taken to establish an Interim Committee for a NSW Institute of Teachers to commence the work of an Institute.

### **Summary**

The development of professional standards in Australia has lagged behind the initiatives in the United States, England and Wales, and Ontario described in earlier sections of this chapter. The key question in Australia and in NSW concerns 'who has the authority or mandate from the profession to undertake this work?' Despite the development and endorsement of the National Framework for Professional Teaching Standards, professional organisations such as the Australian College of Educators appear to have neither sufficient support from teachers nor the resources necessary to develop standards and undertake the role of professional arbiter. In the short term, State registration authorities appear best placed to undertake the development of standards for entry to the profession, through their legislated responsibility for regulating entry to the teaching profession. The National Framework for Professional Teaching Standards establishes an organising framework for each state to develop entry standards that meet their own specific needs while retaining national consistency.

### **PARAMETERS AND SCOPE OF INVESTIGATIONS**

The literature survey undertaken in Chapter 1 and to this point in Chapter 2 has set the scene for the investigations to follow. The remainder of this chapter is concerned with delineating the parameters and scope for these investigations. Three sub-sections follow. The first sub-section defines the terms to be used in the remainder of the thesis. The second sub-section describes the processes used to develop the set of theoretical standards that are the subject of the research. The third sub-section identifies research themes and research questions to be investigated.

#### **Definitions adopted in this study**

The earlier discussion of terminology in Chapter 1 identified a range of definitions for terms associated with the words 'quality' and 'standards.' In order to clarify the meaning attributed to these terms and other terms in this thesis the following definitions have been adopted.

*Quality* refers to the level or grade of performance.

A *standard* is a statement which establishes accepted practices or technical requirements for the purpose of making judgements in a context of shared meanings.

A *teaching standard* is a statement setting out what the profession, or education authorities and the community expect teachers to know, understand, value and be able to do.

*Benchmarks for teaching* relate to the quality of professional performance agreed as necessary for accreditation against the standards.

*Assessment* against a teaching standard is the process of determining if and how a teacher demonstrates whether their performance is consistent with, above or below that required of the appropriate performance benchmark. As with other forms of assessment, it has both formative and summative dimensions.

*Certification of teachers* is the formal process of licensing teachers to practise.

*Accreditation of teachers* is the specific recognition, by the relevant body, accorded to teachers who demonstrate that their performance is at or above the benchmark established for accomplished teachers.

A *student teacher* is a prospective teacher, that is, a person completing a program of initial teacher education.

A *beginning teacher* is a teacher undertaking an initial or a probationary period of employment.

The next sub-section describes the processes leading to the development of the theoretical standards investigated in this thesis. A table summarising the standards is also presented.

### **Development of a set of theoretical standards**

As noted previously, work was undertaken on behalf of the Teacher Education Review Taskforce to develop a set of theoretical standards for beginning teachers. This work was undertaken by a small group of officers from within the NSW Department of Education and Training. The group was convened by the researcher, in the capacity of Executive Officer of the Teacher Education Review Taskforce. Included in the group were the Directors of Training and Development, Personnel Policies, and Strategic Research, a school principal, a TAFE NSW Institute Director, and the Chief Education Officer Teacher Learning. The group met seven times to consider drafts of the standards prepared by the Executive Officer.

The starting point for the work was the synthesis of existing professional teaching standards prepared by Brock and Mowbray (1998). This work involved an analysis of statements of

standards from a range of contexts including those described in the previous section of this chapter. They included standards from Ontario Canada, (Ontario College of Teachers, 1999b) the United States, (Interstate New Teacher Assessment and Support Consortium, 1992; National Board for Professional Teaching Standards, 1996b), England, Scotland, Queensland and Victoria. Other perspectives arising from a range of policy priorities and perspectives held by the NSW Department of Education and Training were also addressed in the final draft of the theoretical teaching standards. The group also considered the range of conceptual models used to describe teaching standards.

The competence model underpinning the development of the standards was the 'integrated model' of competence, that is, demonstrations of competence bring together perspectives on tasks, attributes and the context of application (Hager & Becket, 1995). The domains and elements of the standards developed by the group are summarised in Table 2.4.

In summary, the standards comprise 27 elements across seven domains of teaching. For example, the second domain is referred to nominally as *Knowledge and understanding of what is taught and the disciplines upon which teaching is based*. Its primary focus is on subject content knowledge. The elements within each domain provide greater specificity, for example, *2.1 Demonstrate their knowledge, skills, understanding and values of the subject(s) they teach*, refers to knowledge skills and understanding in the content area. The salient focus of each element is presented in a brief descriptor (see Appendix 1). The following descriptor was provided for element *2.1 Demonstrate their knowledge, skills, understanding and values of the subject(s) they teach*:

[Teachers] do this by:

- being able to explicate the major concepts and principles underpinning the(se) subject(s)
- recognising how the knowledge and skills of the subject are utilised and valued in society
- being aware of how the knowledge in their subject area is created and linked to other subjects

Following consideration of the exemplar standards, the Taskforce recommended to the Minister the development of a broad framework of professional standards at four stages of teachers' careers (Teacher Education Review Taskforce, 2001). Subsequently a decision was taken not to use or publish this exemplar set of teaching standards in any official capacity. In the absence of any existing standards, they were then adopted for use in this thesis.

**Table 2.4: Summary of domains and elements of the theoretical standards framework**

<b>1. Commitment to students and their development</b>
Teachers:
1.1 demonstrate high levels of care and commitment to their students
1.2 treat all students justly and equitably, and with an appropriate sense of good humour
1.3 know, critically review, and use as appropriate, a range of educationally sound theories
1.4 recognise that they can enhance students' potential as lifelong and independent learners by enabling them to take responsibility for their own learning
1.5 respect the dignity and individualism of students
1.6 ensure that their goals for student learning are consistent with those set out in relevant state and nationally agreed objectives such as, for example, the Board of Studies syllabuses and the Common and Agreed National Goals for Schooling in Australia.
<b>2. Knowledge and understanding of what is taught and the disciplines upon which teaching is based</b>
Teachers:
2.1 demonstrate their knowledge, skills, understanding and values of the subject(s) they teach
2.2 model the values of the scholar-teacher
2.3 are advocates for the subjects they teach
2.4 maintain the currency of their content knowledge.
<b>3. Expert in the 'art and science' of teaching</b>
Teachers:
3.1 are able to communicate to others the knowledge, understanding, skills and values of the subjects they teach
3.2 create and support learning within their classrooms
3.3 manage the learning environments in which they work
3.4 are flexible in their approach to teaching
3.5 plan for individual student's learning.
<b>4. Assessing and reporting the learning outcomes of students</b>
Teachers:
4.1 understand that the primary purpose of assessment is to provide information on student achievement and progress to inform future teaching and learning
4.2 integrate student assessment and reporting into teaching and learning
4.3 convey meaningful and useful information to students and parents.
<b>5. Managing safe, secure and productive learning environments</b>
Teachers:
5.1 establish classroom management strategies that support student learning
5.2 create safe and secure environments for young people.
<b>6. Reflecting and continuously enhancing their own learning</b>
Teachers:
6.1 continuously reflect on their practice and its effect on student learning
6.2 are lifelong learners
6.3 take responsibility for their own professional growth.
<b>7. Leadership in communities of learning</b>
Teachers:
7.1 seek to create learning communities
7.2 demonstrate educational leadership
7.3 sustain learning through their capacity to promote change and innovation
7.4 enhance the professional status of teachers within the community.

The standards are referred to throughout the remainder of the thesis as ‘theoretical standards.’ There are two reasons for this appellation. The first is that their development was informed by the theoretical knowledge about the conceptualisation and content of standards. The second is that they have not been subjected to, or tested in, practice, so that their status is theoretical.

### **Research themes and questions**

The analysis presented in this and the previous chapter provides a rich source of information about the development of professional teaching standards. This analysis presents the views of governments, educational theorists and researchers. What is missing from this analysis is an understanding of the range of views and perspectives of practising teachers towards professional standards. Given that it is practising teachers who will have to engage with and meet professional teaching standards, an understanding of their views is critical to the successful development and application of professional standards.

The title of this thesis foreshadows a comparison between teachers’ perceptions of professional standards and their practices. The purpose of this comparison is to investigate whether what teachers say about their practice is reflected in what they do? Two studies are described in the next chapter to investigate these broad issues. The first study is designed to investigate teachers’ perceptions of the theoretical standards identified in Table 2.3, that is, to investigate what teachers say about their practice. The second study examined supervisors’ reports on student and beginning teachers as a means of identifying common teaching practices. To some extent the studies could be characterised as providing a means of comparing teachers’ perceptions of theory with descriptions of practice.

These studies give rise to two research themes which encompass four research questions. The first theme is concerned with investigating the perceptions of practising teachers with regard to professional teaching standards. Within this theme there are two research questions.

#### Research Question 1

What are teachers’ perceptions of the theoretical standards developed in Table 2.4 from the perspectives of:

1. *achievability;*
2. *preparedness; and*
3. *development-priority?*



### Research Question 2

Are there differences amongst the perceptions of *achievability*, *preparedness* and *development-priority* of:

1. teachers with different levels of experience;
2. teachers of different ages;
3. primary and secondary teachers;
4. classroom teachers and promoted teachers; and
5. teachers with or without supervisory or mentoring responsibility?

The second research theme is concerned with teachers' practices as described in supervisors' reports on student and beginning teachers. An understanding of how teachers describe their practice is important to the articulation of professional teaching standards. Two research questions are apparent in this theme.

### Research Question 3

What does a qualitative analysis of supervisors' comments in reports on student and beginning teachers tell us about teaching practices, and how can this information be applied to the development of professional standards?

### Research Question 4

What does Rasch modeling of the results of the qualitative analysis above tell us about:

1. the underlying differences and similarities amongst comments in the analysis of the reports
2. the differences amongst the comments of reports from different groups of supervisors?

In addition to providing a basis for comparing teachers' perceptions of professional standards and their practices, these questions identify potential issues and implications for the development and application of professional teaching standards and for teacher certification processes. Consequently, this research has potential to contribute significantly to knowledge of the development of professional standards and their application.

The next Chapter sets out the methodology for investigating each of these questions.

## **CHAPTER 3**

### **RESEARCH DESIGN AND METHODOLOGY**

Thought is the key to knowledge. Knowledge is discovered by thinking, analyzed by thinking, organized by thinking, transformed by thinking, assessed by thinking and most importantly *acquired* by thinking. There is no way to take the thinking out of knowledge, or the struggle out of thinking, just as there is no way to create a neat and tidy step-by-step path to knowledge that all minds can follow mindlessly.

(Paul, 1992, p.xi)

#### **INTRODUCTION**

In talking to senior high school students during his review of teacher education in NSW Gregor Ramsey derived from their comments the following description of good teaching:

They wanted their teachers to:

- know and understand their subject
- treat each student as an individual
- make learning the core of what happens in the classroom
- manage distractions that prevent learning.

(Ramsey, 2000, p.12)

While this simple but unequivocal description of good teaching could be seen to apply to teachers universally, it masks the complexity of teaching and fails to describe fully the wider roles teachers are expected to play, for example, through participation in co-curricular and community activities. The articulation of professional standards with the capacity to support and guide teachers in all aspects of their work is not an easy task. The task is made even more difficult by the need for professional teaching standards to respond to competing and at times conflicting political and policy agendas.

It was not surprising, therefore, that the discussion in Chapter 2 revealed significant differences in how teaching standards are conceptualised and articulated. Inherent in that discussion of professional teaching standards was the view that classroom teachers in NSW were yet to engage fully with the concept of professional standards.

The purpose of this chapter is to describe the research methodology established to investigate teachers' perceptions of professional standards and how these perceptions align with how teaching practices are currently reported. The chapter is organised under seven sections: the context of the study; overview of the research design and its epistemological foundations; design of instrumentation and sampling for study 1; instrumentation and sampling for study 2; data analysis; evaluation of the research design; and conclusion.

### **CONTEXT OF THE STUDY**

This investigation is designed to contribute to an understanding of professional teaching standards and how they might be applied. These issues have relevance to teachers in primary and secondary schools across Australia and internationally. The increasing importance attached to education at the individual, community, national and international levels is sharpening the policy focus on issues of teacher effectiveness and competence. Although there is a broad international movement surrounding professional teaching standards, the focus of this study and data upon which it is based relate to teachers in NSW.

New South Wales, as the most populous state in Australia, represents a large-scale educational microcosm. In 2001 there were more than 80,000 teachers working in more than 2900 public and private schools in New South Wales. Some 760,000 students, or approximately 70 per cent of the total number of students, were enrolled in government schools. Approximately 3,000 new teachers are appointed to teach in government schools in New South Wales each year.

In the government school system, beginning teachers are required to have satisfactorily completed a recognised program of teacher education prior to employment. An essential element of such programs is a period or periods of practice teaching in schools. Satisfactory completion of this form of professional experience is a mandatory requirement of all teacher preparation programs offered by universities. Universities employ a range of assessment criteria and practices to assess student teachers' progress and capability at the end of each practice teaching session. Common to all, however, is the production of written reports of student teachers' progress and achievements. These reports take a number of forms, comprising a mix of check boxes relating to specific capacities and achievements, and sections for the supervisor to make a descriptive statement.

On completion of their initial training, student teachers are able to apply for appointment in primary schools as generalist teachers, or in secondary schools as teachers of specific

subjects, for example, as teachers of Mathematics or History. A smaller but significant number of teachers is appointed to specialist positions, such as, for example, behaviour management specialists, teachers of students from non-English speaking background, or teachers of students with learning difficulties.

All beginning teachers appointed to government schools, are required to complete a period of successful probationary employment. At the end of that period, a determination is made of their fitness to retain the position held. Those beginning teachers judged 'competent' are employed on the permanent staff and awarded a Teaching Certificate. The Certificate represents the demonstration of the minimum level of competence required of a teacher in the NSW public school system.

Those beginning or probationary teachers not meeting requirements for certification have their probation extended to allow them additional time to meet the requirements. If, after further support, they are unable to meet the requirements of certification they are dismissed.

The outcomes of the principal's assessment are conveyed through a written report that, in the case of a positive outcome, concludes with the comment "satisfies requirements for the position held and the award of a teacher's certificate." If deemed not satisfactory the concluding comment is "does not satisfy requirements ... ."

While the preparation and content of the report is the responsibility of the principal, the report is most commonly written by a supervising teacher. This judgement of 'competence' is holistic and impressionistic rather than being evidence-based. After completion, all reports are sent first to the District Superintendent for endorsement and then to the NSW Department of Education and Training Personnel Directorate where they are retained in a central repository.

Teachers who remain competent throughout their careers are not required to undergo any further formal assessment of competence. However, teachers who are unable to maintain their competence at or above minimum levels are designated as "Teachers Experiencing Difficulty." Current industrial agreements require that such teachers be placed on a support program to assist them to overcome their difficulties. Where a teacher is not able to demonstrate improvement, the supervisor writes a report with a recommendation indicating that the teacher's performance of their duties is not satisfactory for the position held. Procedures are then commenced to dismiss the teacher.

Other teachers, however, may volunteer to be assessed as part of a merit-based application for promotion. It is not obligatory, however, for teachers to seek promotion. The promotion processes, however, is not based on any fixed standards, rather it is a comparative process

where candidates compete through application and interview on the basis of 'merit.' The Panel responsible for recommending the appointment must also consider the candidate's readiness or capacity to fulfill the requirements of the position. This determination is based on the performance of the candidate at interview and on the advice from referees (Personnel and Employee Relations Directorate, 1997).

### **OVERVIEW OF THE RESEARCH DESIGN AND ITS EPISTEMOLOGICAL FOUNDATIONS**

The research design comprised two parallel studies: an analysis of teachers' perceptions of a theoretical set of professional standards; and an analysis of teachers' practice. In concept and design these studies were independent, yet they complement each other by broadening the understanding about how professional standards might be applied in the teaching profession.

To simplify and clarify subsequent discussion, the investigation of teachers' perceptions of professional standards was identified as 'Study 1' and the analysis of teachers' practice was identified as 'Study 2.'

Study 1 involved the development and conduct of a survey based on a set of theoretical standards that might apply to beginning teachers. The absence of agreed professional teaching standards in New South Wales was a significant constraint on the design of this study. Therefore a prior task was the development of an appropriate set of theoretical standards. Subsequent stages of the design were concerned with the development, refinement and evaluation of the survey instrument, and identification of an appropriate sample.

Study 2 arose from the opportunity to undertake a detailed analysis of the practices of student and beginning teachers as reported in supervisors' reports. The reports referred to in the earlier discussion of the context for this research provided a rich source of qualitative data for post hoc analysis. This analysis was undertaken using NUD\*IST, a sophisticated computer program developed to support qualitative analysis of text. The reports described teaching practices from the perspective of teachers and, as such, provide an authentic source of data.

These two studies brought together quantitative and qualitative research methods which arise from distinct epistemological traditions having particular and specific implications for the form and conduct of the research design of each of the studies. It is helpful at this point to provide a brief outline of the characteristics and differences of these two research paradigms before proceeding to describe and discuss the design elements of each study.

### **Epistemological foundations**

Quantitative and qualitative research paradigms have traditionally been characterised as arising from different and distinct traditions. Hoepfl (1997) distinguished between the two paradigms noting:

Phenomenological research, or qualitative research, uses a naturalistic approach that seeks to understand phenomena in context-specific settings. Logical positivism, or quantitative research uses experimental methods and quantitative measures to test hypothetical generalizations. Each represents a fundamentally different inquiry paradigm, and research actions are based on underlying assumptions about each paradigm (p.47).

and:

Where quantitative researchers seek causal determination, prediction and generalization of findings, qualitative researchers seek instead illumination, understanding, and extrapolation to similar situations. Qualitative analysis results in a different type of knowledge than does quantitative inquiry (p.47).

Bloland (1992) commented that although a dichotomous view of the paradigms is “too simplistic,” research is characterised as quantitative when it uses “numbers as data to describe events or establish relationships between events” and qualitative when it uses “words to describe human experience or behaviour.” He stated further that:

What ... qualitative approaches have in common is a reliance on the written word or observable behaviour of the person being studied as the principal source of data for analysis. The purpose of such research is a greater understanding of the world as seen from the unique viewpoint of the people being studied (p.1).

While the distinctions noted above are helpful, a number of writers have challenged this dichotomous view of the methodologies. For example, Onwuegbuzie (2000) observed the assertions of “purists on both ends of the epistemological continuum, contending such a dichotomous view was false.” He called for “epistemological ecumenicalism” through the use of mixed methodological approaches. Similarly, Tellez (2001) called for removal of the “false wall between qualitative and quantitative methods of describing, predicting and controlling education.” Consistent with these views is an increasing range of research integrating quantitative and qualitative within a single investigation (Dickson, 2000) many of these undertaken because of their significant potential to confirm and reinforce findings.

Confidence in such findings, however, is still dependent upon the measures taken to ensure the quality and rigour of the designs. In the case of Study 1, a quantitative study, the issues of validity and reliability are central to quality, whereas the qualitative nature of Study 2 means that trustworthiness described in the terms of the credibility, transferability, dependability and confirmability of the study is the overriding determinant of quality.

These issues are considered in detail within the evaluation of the designs of the two studies presented later in this chapter.

### **Overview of the Designs**

A schematic representation of the research designs is provided in Figure 3.1. Both studies in this investigation are described in terms of four stages, each stage is dependent upon and builds on the previous stage.

The discussion that follows relates to the first three stages of each study. The description of the research methodology of each of the studies is organised around headings that correspond to the stages in the above schema. A detailed discussion of the data analysis plan and evaluation issues relevant to each study follows the description of research methodologies.

### **DESIGN OF INSTRUMENTATION AND SAMPLING FOR STUDY 1**

As noted in the overview above, Study 1 required the development of a theoretical set of standards as the basis of a survey instrument designed to assess teachers' perceptions of standards. The following section describes the development of the survey instrument; piloting and trialling of the survey instrument; outcomes of the pilot; and sampling and implementation

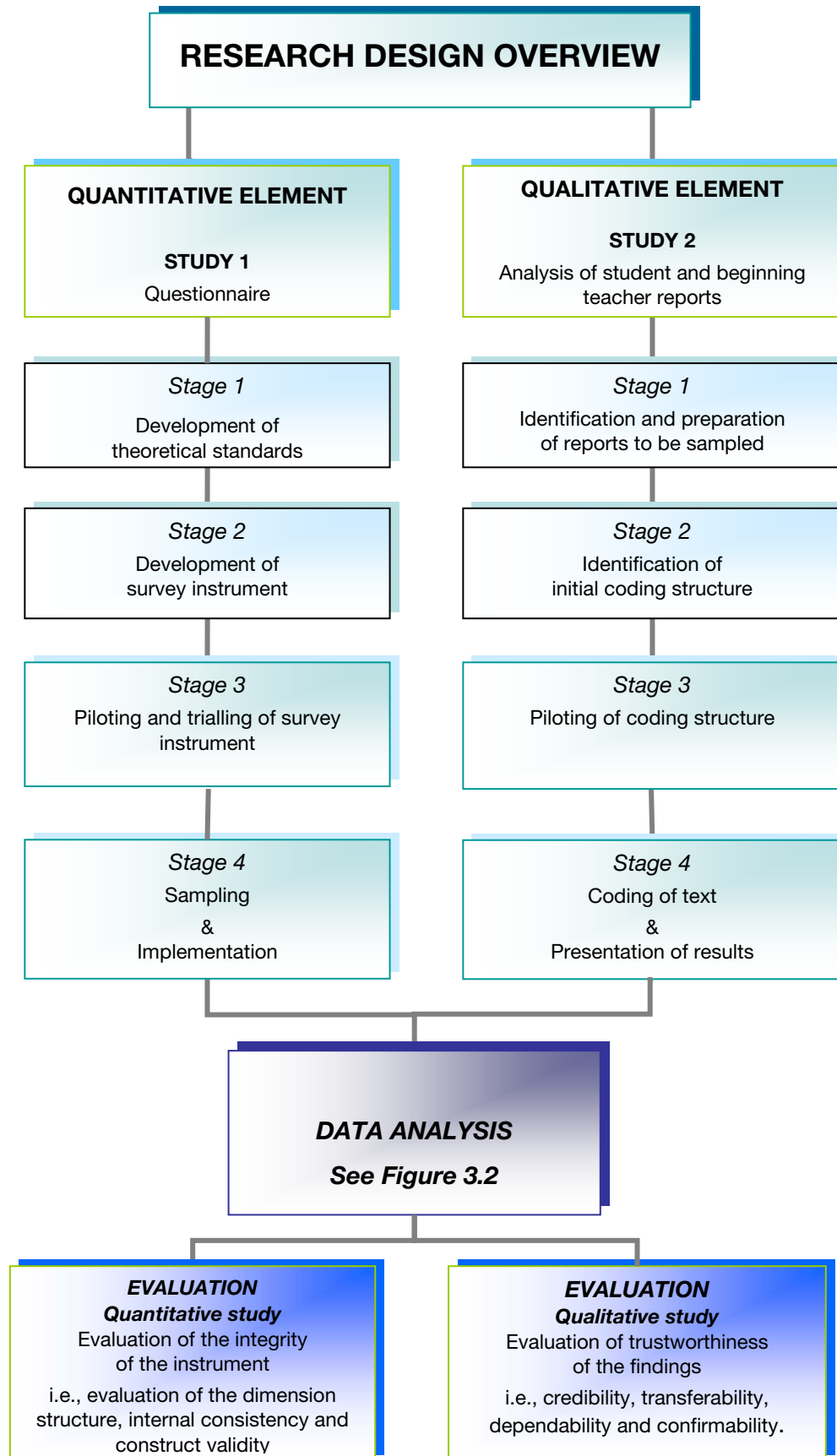


Figure 3.1: Design overview of the research study



### **Development of the survey instrument**

The theoretical standards referred to above were developed as a draft survey instrument broadly consistent with the model developed by Dickson (2000). This included attention to the draft questionnaire guidelines provided by Borg and Gall (1989) such as:

- organising the layout of questions so that the instrument is as easy to complete as possible
- numbering the questionnaire items and pages
- including brief, clear instructions
- using examples with items that might be confusing or difficult to understand
- organising the questionnaire in a logical sequence
- beginning with non-threatening items
- providing enough information in the questionnaire so that items are meaningful to the respondent.

The draft questionnaire was arranged in three parts. The first part encompassed general instructions for its completion. The second part was designed to collect background information about the respondents in order to investigate the research themes and questions identified in Chapter 2. This section required respondents to answer questions about their length of teaching experience, their age, whether they were teaching in primary or secondary schools, their position in the school and their mentoring/supervisory experience.

The third part of the instrument was modeled on the survey design of (Dickson, 2000) where he sought responses from soccer officials to competences relevant to their responsibilities. In his study, respondents were required to rank each competence in terms of its “importance,” “preparedness” and “improvement-priority.” In the present study, teachers were asked to respond to each element of the theoretical standards described above from the following three perspectives:

- (1) To what extent are these expectations of teachers realisable?
- (2) How well prepared are beginning teachers to meet these expectations at the end of their first year of teaching?
- (3) What level of priority should be given to teacher development in this area?

To simplify the description of the outcomes of this study, these perspectives are referred to as their ‘*achievability*,’ ‘*preparedness*’ and ‘*development-priority*.’ A five point ‘magnitude’ or Likert scale was used to rate teachers’ response to each of the questions.

The scale was presented uniformly in each question with '1' referring to 'least' and '5' to 'greatest.' Although Likert type scales have been widely studied and used in the measurement of attitudes, Mason (1998) noted that such scales are appropriate only if respondents are comfortable with translating subjective phenomena into a number. He observed that such scales were attractive because they are "monotonic and linear, and they identify a middle position" and because they also support quantification and summary statistics. He expressed caution, however, in their use in the measurement of subjective feelings as they assume equal differences between the points on the scale. For example, the difference between 'very-good' and 'excellent' may not be the same as that between 'good' and 'very-good.'

Mason also cited research by Devlin, Dong, and Brown (1993). They found that such scales did not satisfactorily discriminate between high and very high performance and that there was a tendency towards "massing" at the middle of the scale.

The choice of direction of the scale was also an issue with some studies aligning the most positive response with smallest numerical value (e.g., Anshel et al., 1987; Anshel & Webb, 1991; Bernardin et al., 1976) and others aligning the most positive response with the greatest numerical value (Anshel, 1995; Landy 1985). In the absence of an accepted or standard response format a decision was taken in this study to align the most positive response 'greatest' with the highest score '5' and the 'least' positive response with '1.' This decision was taken on the basis that it seemed counter-productive to represent the most positive response with the smallest numeric value.

Several other design features were incorporated into the instrument to enhance its clarity, simplify its presentation, and to make it easier to interpret. These included commencing each section of the survey and each competence domain on a new page and providing examples to indicate how teachers might demonstrate each element of competence.

Taken as a whole, the design principles of the instrument were intended to increase its effectiveness. As noted by Dickson (2000), such design features are not in themselves significant but their collective effect is to increase the likelihood of the survey being completed.

### **Piloting and trialling of the survey instrument**

Following the development of the draft instrument, a two-stage pilot process was implemented to evaluate the clarity of the instructions and the questions, and the time needed to complete the questionnaire (Drew et al., 1996). The piloting did not attempt to investigate a range of issues suggested by de Vaus (1995, pp.100-101). These issues were variability amongst the

questions, respondents understanding of the meaning of the question, redundancy of questions, scalability, non-response to questions, and acquiescent responses. Investigation of these issues was deemed inappropriate given the intent of the questionnaire was to determine respondents' perceptions of the standards upon which questions were based.

The first stage of the pilot process involved submitting the draft instrument to a small number of teachers and peers ( $n=5$ ) experienced in survey development. The second stage of the pilot process was conducted at a high school in the districts to be sampled. This process involved a meeting with teaching staff, a discussion of recent standards development initiatives and an invitation to complete the survey. Thirty-one survey forms were completed, with the average time taken to complete the survey being approximately twenty minutes.

This phase of the pilot addressed questionnaire evaluation criteria proposed by De Vaus (1995, p.101) relating to flow of questions, tendency to skip questions, timing and respondent interest and attention. The use of teachers in this stage of the pilot was consistent with the advice of Drew, Hardman, and Weaver-Hart (1996) to ensure subjects with similar knowledge and experience to those of the research sample were involved in the pilot.

### **Outcomes of the pilot**

The two-stage pilot process was instrumental in refining and confirming the survey instrument. Each teacher involved in the initial phase provided direct feedback on the design. Particular recommendations concerned (i) rewording of instructions to improve precision, and (ii) changes to the layout of the instrument to differentiate the elements of competence from the examples of practice.

The second phase confirmed the efficacy of the instrument design. Teachers completing the draft questionnaire expressed no difficulty in interpreting the questions. There was also no apparent general tendency to skip questions and, consequently, no changes to the questionnaire were deemed necessary. A copy of the instrument and supporting documentation is provided in Appendix 1.

### **Sampling and implementation**

Prior to piloting the survey, approval to conduct the survey was sought and gained from the University Ethics Committee and from the NSW Department of Education and Training (SERAP No. 00.25). The approval to undertake research in Government schools was based on

distributing copies of the survey in three metropolitan school districts. Planning for the survey was predicated on obtaining a sample size of approximately 400.

As more than 4000 teachers were employed in government primary and secondary schools in the three districts, it was decided that surveys would be sent only to teachers in selected schools. Schools were chosen randomly by selecting every third, fourth and fifth school from alphabetic lists of schools in each district. This method of selecting schools identified approximately twenty-four schools within each school district. The number of teachers in those schools was approximately 2500.

The surveys were distributed to schools in week two of term four in 2001. The surveys were accompanied by a letter to principals seeking their cooperation and support in distributing the survey to their staff, and encouraging their response. A postage paid return envelope was attached to each survey. A reminder letter was sent to each school principal two weeks after the initial dispatch and a further reminder after another two weeks. Surveys were to be returned by week eight of the term.

It is not clear from this distribution model, how many survey forms were distributed to teachers by principals. However, completed surveys were returned by 356 teachers.

## **INSTRUMENTATION AND SAMPLING FOR STUDY 2**

While Study 1 was concerned with assessing teachers' perceptions of professional standards, Study 2 involved investigating teaching practice through an analysis of comments in reports describing the practice of student and beginning teachers. This largely untested source of data provides a unique and rich description of teaching practice. Unlike other sources of ethnographic data, the text in the reports has not been filtered by or affected by biases of the investigators. Their richness arises from the fact that they represent the 'voices' of supervising teachers and principals.

Although the reports represent supervisors' and principals' descriptions of practice, it must be acknowledged that these descriptions are framed against specific criteria provided by the responsible agencies. Copies of the pro-formas provided by the University of New England and the criteria suggested by the NSW Department of Education and Training are provided in Appendices 2 and 3.

In the case of the student teacher reports, different criteria were provided for primary and secondary supervisors. In both cases the written comments were supplementary to grades

and comments on specific aspects of teaching. In the case of secondary student teachers, supervising teachers were asked to provide an overall comment. For primary student teachers, supervisors were asked to “comment on strengths and weaknesses in planning and evaluation, in classroom skills and strategies and professional attributes” (see Appendix 2, *Practice Teaching Report Form: Bachelor of Teaching and Graduate Diploma in Education: Practice Teaching Report Form*). These overall or summative comments were the subject of this analysis.

The reports on beginning teachers were prepared in response to specific criteria provided by the NSW Department of Education and Training. It is not mandatory, however, for principals to use these criteria for assessing beginning teachers. As these reports are central to Study 2, this study begins with a description of the sampling processes. This is followed by a description of the research methodology employed in the analysis of the reports.

### **Identification and preparation of reports to be sampled**

The reports accessed for this study included:

- practice teaching reports for primary and secondary teachers from the University of New England
- reports completed as part of the NSW Department of Education and Training’s process for certifying beginning teachers.

As indicated earlier, ethics approval to undertake the research was obtained from the University’s Ethics Committee subject to the removal of all information identifying particular students. Permission was also sought and granted to conduct the research from the NSW Department of Education and Training. This approval (SERAP No. 00.25) involved both permission to access these reports and to conduct the survey of teachers’ perceptions of the draft standards described in Study 1.

### ***The student teacher reports***

The student teacher reports were the final practice teaching reports of the 1998 University of New England teacher education student cohort. They included final-year practice teaching reports for primary student teachers (Bachelor of Education) and secondary student teachers (Diploma of Education). Recorded with each report was the gender of the student teacher, and whether they were trained to teach primary or secondary school students. Secondary student teachers were classified further into broad teaching areas:

- a humanities group (HUM) which included teachers of English, History, Languages and the Social Sciences
- a Mathematics, Science and Technology group (MST)
- a Creative and Practical Arts group (CPA)

The numbers of reports in each of the student teacher groups identified is shown in Table 3.1.

**Table 3.1: Distribution of final year practice teaching reports by group**

	Primary Student Teachers	Secondary Student Teachers	TOTAL
<b>Gender</b>			
Female	132	72	204
Male	25	45	70
<b>Subject</b>			
CPA		11	11
HUM		59	59
MST		47	47
<b>TOTAL</b>	157	117	274

These distributions are not representative of the gender or subject specialisations of all student teachers in NSW; rather they represent only the 1998 University of New England final year student teacher education cohort.

### ***Beginning teacher reports***

The beginning teachers' reports accessed in Study 2 comprised some 300 reports completed as part of the NSW Department of Education and Training's procedures for certifying beginning teachers. The application to access the beginning teacher reports requested the Department provide approximately 300 reports of teachers graduating from universities in 1999 and first appointed in 2000. There were to be approximately equal numbers of reports on primary and secondary teachers.

The reports were to be provided randomly by departmental officers from the more than 2500 reports compiled during that year. The sample was to include teachers from the full range of primary and secondary subject specialisations. The number of primary and secondary beginning teachers' reports in each of the identified groups is shown in Table 3.2.

**Table 3.2: Distribution of beginning teacher reports by group**

	<b>Primary Beginning Teachers</b>	<b>Secondary Beginning Teachers</b>	<b>TOTAL</b>
<b>Gender</b>	143	105	248
Female			
Male	25	55	80
<b>Subject</b>		26	26
CPA		60	60
HUM		48	48
MST		18	18
PDHPE		8	8
SP Ed			
<b>TOTAL</b>	168	160	328

Two further subject groupings over and above those recorded for student teachers, were included: a Personal Development, Health and Physical Education group (PDHPE), and a Special Education Group (SpEd). The identification of these groups provided an opportunity to explore group differences across school stages and across teaching content specialisations.

### ***Preparation of Reports***

All reports were received as photocopies. The text of each report was captured electronically and saved as a unique file. These were saved onto the hard disk of the researcher's computer. Copies of these files were stored on the University's computer system. The photocopies of the student teachers' reports were returned to the university. Those of the beginning teachers were retained by the researcher. Information about those who were the subject of each report was also recorded in the electronic file. This information was needed to support further analysis of possible differences amongst the reports arising from gender, stage of development

and teaching specialisation. In particular, note was taken whether the student or beginning teacher trained as a primary or secondary teacher, and, if secondary, their broad teaching area was recorded.

Electronic copies of each report were then reformatted in a form suitable for analysis by a computer program specifically developed to support qualitative analysis of data (Qualitative Solutions and Research Pty Ltd, 1997). All reports were introduced to the NUD\*IST program following procedures set out by Qualitative Solutions and Research Pty Ltd. (1997). A description of the methodology used to analyse the reports follows.

### **Identification of an initial coding structure**

Qualitative data provide “a source of well-grounded, rich descriptions and explanations of processes and identifiable local contexts.” This ensures “a quality of ‘undeniability’” as “[w]ords especially organised into incidents or stories have a concrete meaningful flavor that often proves to be far more convincing to a reader ... than pages of summarised numbers” (Miles & Huberman, 1994, p.1).

Issues concerning the amount of data to be collected by the researcher and the consequent questions of which data are more important were largely irrelevant to this study. The amount of the data was defined by the text of the reports. Methodological questions were primarily concerned, therefore, with how best to code the data for analysis.

According to Miles and Huberman (1995), coding is the essence of qualitative analysis. The codes provide “tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study” (p.56).

The initial phase of analysis, that is the determination of an initial coding structure, was critical for establishing the platform for future work. It was at this stage that questions of how to condense and order the information became paramount. Miles and Huberman (1995, p.55) writing about this stage of analysis noted “[a]s soon as the researcher begins to compile information challenges appear.” They recommended the use of a conceptual framework as “the best defense against overload” (p.55). In this study the underlying conceptual framework for analysis of the reports was a model based on headings or organising principles commonly used in the compilation of professional teaching standards.

The analysis of more than 600 pages of text in the reports commenced through the creation of a ‘start list’ of nodes (or codes) as suggested by Miles and Huberman (1995, p.58). The start list was compiled from analysis of a small number ( $n=10$ ) of the primary student teacher



reports, giving the process a more “codes-in-use flavour than the generic-code-for-many-uses generated by a prefabricated start list” (Miles & Huberman, 1995, p.58). The only nodes that were predetermined were those relating to the characteristics of the subject of the reports – gender, stage of development, and teacher training specialisation.

The start list of nodes arising from this preliminary analysis was presented as parents and children in a pilot tree structure using NUD\*IST. The branches were arranged according to the conceptual framework with parent nodes representing broad ‘domains’ of teaching. The domains identified initially covered issues such as ‘classroom management,’ ‘knowledge of teaching subject and content,’ ‘planning and preparation,’ ‘classroom management strategies,’ ‘teaching practices,’ and ‘professional relationships.’

The specific aspects of teaching identified in the reports were coded as ‘children’ in the node structure. For example, text such as:

preparation of lessons and programs showed considerable improvement over the four weeks

was coded at two nodes or aspects of teaching (children), i.e., *Planning of lessons* and *Planning units of work*, within the domain (parent) *Preparation and planning*.

### **Piloting of the coding structure**

The start list of nodes was piloted by coding a further ten reports from each of the remaining groups of reports: secondary student teachers; primary beginning teachers; and secondary beginning teachers. This pilot was designed to test the capacity of the start list of nodes to describe fully the capacities and attributes of teachers in other contexts, for example, secondary beginning teachers.

### ***Outcomes of the pilot***

This process of trialling and piloting the start-list of nodes confirmed those nodes identified initially, and identified new nodes, including some that did not fit well within the initial domain (parent node) structure. Subsequently, new domains were established requiring some realignment of existing nodes amongst these domains.

A significant issue that arose during the pilot phase of the coding was the extent to which the reports represented the practices of the teachers who were assessed. Taken as a whole, the nodes identified presented a detailed inventory of teaching practices. In contrast, the number

of nodes represented in a single report was inadequate for describing the competence of the individuals being assessed. This made it obvious that what was being coded was only those skills and capacities identified by, and valued by, the assessors.

This observation had several implications, not the least being for the tree structure of the nodes. Initially, the reports were coded to indicate the degree of achievement, or in some cases non-achievement, of particular competences. The range of levels of performance in the following comments would appear to support the use of such a strategy:

*Her class management was excellent; she dealt (coped) with any disruptive students promptly and effectively.*

*XXXX manages the children competently.*

*She has also shown improvement in her classroom management and her management of off-task behaviour.*

*Initially XXXX experienced some difficulty with classroom management.*

The relevance of reporting degrees of achievement including non-achievement, however, was questionable given the idiosyncratic way in which supervisors reported on particular aspects of knowledge, skills, understandings, and values. It was therefore determined that coding should reflect only references to particular aspects of teaching. This realisation also limited the scope for expansion of the node tree to investigate relationships between the nodes and subsequent theory building. Even so, the resultant coding provided a rich source of authentic information about teachers' practice.

### **Coding of the reports and presentation of results**

The process of analysis of the reports through coding was perceived as being an iterative process, with an on-going capacity to adjust the tree structure throughout the analysis to ensure representation of the full range of knowledge, skills, understandings and characteristics of the teachers who were the subject of the reports. This method of developing and modifying the coding as the analysis proceeded represented a more inductive or 'grounded' approach to the analysis as originally advocated by Glaser and Strauss (1967). However, as the number of reports analysed increased, the number of nodes reached a plateau and data redundancy occurred.

The results of the NUD\*IST analysis are presented in Chapter 6. An audit trail was developed in the reporting of results to enable the reader to identify the gender, stage of development, and

school stage and subject specialisation of those who were the subjects of the reports. A list of all codes used for the audit trail is provided below in Table 3.3.

**Table 3.3: Codes used to identify the subjects of supervisors' comments**

FIELDS							
Gender		Stage of Development		School Stage		Secondary Subject Specialisation	
Male	M	Student	St	Primary	P	Humanities i.e. English, History, Geography, Economics, Business, Languages	H
Female	F	Beginning teacher	B	Secondary	S	Mathematics, Science and Technology	Ms
						Creative and Practical Arts	C
						Personal Development, Health and Physical Education	Pd
						Special Education	Sp

For example, text from a report on a male, primary beginning teacher would carry the code (M<sub>male</sub>B<sub>beginning</sub>P<sub>primary</sub>N<sub>respondent number</sub>). Text from the report of secondary student and beginning teachers carried an additional code indicating teaching specialisation. For example, text from the report on a female student teacher trained to teach secondary English would carry the code (F<sub>female</sub>St<sub>student</sub>S<sub>secondary</sub>H<sub>humanities</sub>N<sub>respondent number</sub>). The reporting of audit trail information with text from the reports provided an important and additional level of information to support the findings and assist their interpretation.

## SUMMARY

The two studies described above were designed to provide significant information about teachers' perceptions of standards and their practices. Teachers' perceptions of a set of theoretical standards for beginning teachers at the end of their first year of teaching were investigated from three perspectives: *achievability*, *preparedness* and *development-priority*.

Teachers' practices were analysed from authentic data, that is, from their own descriptions of practice as revealed in assessment reports. Although the studies have different epistemological foundations, they are complementary.

## DATA ANALYSIS

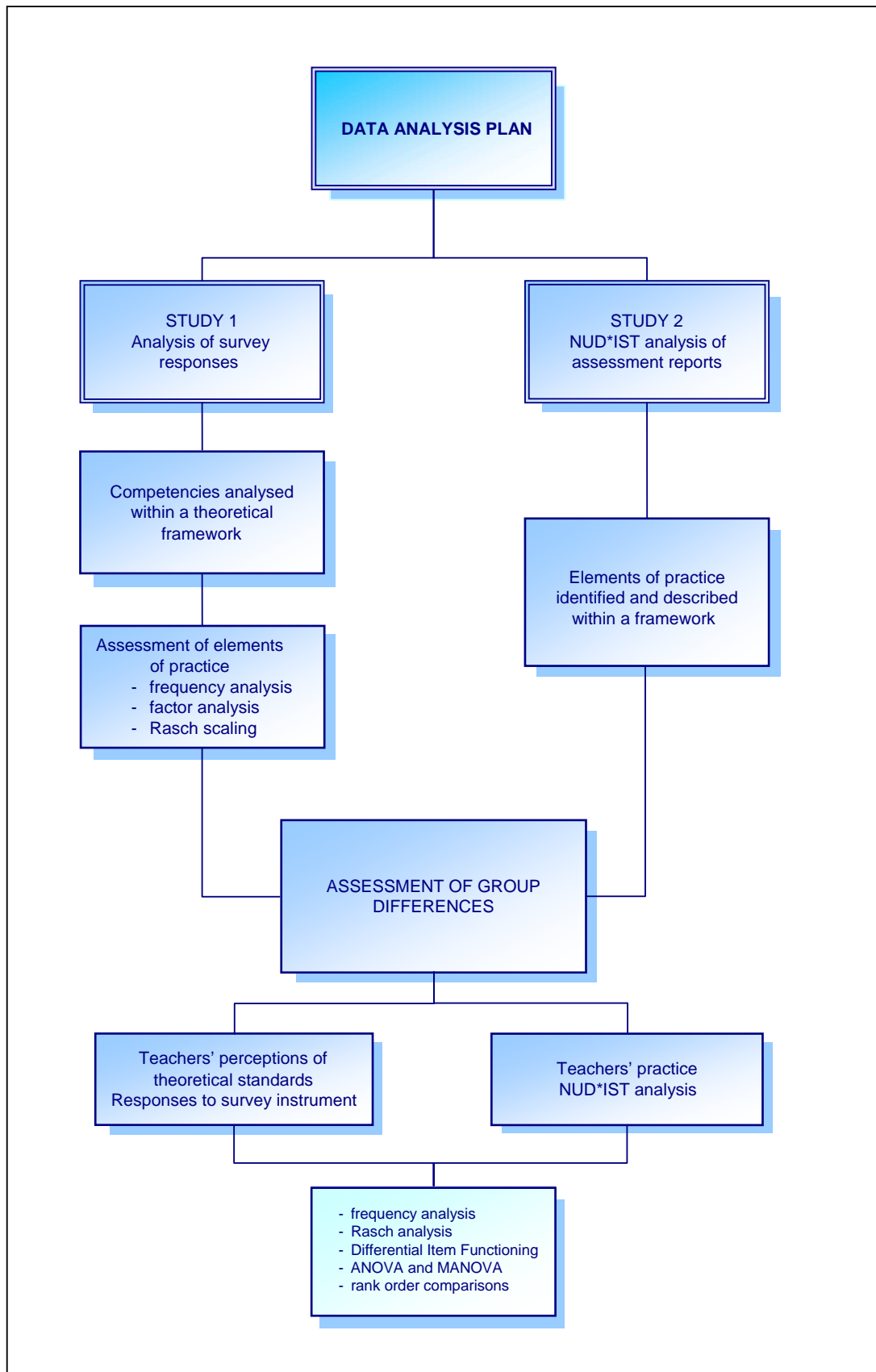
The studies described above provide both quantitative and qualitative data for analysis. Responses to the survey instrument, constitute the quantitative element (Study 1). The analysis of text of supervisors' reports on student and beginning teachers (Study 2) represents the qualitative component. The modes of data analysis provide opportunities to compare and contrast teachers' perceptions with practice. The decision to make use of two different research paradigms to investigate the research themes central to this investigation presented a number of challenges for data analysis. Figure 3.2 presents a schematic overview of the data analysis plan and techniques employed.

### Frequency analysis

Frequency analysis is a relatively simple technique that provides a means of analysing broad trends and relationships amongst data. In relation to Study 1, an analysis of cumulative frequency percentages has the potential to provide an indication of the level of agreement among respondents' ratings of survey items from the perspectives of *achievability*, *preparedness* and *development-priority*.

Dickson (2000) noted agreement amongst previous studies (Ansel, 1995; Ansel et al., 1987; Ansel & Webb, 1991; Jessup, 1994) of a cumulative percentage of 90 per cent agreement amongst respondents for the classification of performance dimensions. Items receiving the highest ratings (for example in the case of Study 1, this would mean ratings of 4 or 5) by 90 per cent of respondents were considered 'must-haves,' whereas items rated 3, 4, or 5 by 90 per cent of respondents were considered to be 'should-haves.' Items which did not meet these two criteria were deemed to be 'unimportant' or 'non-essential.'

The following classification categories were used in the present study to rate each perspective; *achievability* (high, medium, low), *preparedness* (very-well, well, poorly), *development-priority* (very-high, high and low). The use of the 90 per cent benchmark provided a proxy for validation of the theoretical standards developed by the expert panel.



**Figure 3.2: Data Analysis Plan**

This mode of frequency analysis was inappropriate for use with data from Study 2. The elements of competence coded using NUD\*IST are not amenable to scaling or rating. These data are indicative, however, of the importance teachers place on the practices identified. They are also indicators of how the practices of groups of teachers differ.

### **Factor analysis**

Factor analysis was identified as a mechanism for examining the relationships amongst the elements and hence for validating the structure of the theoretical standards. De Vaus (1995, p.257) characterised the basic aim of factor analysis as being to “examine whether on the basis of people’s answers to questions a smaller number of more general factors that underlie the questions can be identified.” For the purpose of this study, the elements of the theoretical standards are the variables from which underlying factors are sought. These factors are analogous to the domains in which the elements of the standards framework are presented. Since the ‘solution’ to the factor analysis is based on correlations between variables it “can produce factors that have nothing in common conceptually” (de Vaus, 1995, p.258). Nonetheless, factor analysis provides a mechanism for examining the soundness of the domain structure.

The present study applied Principal Component Analysis as described by Tabachnick and Fidell (1993, pp.372-445). Such analysis yields an empirical summary of the data set, identifying a limited number of orthogonal components amongst the variables. Maximum variance is extracted from the data set, since common, unique and error variance is mixed into the components. This variance represents the sum of the values in the positive diagonal of the correlation matrix. Moreover, principal component analysis duplicates exactly the standard scores of the observed variables through a linear combination of components where all components are retained.

The principal components derived from the analysis were compared in the analysis with the domains set out in the theoretical standards framework.

### **Rasch Scaling and Analysis**

Rasch scaling was fundamental to both Study 1 and 2, in particular, to the evaluation of the construct validity and order within the frameworks presented for analysis (Bond & Fox, 2001, p.26). The Australian Council of Education Research’s (ACER) *QUEST* software (Adams and Khoo, 1996) incorporates an implementation of the Rasch latent score model which converts

ordinal scores to interval scores for direct analysis (Burton & Miller, 1998; Dickson, 2000; Wright & Linacre, 1989).

The model is able to provide estimates of test item difficulty and respondent ability. In the case of Study 1, item scores provide a measure of the *achievability*, *preparedness* and *development-priority* of each element of the standards. Respondent ability, however, corresponds to a measure of each teacher's overall perceptions of the standards from each perspective. In Study 2 item and case estimates correspond, respectively, to the extent to which specific aspects of teaching practice are represented within the reports and to the value teachers attribute to these aspects of practice.

Estimates of item difficulty and respondent ability are expressed on a logit scale, and hence, as an interval/ratio measure for polytomously scored items (Wright & Masters, 1982). The resulting estimates can be used to investigate through subsequent empirical analysis techniques, differences in the perspectives of the different groups of teachers identified.

A constrained version of Rasch's Partial Credit Model, the Rating Scale form was employed for both studies. The Rating Scale model is relevant to the analysis of attitudinal items (Andrich, 1980; Wright, 1998; Wright & Masters, 1982) and is recommended for use where items share the same rating scale structure (Wright, 1998). Dickson (2000) noted three assumptions underlying the model. First, the model assumes the same set of rating points is used with every item. Second, the relative difficulties in the steps within each item should not vary, and third the magnitude between adjacent points on the Likert scale is not equal. These assumptions are met for Studies 1 and 2.

Within the Rasch Rating Scale model, the probability of a person  $n$  responding to category  $x$  of item  $i$  is given by:

$$\pi_{nix} = \frac{\exp \sum_{j=0}^x [\beta_n - (\delta_i + \tau_j)]}{\sum_{k=0}^m \exp \sum_{j=0}^k [\beta_n - (\delta_i + \tau_j)]}$$

where  $\tau_0 \equiv 0$  so that  $\sum_{j=0}^0 [\beta_n - (\delta_i + \tau_j)] = 1$

Adams and Khoo (1996) noted that when this model is applied to the analysis of a rating scale, a position on the variable  $\beta_n$  is estimated for each person  $n$ , a scale of  $\delta_i$  is estimated for each item  $i$ , and  $m$  response 'thresholds'  $\tau_1, \tau_2, \dots, \tau_m$ , are estimated for  $m+1$  categories.

The model can only be applied where data meet the criteria noted above. Four statistics are available to indicate the suitability of this choice of model to the data. These are:

1. fit statistics for both item and case or person estimates. These are provided as unweighted (outfit) and weighted (infit) residual based statistics. These are expressed by the *QUEST* software as a mean square and *t*-value. Ideally, the expected values of the mean squares is approximately 1.0 and the expected values of the *t*-values is approximately zero when data are compatible with the model.
2. an item fit map produced by the *QUEST* software indicates the infit mean square for each item. Two vertical dotted lines on the graph bound items with acceptable values. The lines represent arbitrary measures of 30 per cent above and 30 per cent below the expected item values (Adams & Khoo, 1996). The graph provides a visual representation of the degree of homogeneity in the data including the level of parameter fit in the model for each item. An illustration of an item fit map from the data in Study 2 is presented in Figure 3.3.

Item Fit		23/ 8/ 2 21:51					
all on onea (N = 295 L = 6 Probability Level= .50)							
INFIT							
MNSQ	.63	.71	.83	1.00	1.20	1.40	1.60
1 item 1		.*				.	
4 item 4		.		*		.	
7 item 7		.		*		.	
10 item 10		.			*	.	
13 item 13		.			*	.	
16 item 16		.				*	.

**Figure 3.3: Example of Rasch item fit map**

These data signify a single construct. Any points plotted to the right of the vertical lines would, however, be regarded as a reversal and not fit the construct. Points plotted to the left would be representative of items of over fit of the construct.

3. the issue of unidimensionality is supported empirically by an *item consistency index*. The index measures the degree of homogeneity of the items, and is considered to be analogous to Cronbach's alpha (Adams & Khoo, 1996, pp.45, 93). This measure, taken together with the infit-mean square map (Figure 3.3) was used to determine the validity of the theoretical standards frameworks.
4. the degree of success in defining a construct or continuum is dependent upon the extent to which the items and persons are separated (Wright & Masters, 1982). The



*reliability of estimates*, provided by the software as a function of the Rasch analysis indicates the degree of separation of items and persons. The estimate, which is the proportion of the observed variance that is considered true (Adams & Khoo, 1966) represents the likelihood of an item's or person's position on the continuum remaining constant. Estimates above 0.7 are considered acceptable to enable firm conclusions about the relative positions of each item and person.

The *QUEST* software was used to determine item estimates for both the response to the survey instrument and the NUD\*IST output which was treated as dichotomous data. *QUEST* was used also to investigate how items functioned with reference to the different groups sampled. A general comparative routine within *QUEST* was used to calculate and report a range of item biases, including Mantel-Haenszel tests of Differential Item Functioning for dichotomous items, and tests of parameter invariance for both case and item estimate parameters (Adams & Khoo, 1996, p.49).

### **Parametric Analysis – MANOVA and ANOVA**

As noted earlier, item and case estimates produced through *QUEST* are generated in the form of interval scores. Such scores are able to be used in parametric tests to determine the significance of differences between teachers' perspectives (*achievability, preparedness* and *development-priority*) in Study 1 and between groups of teachers. Similar analysis is possible to determine differences amongst groups of teachers assessed in Study 2.

#### ***Differences in teachers' perspectives – Study 1***

Data from all three perspectives are submitted to a single Rasch Scale to obtain item estimates for analysis of perspective differences. This initial step converts ordinal data from the Likert scales into interval data for further analysis. Each item and corresponding item estimate are sorted into perspectives prior to submitting mean and standard deviations of item estimates to a paired sample *t*-test using the SPSS package. Given a significant difference, regression analysis is implemented to detect which items contribute to the significant differences.

#### ***Group differences – Studies 1 and 2***

The analysis of group differences was pursued at several levels. In both studies, one subdivision was axiomatic, namely, the division between primary and secondary teachers. This is also the basis of an important theoretical question as to whether primary and secondary teachers differ in their perceptions or practices.

Differences in the constitution of the samples for the two studies negate other common subdivisions. Of importance in Study 1, however, are groupings based on the age and experience of the respondents, the position of the respondent and any supervisory or mentoring experience. Important groupings in Study 2 are the stage of development of the student and beginning teachers and the context of their teaching, namely, primary or secondary schools.

The data for analysis of differences are item estimates derived from Rasch analysis. Group differences are assessed initially through MANOVA, using the SPSS package. If a significant difference is found, a post hoc analysis is performed or in the case of binary groupings, Differential Item Functioning can be used to determine where group differences arise.

### ***Summary***

The analytic techniques described above provide a basis for analysing the qualitative and quantitative data arising from each of the studies. They were selected on the basis of their relevance and functionality for extrapolating findings pertinent to the research themes identified in Chapter 2. The use of multiple techniques provides an opportunity to confirm findings through triangulation.

In particular, the use of Rasch analysis and Differential Item Functioning provides an innovative methodology for analysing group differences arising from ordinal and qualitative data. The results of the analytic processes undertaken in this study are described in the following chapters.

## **EVALUATION OF THE RESEARCH DESIGN**

The application of distinct studies with paradigmatically different methodologies within the overall research methodology provides challenges and opportunities. The challenges are conceptual. They involve consideration of how to apply quantitative methodologies to the results of a qualitative study that is concerned with identifying ideas and issues, or to put it more simply, how can numerical or qualitative methods be applied to data that are essentially verbal? The opportunities concern the possibility of enhancing the breadth of findings, and for providing a greater level of confidence in the findings with the potential to extrapolate them to teaching practice.

This section considers the potential impact of extraneous variables on the design, and in particular, the delineation of techniques used to control for factors outside of the research design. These include a range of idiosyncratic variables associated with the sample including the teaching context of the participants, the qualifications, training and preparation of all participants in the study, be they respondents to the survey, students and beginning teachers being assessed, or the supervisors responsible for assessment reports.

The conceptual issues that need to be considered arise from the different philosophical stances underpinning the two ostensibly dichotomous research designs, that is, traditional quantitative (experimental and quasi-experimental) and qualitative (naturalistic and constructivist) designs. As noted earlier, these are not mutually exclusive but their dissimilar heritage and purpose are such that different evaluation criteria were applied in assessing the quality and integrity of each study. Traditional experimental research is generally evaluated against issues of 'validity' and 'reliability.' The analogous concepts of 'trustworthiness' and 'authenticity' are used to evaluate qualitative studies. A discussion of how these concepts are applied to the studies that constitute the research design follows.

### **Quantitative Paradigm**

The validity of the study is considered from two perspectives: internal and external validity. Merriam (1995) noted that internal validity is as a response to the question: "[a]re we observing or measuring what we think we are measuring?" (p.53). Whereas, external validity represents the "extent to which the findings of study can be applied to other situations" (p.57).

#### ***Internal validity***

The question posed by Merriam about internal validity is concerned with whether the results of an experiment are due to the treatment rather than some extraneous variables. Cook and Campbell (1979, pp.51-55) defined 13 types of extraneous variable that should be controlled if an experiment is to maximise internal validity. Variables not applicable to the design of this study include history, maturation, statistical regression, testing, instrumentation, mortality, diffusion or imitation of treatments, and compensating equalisation of treatments. Two threats to the internal validity of the present design are instrumentation and sampling.

#### **Instrumentation**

Data gathering instruments may lead to erroneous findings if there is a mismatch between what the instrument measures and what it purports to measure. Clearly, the instrument in this study

was designed to measure teachers' responses to questions about a particular set of theoretical teaching standards.

Although it could be argued that the findings of Study 1 concern only the set of theoretical standards used for the study, issues relating to the efficacy of the instrument were addressed at two levels. First, reassurance of the relevance of the standards to teachers in New South Wales was provided through the process of designing the theoretical standards. Second, relevance of the standards to teachers in New South Wales was not questioned during the instrument development, specifically during the piloting process.

### Sample selection

The selection of subjects for the study can potentially bias results. Sample selection was considered by Campbell and Stanley (1963) from an experimental perspective. The issue of selection of the subjects and the use of specific subgroups within the sample makes issues of sample bias relevant to this study.

To address potential problems with sample bias, all possible subjects within a selection of schools were targeted. Global sampling of all subjects within those schools was intended to minimise the chance of sampling bias. However, as the surveys were distributed during term 4, when teachers were preoccupied with end-of-year assessment and reporting, only 356 teachers responded to the survey. Although this sample size was sufficient to yield statistically valid results, it was not sufficient to reliably and validly test for sample bias through cross-sectional sampling across groups. Even without cross-sectional sampling, the small sample size of some of the groups identified for comparison purposes, required caution in the interpretation of some of the statistical analyses.

### ***External validity***

As noted by Merriam (1995) external validity concerns the extent to which results of a study can be applied in other contexts or to other populations. The two main components of external validity identified by Bracht and Glass (1966) are population validity and ecological validity.

### Population validity

According to Borg and Gall (1989) this criterion is concerned with the extent to which results of an investigation can be generalised from the experimental sample to a larger group of subjects. There are two aspects to this criterion: the extent one can generalise from the experimental sample to a defined population; and, the extent to which the personal variables of sample subjects interact with treatment effects (Borg & Gall, 1989).

In relation to the first, standard practice in conventional research design is to randomise the sample and to apply the results to a specific population. Borg and Gall (1989) considered the application of findings from such studies to be risky. In the present study, global sampling of subjects in selected schools was undertaken to avert this threat. However, the relatively small response to the survey instrument raises the potential for a degree of self-selection of the subjects. There is also a question of whether the schools sampled are representative of all schools within the state. The schools sampled are all from geographically self-contained metropolitan locations. While teachers in these schools may be broadly representative of all schools in the state this conclusion has not been tested within this study.

The second aspect of population validity is not relevant to this study as treatments were not part of the design.

#### Ecological validity

This aspect of validity concerns the “extent to which results of an experiment [investigation] can be generalized from the set of environmental conditions created by the researcher to other environmental conditions” (Borg & Gall, 1989, p.650). The application of this aspect of validity to the present study is somewhat problematic given factors contributing to this threat are associated with more traditional experimental designs. From the perspective of this study, issues of ecological validity are concerned with the relevance of the particular set of theoretical standards to teachers in New South Wales. It would be quite inappropriate to suggest that findings about teachers’ perceptions of this particular set of theoretical standards are applicable to all other sets of theoretical standards. Comparisons between findings in relation to different sets of standards would need careful examination. Comparisons would be sustainable, however, if teachers working in other contexts were expected to meet similar standards of practice.

#### **Reliability**

Reliability is concerned with the extent to which one’s findings will be found again (Merriam, 1995, p.55). Reliability in traditional experimental research has to do with replication of results from repeated measures of a phenomenon. Merriam noted, however, that the “notion of reliability in the social sciences is problematic” (p.55) because studying people is not like studying scientific measures of, for example, length or mass. Issues of reliability are not relevant to Study 1 as they would be concerned with investigation of the reliability of repeated measures of opinion, which commonly, is a variable phenomenon.

Reliability is an issue, however, for the qualitative facets of this research, but the question is different. In qualitative research, replication of a qualitative investigation may not yield the same results as there may be multiple interpretations of particular data. The issue is not therefore whether the results of one study are the same as the results of subsequent studies but “whether the results of a study are consistent with the data” (Merriam, 1995, p.56). The following section sets out how this question is examined within the qualitative paradigm.

### **Qualitative Paradigm**

As the above discussion indicates, the primary criteria used to judge the quality of traditional experimental research designs, i.e., validity and reliability, are incompatible with the qualitative research design. Increasingly, criteria relating to the ‘trustworthiness’ of a study are being used to judge the quality of qualitative or naturalistic studies.

#### ***Trustworthiness***

Lincoln and Guba (1985) identified four elements of trustworthiness: credibility, transferability, dependability and confirmability. These elements are discussed with relevance to Study 2 below.

#### **Credibility**

Credibility is analogous to internal validity in traditional scientific research (Guba, 1981). It is concerned with how confident the researcher is in the accuracy of judgements (Hippis, 1993). Criteria identified by Lincoln and Guba (1985, p.302) to establish credibility include ‘prolonged engagement,’ ‘persistent observations,’ ‘triangulation,’ ‘member checking,’ ‘peer debriefing’ and ‘progressive subjectivity.’ As the researcher did not have access to the subjects of the reports or their authors, member checks were not relevant to this study.

*Prolonged engagement* allows the researcher to become familiar with the nature of the phenomenon under investigation. The researcher met this criterion through extensive teaching experience, long-term involvement with, and research on, professional teaching standards, and extensive involvement in a major review of teacher education. This engagement is consistent with the supposition advanced by Lincoln and Guba (1985, p.302), “It seems likely that unless the inquirer began as an accepted member of the group or agency being studied, distortions can never be overcome ... .”

*Persistent observation* increases the researcher’s capacity to “identify those characteristics and elements in the situation that are most relevant to the problem or issue being pursued and

focusing on them in detail” (Lincoln & Guba, 1985, p.304). It enables the researcher to be sufficiently engaged with the subjects “to identify the salient factors” (Hipps, 1993). This criterion has been met in relation to Study 2 through analysis of all available reports ( $n=603$ ). The achievement of data redundancy during the analysis was indicated by repetition in the aspects of knowledge, skills, understandings and capacities of teachers identified. Importantly as the analysis progressed, the number of new areas being identified declined to a point where no new areas were apparent.

*Triangulation* is seen as an integral part of qualitative design (Borg & Gall, 1989; Cohen & Manion, 1994; Hakim, 1987; McFee, 1992). Its purpose is to enable multiple measures to enrich the credibility of research findings. McFee (1992) discussed two forms of triangulation. Triangulation ‘between’ methods involves the use of a range of approaches to present complementary data to reduce the risk of unsubstantiated findings. This approach enables the outcomes of one approach to be validated in terms of another approach. Triangulation ‘within’ a method brings to bear two or more viewpoints on a particular occasion with a view to characterizing the situation from several viewpoints. This second perspective avoids the question of the relationship between methods and issues (whether they are both investigating the same thing) but raises questions about the primacy of particular views.

Triangulation between methods was not attempted in Study 2. While large numbers of reports were accessed, these represent the perspectives of teachers generally. While it could be argued that these represent a range of perspectives to support triangulation within a method, that assumption may be unsustainable. The use of triangulation to ensure credibility of findings appears therefore not to be relevant to the design of Study 2.

*Peer debriefing* enables the researcher to review his/her findings, analyses, and conclusions with a disinterested peer (Hipps, 1993). Such reviews give the researcher alternative or different perspectives on the study. In the context of Study 2, peer debriefing provided opportunities to discuss issues about appropriateness of the emerging coding structures, and about how particular text should be coded.

*Progressive subjectivity* acts to minimise and negate the influence of researchers’ preconceived ideas and perceptions on emerging findings. Progressive subjectivity which may occur during peer debriefing requires on-going and continuous reflection on the progress of the research. On-going review and reflection occurred during the conduct of Study 2 through peer debriefing sessions in which the researcher was required to justify coding decisions and relationships between children and parent nodes.

### Transferability

The qualitative paradigm rejects the traditional experimental research view that reality is fixed and independent of the observer, and with it the possibility of generalisations (Lincoln & Guba, 1985). In the qualitative paradigm the concept of generalisation is replaced by that of the 'working hypothesis' and 'thick description.'

*Working hypotheses* develop as the work proceeds and are open to revision during data gathering. Hipps (1993) observed that since data collection is context-specific it is incumbent upon the researcher to specify the contexts in which working hypotheses are developed. It is not up to the researcher to provide an 'index of transferability' but rather to provide a description of the context that makes transferability of the working hypotheses valid (Lincoln & Guba, 1985, p.316).

*Thick descriptions* imply the provision of extensive information about the research context. Such information facilitates judgements about the "overlap and match" (Hipps, 1993, p.9) between studies and enables transferability of the findings from one context to another.

Study 2 explicitly addresses these two criteria. The rationale, context, design and data analysis procedures are described in detail to meet the required rigour of a doctoral thesis. These descriptions provide a basis for subsequent investigators to transfer design decisions and hypotheses to other research settings.

### Dependability

Dependability has to do with the stability of the data (Guba, 1981). Two methods proposed to ensure dependability are the 'overlap method' and the 'audit trail.' The overlap method which uses different techniques to generate data and derive results has been advocated to overcome weaknesses in individual techniques (Guba, 1981). An audit trail is concerned with ensuring the process of collection of the data is consistent with good practice.

Both of these methods are irrelevant for determining dependability of the data in Study 2 as the study involved a post hoc analysis of existing textual data. Nonetheless, issues of dependability of the data were deemed to have been met for this study given that the researcher was not involved in its capture.

### Confirmability

This criterion involves demonstrating that "the information collected during a study and the ways it is interpreted are not functions of the researcher's biases" (Hipps, 1993, p.10). Lincoln and Guba (1985) suggested that the primary way of ensuring confirmability of the data is



through an audit process. This form of audit differs from a dependability audit which is concerned with the processes by which data were collected. A confirmability audit responds to the question of whether data can be tracked to their original source and to any inferences made.

The confirmability audit trail used in this study was described briefly in the description of the research design. Its implementation is apparent in Chapter 6.

### **Summary**

In conclusion, methods used to establish design rigour are dependent upon the research elements being assessed. The threats to the quality of both the quantitative and qualitative aspects of the research design have been addressed from their relevant theoretical perspectives. Implicit in this discussion has been the need to acknowledge threats to the design regardless of the research paradigm.

## **CONCLUSIONS**

The context for this investigation is the NSW Department of Education and Training, the largest school system and employer of teachers in Australia. Specifically, the investigation set out to explore and clarify the relationship between teachers' perceptions about professional practices and to compare these with standards derived from descriptions of teachers' work.

A number of considerations needed to be addressed in carrying out this research, particularly issues relating to instrument design and collection and analysis of data. The absence of clearly defined teaching standards for teachers in NSW was a significant constraint on the investigation. Likewise, although the text of reports on student and beginning teachers provided a rich source of information about teaching practice, their subsequent analyses raised significant issues about the relevance of the reports to the practices of individual teachers. These issues provide qualifications to subsequent analysis of the data from the two studies and to the generalisability or transferability of any findings from the investigations.

The dual nature of the research design encompassing two paradigms necessitated the integrity of the design be evaluated against quantitative and qualitative criteria. While in general, the evaluation showed the research design was appropriate to the investigation, specifically it identified a number of criteria relevant to the investigation and demonstrated strategies integrated within the design to ensure the quality of the research and its findings.

The investigation produced a range of qualitative and quantitative data for analysis. This diversity of data dictated a range of data analysis techniques. These include cumulative frequency analysis, plus parametric procedures such as *t*-tests, and analysis of variance (ANOVA and MANOVA). Conversion of ordinal and nominal data arising from the Likert scales in Study 1 and nominal data in Study 2 to interval scales through Rasch analysis enabled subsequent more detailed analysis of the data. Central to the analysis of the qualitative data was the identification of knowledge, skills, understandings and capacities expected by supervisors and principals of student and beginning teachers in New South Wales.

The following chapters present the results of the data analysis. Specifically, Chapter 4 deals with teachers' perceptions of the theoretical standards in terms of teachers' perceptions of their *achievability*, *preparedness* and *development priority*. Chapter 5 is concerned with the differences in teachers' perceptions of the theoretical standards. Chapter 6 describes outcomes of the qualitative analysis of supervisors' reports of the knowledge, skills, understandings and capacities of student and beginning teachers. Finally, Chapter 7 is concerned with identifying patterns of supervisors' comments as well as differences between the comments of specific groups of supervisors.

## **CHAPTER 4**

### **ANALYSIS OF TEACHERS' PERCEPTIONS OF THEORETICAL STANDARDS**

Bureaucratic solutions to problems of practice will always fail because effective teaching is not routine, students are not passive, and questions of practice are not simple, predictable, or standardized. Consequently, instructional decisions cannot be formulated on high then packaged and handed down to teachers.

(Darling-Hammond, 2001, p.67)

#### **INTRODUCTION**

The previous chapter set out the design for the two studies that make up this research investigation. This chapter commences the analysis of responses to the survey instrument which constitutes Study 1. It sets out how the teachers surveyed perceive each element of a set of theoretical standards in terms of:

- its *achievability* by beginning teachers completing their first year of teaching;
- the *preparedness* of beginning teachers to meet it; and
- the *development-priority* they would ascribe to it.

Possible variation between the perceptions of different groups of teachers is described in the next chapter.

In the discussion of results from the analysis which follows in this chapter, the particular elements of the standards are designated only by their broad descriptors. In some instances it is difficult to describe the complexity of teaching practices in brief statements, and hence, some of the descriptors may appear to be relatively inadequate. To ensure ease of interpretation, teachers completing the survey instrument, were provided with examples of the range of practices perceived as being relevant to each element of the standards.

The survey instrument also represented the elements within seven teaching domains. These also provided a further context for teachers' responses

Appendix 4 provides a fold out of the theoretical standards to assist the reader with interpretation of the analysis and presentation of results. Results presented in this chapter have two aims. These are:

1. the analysis of teachers' perceptions of the theoretical standards from three perspectives:
  - element *achievability*
  - element *preparedness*
  - element *development-priority*, and
2. investigation of the possible relationships between these perspectives.

### **THE RELATIVE *ACHIEVABILITY* OF ELEMENTS OF THEORETICAL STANDARDS**

The process for development of the set of theoretical standards described in Chapter 2 was based on an assumption that the elements of the standards were all necessary for effective teaching. There was no assumption, however, that the individual elements of standards were of equal relevance to teachers' roles. Similarly, there was no assumption that individual elements of the standards were of equal *achievability*, *preparedness* and *development-priority*.

Discussions in this section are concerned with the first question of the survey instrument: *To what extent are these expectations of teachers realisable?* This is interpreted as ranking the *achievability* of the elements of the standards.

Four techniques are suitable for analysing responses to the *achievability* question of the survey instrument. These are frequency analysis, factor analysis, Rasch analysis and MANOVA. Although a single MANOVA was undertaken across the three perspectives, the results for each perspective are treated separately within each section.

#### **Percentage Frequency Analysis – *Achievability***

The use of cumulative frequencies to analyse responses to the survey instrument was described in the previous chapter. This discussion noted the general acceptance of a benchmark of 90 per cent for cumulative frequencies for classifying responses to Likert-type responses to surveys. Table 4.1, below, presents such a classification of teachers' perceptions of the *achievability* of elements of the standards based on this benchmark. Throughout tables in this chapter, elements within each domain have been coloured consistently to identify the domains and to aid the interpretation of results.

**Table 4.1: Cumulative frequency analysis classification of elements with respect to *Achievability***

Domain	Elements of Competence	<i>Achievability</i>		
		Low	Medium	High
1.1	Demonstrate high levels of care and commitment to their students		✓	
1.2	Treat all students justly and equitably, and with an appropriate sense of good humour		✓	
1.3	Know, critically review, and use as appropriate, a range of educationally sound theories	✓		
1.4	Recognise that they can enhance students' potential as lifelong and independent learners by enabling them to take responsibility for their own learning		✓	
1.5	Respect the dignity and individualism of students		✓	
1.6	Ensure that their goals for student learning are consistent with those set out in relevant state and nationally agreed objectives such as, for example, the Board of Studies syllabuses and the Common and Agreed National Goals for Schooling in Australia	✓		
2.1	Demonstrate their knowledge, skills, understanding and values of the subjects(s) they teach		✓	
2.2	Model the values of the scholar-teacher	✓		
2.3	Are advocates for the subjects they teach		✓	
2.4	Maintain the currency of their content knowledge	✓		
3.1	Are able to communicate to others the knowledge, understanding, skills and values of the subjects they teach		✓	
3.2	Create and support learning within their classrooms		✓	
3.3	Manage the learning environments in which they work		✓	
3.4	Are flexible in their approach to teaching		✓	
3.5	Plan for individual student's learning	✓		
4.1	Understand that the primary purpose of assessment is to provide information on student achievement and progress to inform future teaching and learning		✓	
4.2	Integrate student assessment and reporting into teaching and learning		✓	
4.3	Convey meaningful and useful information to students and parents.		✓	
5.1	Establish classroom management strategies that support student learning		✓	
5.2	Create safe and secure environments for young people		✓	
6.1	Continuously reflect on their practice and its effect on student learning	✓		
6.2	Are lifelong learners	✓		
6.3	Take responsibility for their own professional growth	✓		
7.1	Seek to create learning communities	✓		
7.2	Demonstrate educational leadership	✓		
7.3	Sustain learning through their capacity to promote change and innovation	✓		
7.4	Enhance the professional status of teachers within the community	✓		

Elements were designated to have 'high *achievability*' if 90 per cent or more of respondents rated them 4 or 5: 'medium *achievability*' if 90 per cent or more of respondents rated them 3, 4 or 5: and, 'low *achievability*' if they did not meet either of these criteria. Overall, no element of the standards was classified as having 'high' *achievability*. Fifteen were classified as having 'medium' *achievability* and 12 were classified as having 'low' *achievability*.

In two domains, all elements were classified as having 'medium' *achievability*, that is they were assigned a neutral or higher ranking (3, 4 or 5) by more than 90 per cent of respondents. These were domain 4: *Assessing and reporting the learning outcomes of students* and domain 5: *Managing safe, secure and productive learning environments*. There were two domains also, where all elements were classified as having 'low' *achievability*: domain 6: *Reflecting and continuously enhancing their own learning* and domain 7: *Leadership in communities of learning*.

While this classification provides a rudimentary form of analysis of the *achievability* of each element of the standards, it is incapable of determining any hierarchy amongst teachers' perceptions of *achievability* of the elements of the standards or examining the reasons for teachers' ranking of the elements. Even so, differences in these classifications point to the potential for the existence of a hierarchy of *achievability* amongst the elements. Consistent classifications within some domains imply teachers perceive the theoretical domain structure to be appropriate.

### **Factor Analysis**

Factor analysis was applied to teachers' *achievability* ratings of each element of the theoretical standards to investigate the existence of statistical associations between them. The goal of this analysis was to see if it would collapse the relatively large number of variables, that is, elements of the standards, into a small number of empirically derived components that could be compared with the domains of the theoretical standards framework.

This analysis was undertaken with the SPSS statistical package. The Varimax rotated solution identified five components that accounted for 59.08 per cent of the total variation. The eigenvalues and percentage variation for each of the five components of the factor solution are reported in Table 4.2.

The cumulative variation of 59.08 per cent explained by the five components is close to the value of 60 per cent generally used as the benchmark for acceptance of factor analysis

solutions. Component 1 accounted for the great majority (40.87 per cent) of this variation. The remainder of the variation is relatively evenly distributed across the other four components.

**Table 4.2: Eigenvalues and variance of principal components derived from *Achievability* ratings**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.03*	40.87	40.87	11.03	40.87	40.87	3.89	14.39	14.39
2	1.62	5.99	46.85	1.62	5.99	46.85	3.34	12.38	26.77
3	1.15	4.26	51.11	1.15	4.26	51.11	3.27	12.09	38.86
4	1.11	4.12	55.23	1.11	4.12	55.23	2.76	10.20	49.06
5	1.04	3.86	59.08	1.04	3.86	59.08	2.71	10.02	59.08

\*All numbers rounded to 2 dec. places

Elements of the standards within each of the components identified within the five-factor solution are presented in Table 4.3 with their variable loadings. The five components or factors constitute a reorganisation of elements from the original seven domains. Although the components have been derived statistically, there appears to be a conceptual basis to each.

Those elements of factor 1 (i.e., those contributing most to the variance) are concerned with *Facilitating student and personal learning*. This factor represents a partial amalgamation of elements from domains 2, 3, 5 and 6.

Factor 2 is represented by the elements of domain 1, that is, *Commitment to students and their development*. Factor 3 includes elements related to *Planning, assessing and reporting*. Factor 4 comprises a range of elements of the standards concerned with *Teachers' leadership* while factor 5 involves *Knowledge of subject content*.

The factor analysis solution suggests the existence of a statistically valid alternative conceptual framework of five domains for organising the elements of the standards to the seven domains identified in the theoretical standards. It could be argued this solution is more convincing than the original structure given that it is derived from an analysis of teachers' perceptions rather than the arbitrary judgements and decisions of the members of the group responsible for developing the theoretical standards. Importantly, the factor analysis solution confirmed the grouping of elements in three of the original domains. The clustering of these elements by the factor analysis represents a powerful affirmation of the relevance of these domains.

**Table 4.3: Elements of standards by *Achievability* - Factor analysis solution**

Elements of Competence		Loading	Factor	
2.4	Maintain the currency of their content knowledge	0.457	1	Facilitating student and personal learning
3.2	Create and support learning within their classrooms	0.465	1	
3.3	Manage the learning environments in which they work	0.424	1	
3.4	Are flexible in their approach to teaching	0.510	1	
5.1	Establish classroom management strategies that support student learning	0.468	1	
6.1	Continuously reflect on their practice and its effect on student learning	0.625	1	
6.2	Are lifelong learners	0.716	1	
6.3	Take responsibility for their own professional growth	0.728	1	
1.1	Demonstrate high levels of care and commitment to their students	0.620	2	Commitment to students and their development
1.2	Treat all students justly and equitably, and with an appropriate sense of good humour	0.734	2	
1.3	Know, critically review, and use as appropriate, a range of educationally sound theories	0.660	2	
1.4	Recognise that they can enhance students' potential as lifelong and independent learners by enabling them to take responsibility for their own learning	0.496	2	
1.5	Respect the dignity and individualism of students	0.668	2	
1.6	Ensure that their goals for student learning are consistent with those set out in relevant state and nationally agreed objectives such as, for example, the Board of Studies syllabuses and the <i>Common and Agreed National Goals for Schooling in Australia</i>	0.558	2	
3.5	Plan for individual student's learning	0.509	3	Planning assessing and reporting
4.1	Understand that the primary purpose of assessment is to provide information on student achievement and progress to inform future teaching and learning	0.744	3	
4.2	Integrate student assessment and reporting into teaching and learning	0.682	3	
4.3	Convey meaningful and useful information to students and parents	0.655	3	
5.2	Create safe and secure environments for young people	0.414	4	Leadership
7.1	Seek to create learning communities	0.557	4	
7.2	Demonstrate educational leadership	0.551	4	
7.3	Sustain learning through their capacity to promote change and innovation	0.705	4	
7.4	Enhance the professional status of teachers within the community.	0.707	4	
2.1	Demonstrate their knowledge, skills, understanding and values of the subjects(s) they teach	0.655	5	Knowledge of subject content
2.2	Model the values of the scholar-teacher	0.580	5	
2.3	Are advocates for the subjects they teach	0.775	5	
3.1	Are able to communicate to others the knowledge, understanding, skills and values of the subjects they teach	0.508	5	

Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalisation.  
 Rotation converged in 10 iterations.



The two analyses presented thus far, support different hypotheses about teachers' perceptions of the theoretical standards. The percentage frequencies indicated differences amongst teachers' perceptions of the *achievability* of the individual elements of the standards. The existence of a factor analysis solution derived from correlations of teachers' rankings of the *achievability* of the elements of the standards suggests that there is a degree of interdependence amongst the elements.

### Rasch Analysis – *Achievability*

The *achievability* data were submitted to Rasch analysis using *QUEST* software (see Appendix 5). As noted in Chapter 3, the Rasch process provides insight into two key concepts: construct validity and order (Adams & Khoo, 1996). Confirmation of a statistically valid construct signifying reliable separation of items along an *achievability* continuum enables further empirical analysis of a range hypothesis about the elements and domains that make up the theoretical standards.

#### Construct validity

The construct validity question is addressed by the fit statistics arising from the Rasch scaling process. These are displayed in Table 4.4.

**Table 4.4: Rasch analysis *Achievability* ratings – Summary of estimates**

<b>Estimates (Thresholds)</b>				<b>(N = 354 L = 27 Probability Level= .50)</b>			
<i>QUEST</i>							
<b>Summary of item estimates</b>				<b>Summary of case estimates</b>			
Mean		-0.01		Mean		1.21	
SD		0.39		SD		1.11	
SD (adjusted)		0.37		SD (adjusted)		1.07	
Reliability of estimate		0.91		Reliability of estimate		0.93	
<b>Fit Statistics</b>				<b>Fit Statistics</b>			
Infit Mean Square			Outfit Mean Square	Infit Mean Square			Outfit Mean Square
Mean	1.01		Mean	1.02	Mean	1.03	Mean
SD	0.20		SD	0.20	SD	0.50	SD
Infit <i>t</i>			Outfit <i>t</i>	Infit <i>t</i>			Outfit <i>t</i>
Mean	0.07		Mean	0.16	Mean	-0.09	Mean
SD	2.35		SD	1.89	SD	1.74	SD
0 items with zero scores				0 cases with zero scores			
0 items with perfect scores				4 cases with perfect scores			

The item reliability estimate or item separation reliability of Wright and Masters (1982) of 0.91 is well above the lower limit of 0.7 generally accepted by the research community. The reported infit mean square of 1.01 and infit *t* of 0.03 indicate that the data conform to the model and are

suitable for Rasch analysis. Thus, from a holistic viewpoint, teachers' *achievability* rankings of the elements of the standards represent a statistically valid construct.

The next question concerns the extent to which individual elements fit this construct.

The item fit map produced by the *QUEST* software enabled investigation of this question. A modified *QUEST* item fit map is presented in Figure 4.1. Note that all *QUEST* item fit maps reported in this thesis have been modified through the inclusion of item numbers to assist the reader.

Element	Item Fit	9/12/ 3 21:16					
	Achievability (N = 354 L = 27 Probability Level= .50)						
	INFIT						
	MNSQ	.53	.63	.77	1.00	1.30	1.60
1.1	1 item 1			*		.	
1.2	4 item 4			.	*	.	
1.3	7 item 7			.	*	.	
1.4	10 item 10			.	*	.	
1.5	13 item 13			.	*	.	
1.6	16 item 16			.		*	.
2.1	19 item 19			.		*	.
2.2	22 item 22			.		*	.
2.3	25 item 25			.		*	.
2.4	28 item 28			.		*	.
3.1	31 item 31			.*		.	
3.2	34 item 34			*.		.	
3.3	37 item 37			.		.	
3.4	40 item 40			.	*	.	
3.5	43 item 43			.	*	.	
4.1	46 item 46			.	*	.	
4.2	49 item 49			.	*	.	
4.3	52 item 52			.	*	.	
5.1	55 item 55			.	*	.	
5.2	58 item 58			.		*	.
6.1	61 item 61			.	*	.	
6.2	64 item 64			.		*	.
6.3	67 item 67			.		*	.
7.1	70 item 70			.		*	.
7.2	73 item 73			.	*	.	
7.3	76 item 76			.	*	.	
7.4	79 item 79			.		.	*

**Figure 4.1: Item Fit Map – *Achievability* ratings by elements of the standards**

Only one element, *7.4: Enhance the professional status of teachers within the community*, plotted to the right of the vertical lines. This element represents a statistical reversal and, consequently, did not fit the *achievability* construct. One possible explanation for this lack of fit was that teachers did not see this element of the standards as being relevant to their work.

Element *3.2: Create and support learning within their classrooms* plotted slightly to the left of the vertical lines. This element represents a case of overfit. This is not surprising as many teachers would see this element as being axiomatic to their work.

The statistical effect of element 7.4: *Enhance the professional status of teachers within the community* on the fit statistics and *achievability* estimates of items was tested subsequently by removing 7.4 from the data and re-submitting it to the *QUEST* software.

There was little impact on the fit statistics with only a slight improvement in the reliability of item estimates (0.91) and the infit *t* statistics. Consequently it was determined to use the original Rasch statistics and to omit any results for element 7.4 in subsequent analysis.

The existence of a valid *achievability* construct confirmed the separation of item estimates on an interval scale, and consequently, provided estimates of the strength of teachers' perceptions of the *achievability* of individual elements of the standards. A description of this investigation follows.

### ***Achievability ranking of the elements of standards***

*Achievability* estimates for individual elements of the standards were calculated using the *Tau* function of the *QUEST* software. These estimates are presented in Table 4.5 in order of *achievability* from highest to lowest.

The elements calculated by the Rasch analysis to have the highest *achievability* were 2.3, 2.1, and 3.2. Element 2.3 was the only element more than two standard deviations from the mean of the *achievability* estimates.

The items with the lowest *achievability* were 3.5, 1.3, 7.1 and 7.3. One inference from these findings was that knowledge of subject content was seen as more achievable than teachers' capacity to cater for individual student differences in the classroom. While this is apparent here, as an overall finding, the question of whether there are differences amongst the perceptions of primary and secondary teachers is investigated in Chapter 5.

The colour coding of elements in Table 4.5 did not assist in the identification of patterns in the distribution of elements within and across domains. However, the following observations are apparent from these data. Elements within domains:

- 1, 2 and 3 were distributed across the continuum of *achievability*
- 4 and 5 were ranked amongst those seen to have high *achievability*
- 6 and 7 were ranked amongst those with low *achievability*.

**Table 4.5: Elements of Standards by *Achievability* ranking\* – Rasch estimates**

Element of the standards framework		Estimate	Rank
2.3	Are advocates for the subjects they teach	-.80	1
2.1	Demonstrate their knowledge, skills, understanding and values of the subjects(s) they teach	-.63	2
3.2	Create and support learning within their classrooms	-.52	3
5.2	Create safe and secure environments for young people	-.48	4
1.5	Respect the dignity and individualism of students	-.38	5
4.1	Understand that the primary purpose of assessment is to provide information on student achievement and progress to inform future teaching and learning	-.31	6
1.1	Demonstrate high levels of care and commitment to their students	-.29	7
3.3	Manage the learning environments in which they work	-.19	8
5.1	Establish classroom management strategies that support student learning	-.19	8
3.1	Are able to communicate to others the knowledge, understanding, skills and values of the subjects they teach	-.16	10
6.2	Are lifelong learners	-.11	11
1.2	Treat all students justly and equitably, and with an appropriate sense of good humour	-.03	12
4.2	Integrate student assessment and reporting into teaching and learning	-.03	12
4.3	Convey meaningful and useful information to students and parents	-.02	14
3.4	Are flexible in their approach to teaching	-.01	15
1.4	Recognise that they can enhance students' potential as lifelong and independent learners by enabling them to take responsibility for their own learning	.05	16
7.4	Enhance the professional status of teachers within the community.	.05	N/A**
1.6	Ensure that their goals for student learning are consistent with those set out in relevant state and nationally agreed objectives such as, for example, the Board of Studies syllabuses and the <i>Common and Agreed National Goals for Schooling in Australia</i>	.06	17
6.1	Continuously reflect on their practice and its effect on student learning	.17	18
2.2	Model the values of the scholar-teacher	.30	19
6.3	Take responsibility for their own professional growth	.35	20
7.2	Demonstrate educational leadership	.38	21
2.4	Maintain the currency of their content knowledge	.42	22
7.3	Sustain learning through their capacity to promote change and innovation	.56	23
7.1	Seek to create learning communities	.57	24
1.3	Know, critically review, and use as appropriate, a range of educationally sound theories	.62	25
3.5	Plan for individual student's learning	.63	26
	<b>Mean</b>	<b>0.00</b>	
	<b>Standard deviation</b>	<b>0.39</b>	

\* Ranks are arranged from "1" easiest to achieve to "26" hardest to achieve.

\*\* Results for element 7.4 were deemed not applicable as it did not fit the construct.

In summary, Rasch analysis revealed the existence of a valid theoretical construct and enabled the representation and separation of element *achievability* scores on an interval scale. These estimates provided the means of examining empirically the relationship between elements within this construct. The next section examines the implications of this hierarchy for the domains of the standards.

### MANOVA

The mean, range and distribution of *achievability* estimates of elements within each domain were calculated to enable further investigation of the significance of the observations above. These are presented in Table 4.6.

**Table 4.6: Mean and distribution of *Achievability* estimates by domain**

Domain	Mean estimate	<i>n</i>	SD
1	0.01	6	0.35
2	-0.38	3	0.59
3	-0.05	5	0.42
4	-0.12	3	0.16
5	-0.34	2	0.21
6	0.14	3	0.23
7	0.50	3	0.11

NB: Elements 7.4 omitted from the analysis as it did not fit the *achievability* construct.

Element 2.4 did not fit *preparedness* and *development-priority* constructs and was omitted for comparison of constructs.

Observations apparent from these data include:

1. estimates in domains 1, 2 and 3 have the greatest range
2. domains 4 and 7 have the lowest standard deviation
3. domains 2, 4 and 5 have the lowest mean estimates, that is highest levels of *achievability*.
4. domains 6 and 7 have the highest mean estimate, that is lowest levels of *achievability*.

The significance of the apparent difference in mean *achievability* estimates for each domain was tested through a MANOVA. The null hypothesis for this test was  $H_0$ : *There is no statistically significant difference between the mean achievability estimates of each domain.*

Assumptions underpinning the MANOVA were tested prior to undertaking the analysis. The small number of elements in each cell makes such analysis important. Univariate normality was assumed as the Rasch estimates are considered to be normally distributed. Multivariate normality was tested using element numbers as the dependent variable in the Regression menu of SPSS to determine Mahalanobis distances. No multivariate outliers were identified,

that is, no Mahalanobis distances were found to be greater than the critical chi-square value of 16.2 at an alpha level of 0.001.

The linear relationship among pairs of dependent variables across groups was confirmed using scatter-plots. Homogeneity of variance-covariance matrices was tested using Box's M Test. The differences between observed covariances were not statistically significant at an alpha level of 0.1 ( $p=0.239$ ). Similarly, Levene's test of equality of variance accepted that the error variance was equal across groups ( $p=0.056$ ). Across the three perspectives there was a statistically significant multivariate effect. The Pillai's Trace criterion which is considered to be the most robust statistic against violations of multivariate assumptions (Coakes & Steed, 2003, p.182) was statistically significant ( $p<0.001$ ).

However, an examination of the univariate  $F$ -tests indicated no statistically significant difference between the mean *achievability* estimates for each domain ( $p>0.10$ ). Consequently, the null hypothesis  $H_0$  above was accepted.

The *achievability* of elements of the theoretical standards appears, on face value, to be independent of domains. This indicates that elements within each domain are considered on their own merits, rather than in terms of any holistic perception about the *achievability* of the elements within the domain.

### Discussion and Implications

The four analyses presented in this section investigated research questions concerned with teachers' perception of the *achievability* of the elements of the theoretical standards. Results from the frequency analysis indicate that the teachers surveyed do not perceive all elements of the standards as being achievable, nor do they perceive them as being equally achievable. According to the criteria used, twelve elements had *low achievability*. That is, fewer than 90 per cent of respondents ranked these elements 3, 4 or 5. Conversely, fifteen elements of the standards had *medium achievability* with fewer than 10 per cent of respondents ranking these elements as 1 or 2 on the five-point scale. Data from the frequency analysis suggested that teachers place different values on particular elements of practice: some being seen as more achievable than others.

The factor analysis confirmed statistically, the possibility of an alternative framework for arranging the elements of the standards. There were five groupings identified and these are related in part to the seven domains within which the theoretical standards are arranged. The existence of a conceptual relevant statistical grouping is highly relevant. On one hand, the

statistical groupings gave some support to the theoretical framework proposed. On the other, it indicated the potential need for developers of standards frameworks to undertake post hoc empirical studies to confirm the domain structure prior to implementing any standards framework.

The existence of an *achievability* continuum, suggested by the frequency analysis was confirmed by the 'fit' statistics arising from the Rasch analysis. Only one element of the standards, 7.4, did not fit the construct. This analysis confirmed the existence of a continuum for discriminating amongst the elements and provided an index or estimate which reflected the stability of the items on the continuum. Analysis of these estimates pointed to a number of generalisations that have implications for teachers' practice, in general, and their professional development, specifically.

Teachers have divergent perceptions about the *achievability* of elements within domains 1 and 3. Some elements are seen to have high *achievability* while others are seen to have low *achievability*. Of particular importance to policy development and teacher preparation is the perception of low *achievability* of elements relating to support for individual student development.

Given the emphasis in policy and pedagogy on support for individual student development, there are significant implications of teachers' perceptions that this may be "all too hard." An assumption from such findings is that teachers lack confidence in both the policy and in their own capacity to meet such policy expectations in the current teaching environment.

The elements of three other domains had low mean estimates. The elements within these domains 2, 4, and 5 were perceived generally to have *high achievability*. These three domains relate in the first instance to teachers' knowledge and skill and, in the second, to their personal characteristics.

The elements of the remaining two domains had high mean estimates and were perceived to have low *achievability*. Different hypotheses can be advanced as to why teachers perceive these to be less achievable. It could be hypothesised, in the case of domain 6, that teachers feel that the opportunities and means for achieving elements of the standards within this domain are not available to beginning teachers. Similarly, the concepts encapsulated in domain 7 are at variance with teachers' long-held views that teaching is a solitary profession.

The apparent difference between the mean estimates for each domain was not statistically significant. This suggests the possibility that teachers' perceptions of the *achievability* of

individual elements of the theoretical standards were independent of the domains in which the elements were grouped.

The relationship between the elements and the domain are examined further through investigation of teachers' perceptions of *preparedness* and *development-priority* in subsequent sections of this chapter.

### **THE RELATIVE *PREPAREDNESS* OF BEGINNING TEACHERS TO MEET ELEMENTS OF THEORETICAL STANDARDS**

This section explores teachers' perceptions of the *preparedness* of beginning teachers to achieve the elements of the theoretical standards. The analysis relates to responses to the second question of the survey instrument:

*How well prepared are teachers to meet these expectations at the end of their first year of teaching?*

The presentation and discussion of results in this section parallel those of the previous section with the exception of factor analysis which was not undertaken for the *preparedness* perspective. While it is possible to use factor analysis to group elements according to *preparedness*, the significance of any alternative grouping was unclear and hence was not pursued in this aspect of the study. Once again, the analytic techniques to be applied are frequency analysis, Rasch scaling and MANOVA.

#### **Percentage Frequency Analysis - *Preparedness***

Teacher responses to the *preparedness* question of the survey instrument were subjected to the same cumulative frequency analysis as the *achievability* data. The 90 per cent benchmark was used to classify items as either 'very-well,' 'well,' or 'poorly-prepared.'

The cumulative frequencies of the *preparedness* responses indicated that beginning teachers were perceived as being 'poorly-prepared' for every element of the standards, that is, for no element did the combined frequencies of responses of 3, 4, or 5 achieve the 90 per cent benchmark. Cumulative frequencies calculated using the 'well-prepared' criteria range from a low of 45.6 per cent to a high of 86.9 per cent.

These data shed little light on the actual *preparedness* of beginning teachers to meet the elements of the theoretical standards.



The next section investigates two questions through the use of Rasch modelling:

1. whether *preparedness* is a statistically valid construct; and
2. to what extent are beginning teachers perceived to be 'prepared' to achieve the elements of the standards?

### **Rasch Analysis – Preparedness**

Rasch estimates were calculated from the responses to the *preparedness* question of the survey instrument following the methodology outlined in the previous section (see Appendix 6).

#### **Construct validity**

The fit statistics for the Rasch scaling process for the *preparedness* data are shown below in Table 4.7. The infit mean square of 1.01 and infit *t* of -0.01 confirmed that these data also are suitable for Rasch analysis. As with the *achievability* data, the separation reliability estimate, or item reliability estimate of 0.93 indicates a stable separation of elements across the *preparedness* construct. This value is well above the acceptable limit of 0.7.

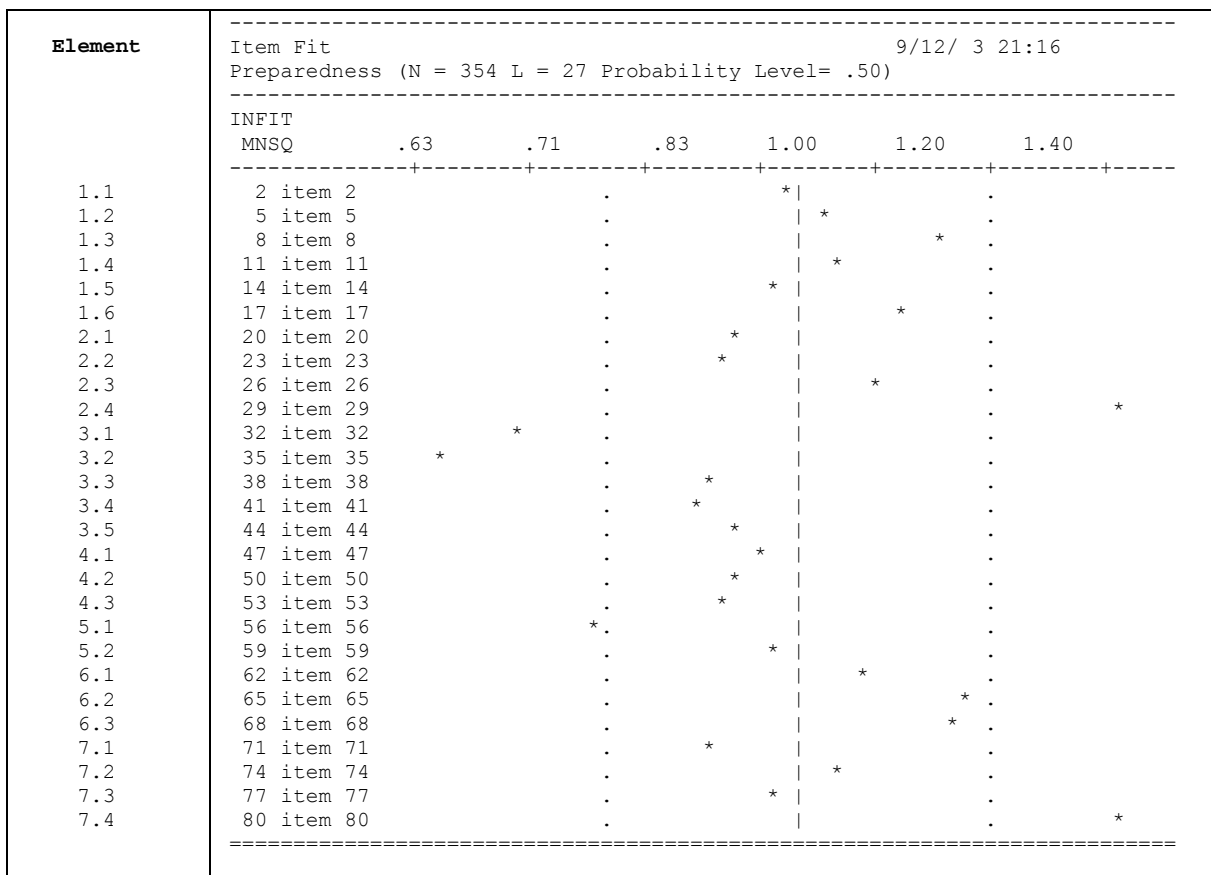
**Table 4.7: Rasch analysis Preparedness ratings – Summary of item estimates**

Item Estimates (Thresholds)				(N = 354, L = 27, Probability Level= .50)			
QUEST							
<b>Summary of Item Estimates</b>				<b>Summary of Case Estimates</b>			
Mean			0.00	Mean			-0.70
SD			0.38	SD			0.91
SD (adjusted)			0.36	SD (adjusted)			0.88
Reliability of estimate			0.93	Reliability of estimate			0.93
<b>Fit Statistics</b>				<b>Fit Statistics</b>			
Infit Mean Square		Outfit Mean Square		Infit Mean Square		Outfit Mean Square	
Mean	1.01	Mean	1.01	Mean	1.01	Mean	1.01
SD	0.21	SD	0.20	SD	0.53	SD	0.52
Infit <i>t</i>		Outfit <i>t</i>		Infit <i>t</i>		Outfit <i>t</i>	
Mean	-0.01	Mean	.02	Mean	-0.18	Mean	-0.11
SD	2.82	SD	2.23	SD	1.91	SD	1.51
0 items with zero scores				0 cases with zero scores			
0 items with perfect scores				0 cases with perfect scores			

The relatively low mean case estimate (-0.7) suggests that teachers rated lowly the *preparedness* of beginning teachers to meet the elements of the theoretical standards. The case estimates for *preparedness* were more widely dispersed (SD = 0.91) than the item estimates (SD = 0.38). This pattern of variation was similar to that of the *achievability*

perspective. The Item Fit Map displayed in Figure 4.2 provides an opportunity to examine the fit of the individual items within the *preparedness* construct.

Twenty-two of the 27 elements fell within the acceptable limits delineated by the vertical dotted lines. Two elements, 2.4: *Maintain the currency of their content knowledge* and 7.4: *enhance the professional status of teachers within the community* plotted to the right of acceptable limits. Consequently, these elements represent statistical reversals and did not fit the *preparedness* construct. As noted in the previous section elements achieving such results were omitted from statistical analysis.



**Figure 4.2: Item Fit Map – Preparedness ratings by elements of the standards**

Three elements, 3.1: *Are able to communicate to others the knowledge, understanding, skills and values of the subjects they teach*, 3.2: *Create and support learning within their classrooms* plot to the left of the line of acceptable fit. These represent cases of statistical overfit of the model. As with those elements that overfit the *achievability* construct, these could also be seen to be fundamental to the preparation of beginning teachers and therefore an essential outcome of their preparation.

These analyses confirmed the validity of *preparedness* as a construct, and consequently, the valid separation of items along an interval scale. The next section investigates teachers' perceptions of the relative *preparedness* of beginning teachers to meet individual elements of the standards.

### ***Preparedness ranking of the elements of standards***

Following the methodology used previously, *preparedness* (item) estimates for elements of the standards were calculated using the *Tau* function of the *QUEST* software with teachers' responses to the *preparedness* question of the survey (see Table 4.8). The *preparedness* estimates were used to rank elements from best prepared (1) to least prepared (25).

The element for which beginning teachers were seen to be best prepared was element 2.3. This element was the only element more than two standard deviations above the mean. The only other element to be more than one standard deviation above the mean was 6.2.

Beginning teachers were seen to be least prepared for element 7.2. Other elements for which beginning teachers were poorly prepared were 3.5, 7.3 and 1.3. All four elements were more than one standard deviation below the mean.

The elements in the table were again colour coded to identify patterns in the ranking of beginning teachers' *preparedness* to meet elements of the standards. Visual examination revealed several occurrences where items from the same domain were ranked consecutively or closely clustered. For example, elements 1.1 and 1.2 were ranked 13<sup>th</sup> and 14<sup>th</sup>, respectively. Elements 6.3 and 6.1 were ranked 6<sup>th</sup> and 7<sup>th</sup>, respectively and elements 4.2 and 4.3 ranked 15<sup>th</sup> and 16<sup>th</sup>, respectively.

The close association of *preparedness* estimates for elements within some domains raises the possibility that *preparedness* estimates are not independent of domains. In this regard, several observations were possible from the *preparedness* hierarchy in Table 4.8.

Elements in domains:

- 1, 4, and 5 were distributed across the continuum of *preparedness*
- 2 and 6 were ranked amongst those for which beginning teachers were perceived to be *well-prepared*
- 3 and 7 were ranked amongst those for which beginning teachers were perceived to be *poorly-prepared*.

**Table 4.8: Elements of standards by *Preparedness* ranking – Rasch estimates**

Element		Estimate	Rank
2.3	Are advocates for the subjects they teach	-1.01	1
6.2	Are lifelong learners	-0.57	2
7.4	Enhance the professional status of teachers within the community.	-0.36	N/A
5.2	Create safe and secure environments for young people	-0.35	3
2.4	Maintain the currency of their content knowledge	-0.33	N/A
2.1	Demonstrate their knowledge, skills, understanding and values of the subjects(s) they teach	-0.29	4
1.5	Respect the dignity and individualism of students	-0.26	5
6.3	Take responsibility for their own professional growth	-0.23	6
3.2	Create and support learning within their classrooms	-0.2	7
6.1	Continuously reflect on their practice and its effect on student learning	-0.2	7
1.6	Ensure that their goals for student learning are consistent with those set out in relevant state and nationally agreed objectives such as, for example, the Board of Studies syllabuses and the <i>Common and Agreed National Goals for Schooling in Australia</i>	-0.1	9
4.1	Understand that the primary purpose of assessment is to provide information on student achievement and progress to inform future teaching and learning	-0.1	9
3.1	Are able to communicate to others the knowledge, understanding, skills and values of the subjects they teach	0.05	11
2.2	Model the values of the scholar-teacher	0.07	12
1.1	Demonstrate high levels of care and commitment to their students	0.1	13
1.2	Treat all students justly and equitably, and with an appropriate sense of good humour	0.11	14
4.2	Integrate student assessment and reporting into teaching and learning	0.12	15
4.3	Convey meaningful and useful information to students and parents	0.13	16
3.4	Are flexible in their approach to teaching	0.17	17
1.4	Recognise that they can enhance students' potential as lifelong and independent learners by enabling them to take responsibility for their own learning	0.19	18
5.1	Establish classroom management strategies that support student learning	0.22	19
3.3	Manage the learning environments in which they work	0.24	20
7.1	Seek to create learning communities	0.37	21
1.3	Know, critically review, and use as appropriate, a range of educationally sound theories	0.42	22
7.3	Sustain learning through their capacity to promote change and innovation	0.44	23
3.5	Plan for individual student's learning	0.66	24
7.2	Demonstrate educational leadership	0.7	25
	<b>Mean</b>	<b>.00</b>	
	<b>SD</b>	<b>.38</b>	

\* Results for elements 2.4 and 7.4 were omitted from further analysis.

These observations suggest a potential relationship between the *preparedness* estimates and domains of the standards. This potential is tested through a MANOVA.

### MANOVA

Prior to undertaking the MANOVA, descriptive statistics for elements within each domain were calculated (Table 4.9). These statistics support the generalisations that were apparent in Table 4.8.

**Table 4.9: Mean and distribution of *Preparedness* estimates by domain**

Domain	Mean estimate	<i>n</i>	SD
1	0.08	6	0.24
2	-0.41	3	0.55
3	0.18	5	0.31
4	0.05	3	0.13
5	-0.07	2	0.40
6	-0.33	3	0.21
7	0.50	3	0.17

*Note: Elements 2.4 and 7.4 were omitted from the analysis*

Clearly:

- estimates in domains 2 and 3 have the greatest range
- estimates in domains 4 and 6 have the lowest range
- estimates in domains 4 and 7 have the lowest standard deviation
- domains 2 and 6 have the lowest mean estimates and therefore highest level of *preparedness*
- domains 3 and 7 have the highest mean estimate and consequently the lowest level of *preparedness*.

The null hypothesis for the MANOVA was  $H_0$ : *There is no statistically significant difference between the mean preparedness estimates of each domain.* The MANOVA analysis discussed in the previous section was revisited to test this hypothesis. The assumptions and results underpinning these analyses, with the exception of the relevant Levene statistic, were deemed met in the previous section. The Levene univariate test for homogeneity of variance supported acceptance of the null hypothesis that the error variance of the dependent variable is equal across groups ( $p=0.639$ ).

As reported earlier the Pillai's Trace indicated a statistically significant multivariate effect ( $p < 0.001$ ). Subsequent examination of univariate  $F$ -Test statistics show a statistically significant univariate effect ( $p < 0.05$ ), that is, a statistically significant difference between the mean *preparedness* of each domain. However, the reported  $p$  value of 0.013 needs to be treated with caution. Coakes and Steed (2003, p.182) recommended the use of a Bonferroni adjustment to decrease the possibility of Type 1 experiment-wise error and that a more appropriate alpha level is 0.017 (0.05/3).

Nonetheless, the reported  $p$  value was less than the Bonferroni adjusted statistic. Post hoc analyses were undertaken to determine which groups contributed to the statistically significant difference. Two post hoc tests were applied. The first and more rigorous test, Scheffe, did not find any statistically significant difference between the mean *preparedness* estimates of individual domains. The second test, Tuckey's Honestly Significant Difference (HSD), which is less rigorous (Coakes & Steed, 2003, p.78) indicated statistically significant differences between the mean estimates of domains 2 and 7 ( $p < 0.05$ ) and domains 6 and 7 ( $p < 0.05$ ).

These results suggest that *preparedness* estimates for elements are not independent of the domains. The results of frequency, Rasch and MANOVA analysis of teachers' perceptions of *preparedness* are discussed more fully below.

### Discussion and Implications

The analysis of responses to the *preparedness* question of the survey instrument added a further perspective to the development of an understanding of teachers' perceptions of the theoretical standards. Perceptions of *preparedness* complement the earlier understandings about teachers' perceptions of the *achievability* of particular elements of the standards.

The analysis of frequency data indicated that beginning teachers were perceived to be *poorly-prepared* for every element of the standards. In the context of the criteria used to classify elements in this study, the cumulative frequencies for scores of 3, 4 or 5 did not reach the 90 per cent benchmark for any element. Indeed, for two elements, 3.5 and 7.2, the cumulative frequency was less than 50 per cent. Compared with the analysis of cumulative frequencies derived for the *achievability* analysis the cumulative frequencies were lower and had a greater range.

Rasch analysis supported the existence of a unifying construct based on teachers' perceptions of beginning teachers' *preparedness* to meet the standards. As expected from the frequency data, case estimates derived from the Rasch analysis of the *preparedness* data were generally

lower than those derived for items or elements. This was the opposite result to that of the *achievability* analysis where case estimates were higher than item or element estimates. Although the scales for each were derived from different data sets and consequently not directly comparable, this observation, if proven in later analyses to be accurate, has specific and direct implications for teacher education. It is indicative of a gap between the intended outcomes of initial teacher education courses and practising teachers' perceptions of their beginning teachers' *preparedness* to meet these outcomes identified through anecdotal evidence by Ramsey (2000).

Item estimates calculated by the Rasch analysis indicate teachers responding to the survey perceive beginning teachers to be relatively better prepared in terms of their subject content knowledge (domain 2) and their capacity to reflect and improve their practice (domain 6). They have perceptions, however, of low levels of *preparedness* in domain 3 and 7. The first of these domains is primarily concerned with pedagogy and the capacity to facilitate student learning.

A potential association between *preparedness* estimates of elements and domains was confirmed empirically. There was a statistically significant difference between the mean *preparedness* estimates for domain 7 and those of domains 2 and 6. A similar association was not found between *achievability* estimates and domains. This suggests that teachers may use different criteria for making judgements about *achievability* and *preparedness*.

### **THE DEVELOPMENT-PRIORITY AFFORDED ELEMENTS OF THE THEORETICAL STANDARDS**

This section expands on the analysis of teachers' perceptions of the elements of standards. It relates to the third question of the survey instrument: *What level of priority should be given to teacher development in this/these areas?*

The analysis of responses to the *development-priority* question has the potential to provide a measure of internal validity of the responses to the survey instrument. The analysis is presented in three parts: percentage frequency analysis, Rasch analysis and MANOVA.

#### **Percentage Frequency Analysis – *Development-priority***

As with the previous *achievability* and *preparedness* questions, the responses to the *development-priority* question were subjected to cumulative frequency analysis using the 90 per cent benchmark described earlier. This analysis is summarised in Table 4.10.

**Table 4.10: Cumulative frequency analysis classification of elements with respect to *Development-priority***

Elements of Competence		Development priority		
		Low	High	Very-high
1.1	Demonstrate high levels of care and commitment to their students		✓	
1.2	Treat all students justly and equitably, and with an appropriate sense of good humour		✓	
1.3	Know, critically review, and use as appropriate, a range of educationally sound theories		✓	
1.4	Recognise that they can enhance students' potential as lifelong and independent learners by enabling them to take responsibility for their own learning		✓	
1.5	Respect the dignity and individualism of students		✓	
1.6	Ensure that their goals for student learning are consistent with those set out in relevant state and nationally agreed objectives such as, for example, the Board of Studies syllabuses and the Common and Agreed National Goals for Schooling in Australia.		✓	
2.1	Demonstrate their knowledge, skills, understanding and values of the subjects(s) they teach		✓	
2.2	Model the values of the scholar-teacher		✓	
2.3	Are advocates for the subjects they teach		✓	
2.4	Maintain the currency of their content knowledge.		✓	
3.1	Are able to communicate to others the knowledge, understanding, skills and values of the subjects they teach		✓	
3.2	Create and support learning within their classrooms			✓
3.3	Manage the learning environments in which they work		✓	
3.4	Are flexible in their approach to teaching		✓	
3.5	Plan for individual student's learning.		✓	
4.1	Understand that the primary purpose of assessment is to provide information on student achievement and progress to inform future teaching and learning		✓	
4.2	Integrate student assessment and reporting into teaching and learning		✓	
4.3	Convey meaningful and useful information to students and parents.		✓	
5.1	Establish classroom management strategies that support student learning			✓
5.2	Create safe and secure environments for young people.		✓	
6.1	Continuously reflect on their practice and its effect on student learning		✓	
6.2	Are lifelong learners		✓	
6.3	Take responsibility for their own professional growth.		✓	
7.1	Seek to create learning communities		✓	
7.2	Demonstrate educational leadership		✓	
7.3	Sustain learning through their capacity to promote change and innovation		✓	
7.4	Enhance the professional status of teachers within the community.	✓		



Elements were classified as having either 'very-high,' 'high' or 'low *development-priority*.' Two elements, 3.3 and 5.1, were classified as having very-high *development-priority*. With the exception of element 7.4 which was classified as having low *development-priority*, all other elements were classified as meeting the high *development-priority* benchmark. These data indicated that, with the exception of element 7.4, fewer than 10 per cent of teachers indicated a *development-priority* of 1 or 2 to any of the elements. The cumulative frequencies for *development-priority* were consequently higher than those for *achievability* or *preparedness*. The significance of these data is discussed in a later section of this chapter.

### Rasch Analysis – *Development-priority*

Teachers' responses to the *development-priority* question were subjected to Rasch analysis using the methodology outlined previously. Again, this analysis had three phases: an investigation of the validity of *development-priority* construct; an investigation of any underlying hierarchy of *development-priority*; leading to an investigation of the inter-relationship between the *development-priority* estimates and the domains.

#### Construct Validity

Rasch estimates were calculated from responses to the *development-priority* questions (see Appendix 7). The fit statistics are displayed in Table 4.11. The person ability mean (mean case estimate) of 1.47 indicated that the teachers completing the survey ranked elements of the standards highly in terms of their *development-priority*.

**Table 4.11: Rasch analysis *Development-priority* ratings – Summary of item estimates**

Item Estimates (Thresholds)				(N = 354, L = 27, Probability Level= .50) QUEST			
<b>Summary of Item Estimates</b>				<b>Summary of Case Estimates</b>			
Mean		-0.01		Mean		1.47	
SD		0.35		SD		0.95	
SD (adjusted)		0.33		SD (adjusted)		0.89	
Reliability of estimate		0.86		Reliability of estimate		0.89	
<b>Fit Statistics</b>				<b>Fit Statistics</b>			
Infit Mean Square		Outfit Mean Square		Infit Mean Square		Outfit Mean Square	
Mean	0.99	Mean	0.99	Mean	1.01	Mean	0.99
SD	0.18	SD	0.22	SD	0.49	SD	0.46
Infit t		Outfit t		Infit t		Outfit t	
Mean	-0.19	Mean	0.08	Mean	-0.12	Mean	-0.08
SD	2.08	SD	1.90	SD	1.56	SD	1.24
0 items with zero scores				0 cases with zero scores			
0 items with perfect scores				0 cases with perfect scores			

Although the person estimates were more widely dispersed ( $SD = 0.95$ ) than item estimates ( $SD = 0.35$ ), the relatively high person estimates confirm the evidence from the earlier analysis of cumulative frequencies that teachers place a high priority on the development of the knowledge and skills underpinning the theoretical standards. The reliability of item estimates of 0.86 was slightly less than those obtained in the analysis of *achievability* and *preparedness* data. Even so, the infit mean square of 0.99 and mean infit  $t$  of  $-0.19$  indicate a stable construct underlying the data. The item fit map is presented in Figure 4.3.

Element	Item Fit	9/12/ 3 21:16					
	Development-priority (N = 354 L = 27 Probability Level= .50)						
	INFIT						
	MNSQ	.71	.83	1.00	1.20	1.40	1.60
1.1	3 item 3	.			*	.	
1.2	6 item 6	.			*	.	
1.3	9 item 9	.			*	.	
1.4	12 item 12	.			*	.	
1.5	15 item 15	.	*		.	.	
1.6	18 item 18	.			*	.	
2.1	21 item 21	.			*	.	
2.2	24 item 24	.			*	.	
2.3	27 item 27	.			*	.	
2.4	30 item 30	.			.	*	
3.1	33 item 33	.			*	.	
3.2	36 item 36	.			*	.	
3.3	39 item 39	.			*	.	
3.4	42 item 42	.	*		.	.	
3.5	45 item 45	.	*		.	.	
4.1	48 item 48	.			*	.	
4.2	51 item 51	.	*		.	.	
4.3	54 item 54	.	*		.	.	
5.1	57 item 57	.			*	.	
5.2	60 item 60	.			*	.	
6.1	63 item 63	.	*		.	.	
6.2	66 item 66	.	*		.	.	
6.3	69 item 69	.	*		.	.	
7.1	72 item 72	.			*	.	
7.2	75 item 75	.			*	.	
7.3	78 item 78	.	*		.	.	
7.4	81 item 81	.			.	.	*

**Figure 4.3: Item Fit Map – Development-priority ratings by elements of the standards**

The map indicates that only two elements plotted outside the lines of acceptable fit. These were elements 2.4 and 7.4. Once again these items were not considered to fit the construct. This result further confirms the conjecture in the previous sections that these elements of the standards are possibly less relevant to beginning teachers' practice.

#### **Development-priority ranking of the elements of standards**

Item estimates for the *development-priority* construct were calculated using the Tau function of the *QUEST* software. Item estimates obtained from the analysis are presented in Table 4.12.

**Table 4.12: Elements of standards by *Development-priority* - Rasch estimates**

Element		Estimate	Rank
5.1	Establish classroom management strategies that support student learning	-.71	1
3.2	Create and support learning within their classrooms	-.65	2
3.3	Manage the learning environments in which they work	-.50	3
3.4	Are flexible in their approach to teaching	-.35	4
5.2	Create safe and secure environments for young people	-.28	5
1.1	Demonstrate high levels of care and commitment to their students	-.27	6
3.1	Are able to communicate to others the knowledge, understanding, skills and values of the subjects they teach	-.27	6
2.1	Demonstrate their knowledge, skills, understanding and values of the subjects(s) they teach	-.22	8
3.5	Plan for individual student's learning	-.12	9
4.2	Integrate student assessment and reporting into teaching and learning	-.06	10
2.4	Maintain the currency of their content knowledge	-.05	N/A*
4.3	Convey meaningful and useful information to students and parents	-.05	11
1.4	Recognise that they can enhance students' potential as lifelong and independent learners by enabling them to take responsibility for their own learning	-.04	12
1.5	Respect the dignity and individualism of students	-.03	13
4.1	Understand that the primary purpose of assessment is to provide information on student achievement and progress to inform future teaching and learning	-.02	14
6.1	Continuously reflect on their practice and its effect on student learning	.00	15
6.2	Are lifelong learners	.03	16
1.2	Treat all students justly and equitably, and with an appropriate sense of good humour	.08	17
1.6	Ensure that their goals for student learning are consistent with those set out in relevant state and nationally agreed objectives such as, for example, the Board of Studies syllabuses and the <i>Common and Agreed National Goals for Schooling in Australia</i>	.13	18
6.3	Take responsibility for their own professional growth	.21	19
1.3	Know, critically review, and use as appropriate, a range of educationally sound theories	.25	20
7.4	Enhance the professional status of teachers within the community.	.29	N/A*
2.3	Are advocates for the subjects they teach	.37	21
7.3	Sustain learning through their capacity to promote change and innovation	.52	22
7.1	Seek to create learning communities	.55	23
7.2	Demonstrate educational leadership	.55	24
2.2	Model the values of the scholar-teacher	.63	25
	<b>Mean</b>	<b>.00</b>	
	<b>SD</b>	<b>.35</b>	

\* Elements 2.4 and 7.4 were omitted from the analysis

It is worth commenting that the initial calculation of the estimates was anomalous. One element with relatively high cumulative frequency rankings (1.1) had the lowest *development-priority* estimate. Close examination of the data revealed there were no responses of '1' to the choices offered by the Likert scale and as a result the *QUEST* software re-scored the original scores of 2, 3, 4, and 5 as 1, 2, 3, and 4. This problem was overcome by replacing one missing score with a '1.'

Elements were ranked Table 4.12 in terms of their *development-priority* from highest (rank 1) to lowest (rank 25). Elements 2.4 and 7.4 were not considered in the ranking because they did not fit the construct. The element with the highest *development-priority* was 5.1. This element was the only element more than two standard deviations from the mean. Other elements to be ranked highly according to *development-priority* estimate include elements from domain 3: *Expert in the 'art and science' of teaching*.

The element with the lowest *development-priority* estimate was 2.2. Elements concerned with leadership, that is, from domain 7 were amongst those with the lowest *development-priority* estimates.

The colour coding of elements within each domain makes apparent a higher degree of clustering of elements within domains for the *development-priority* perspective compared with the *achievability* and *preparedness* perspectives.

Further, several clear trends amongst elements within domains were apparent. Elements in domains:

- 1 and 2 were distributed across the continuum of *development-priority*
- 3 and 5 had the highest *development-priority*
- 6 and 7 had low *Preparedness*.

The significance of these apparent trends was examined through a MANOVA.

### MANOVA

The observations above were investigated further through an examination of the descriptive statistics for each of the domains (Table 4.13). The data indicate the mean estimates for:

- domains 3 and 5 are low indicating a high *Preparedness*
- domains 2 and 7 are relatively high indicating a low *Preparedness*

**Table 4.13: Mean and distribution of *Development-priority* estimates by domain**

Domain	Mean estimate	<i>n</i>	SD
5	-0.50	2	0.30
3	-0.38	5	0.20
4	-0.04	3	0.02
1	0.02	6	0.18
6	0.08	3	0.11
2	0.26	3	0.44
7	0.54	3	0.02

Note: Elements 2.4 and 7.4 not included in analysis

The MANOVA described in the previous analysis of *achievability* and *preparedness* estimates was used to test the null hypothesis:  $H_0$ : *There is no statistically significant difference between the mean development-priority of each domain.*

With the exception of the relevant Levene Statistic, the assumptions underpinning the MANOVA were described in the discussion of the differences amongst the mean *achievability* estimates. Homogeneity of error variances was not confirmed for the *development-priority* estimates by Levene's test which rejected the null hypothesis that the error variance of the dependent variable was equal across groups ( $p=0.003$ ).

However, univariate *F*-tests of the dependent variable found a difference between mean *development-priority* estimates ( $p<0.001$ ). The chance of Type I error for this test was low, given the calculated probability ( $p<0.001$ ) was less than the recommended Bonferroni- type adjusted alpha of 0.017. Post hoc tests using Tukey's HSD were undertaken to determine which groups contributed to the statistically significant difference. These tests found statistically significant difference between the mean estimates for:

- domains 1 and 7 ( $p=0.041$ )
- domains 3 and 7 ( $p<0.001$ )
- domains 4 and 7 ( $p=0.050$ )
- domains 5 and 7 ( $p=0.001$ )
- domains 2 and 3 ( $p=0.016$ )
- domains 2 and 5 ( $p=0.026$ )

These data indicate statistically significant differences in the relative *development-priority* teachers give to the different domains within the standards. The implications of these findings are considered in the following discussion.

### Discussion and Implications

The analysis of responses to the *development-priority* question of the survey instrument adds another perspective to the discussion of teachers' perceptions of the standards.

The calculation of cumulative frequencies indicates that teachers perceive all elements of the theoretical standards, with the exception of 7.4 as having either high or very-high *development-priority*. The validity of the *development-priority* construct and the existence of a continuum of *development-priority* were confirmed by Rasch analysis. Thus the theoretical standards have construct validity from three different perspectives, *achievability*, *preparedness*, and *development-priority*.

With the exception of two elements of the standards, namely 2.4 and 7.4, all elements of the theoretical standards fit the construct. Given that Element 7.4 did not fit any of the three constructs and element 2.4 did not fit two of the three constructs (*preparedness* and *development-priority*) the relevance of these elements to the theoretical standards is questionable. Teachers may believe these elements are not relevant to beginning teachers.

Investigation of the hierarchy of *development-priority* estimates revealed different patterns of rankings from those derived from the *achievability* and *preparedness* estimates. There is a stronger association or clustering of elements within domains which is not so apparent with the other perspectives. Thus, the domains appear to be more relevant to the *development-priority* construct than to the other constructs.

It could be argued that this is a consequence of how teachers determined their rankings for the different questions in the survey instruments. Decisions about *development-priority* may be more holistic and not generally involve consideration of single aspects of teaching practice. Whereas, judgements about the *achievability* and *preparedness* of individual elements may be independent of the domains.

Although all elements of the standards were ranked as having high or very-high *development-priority* by the cumulative frequency benchmarking, the statistically significant difference between the mean estimates of some domains indicated teachers have different relative *development-priorities* for some domains. The teachers surveyed placed highest *development-priority* on those domains of the standards concerned with pedagogy and classroom management. Issues of leadership, both within the school community and their teaching had lower *development-priority*.

The findings relating to *development-priority* discussed above need to be considered in the context of other findings from the *achievability* and *preparedness* perspectives. It might be

expected that some elements seen as achievable for which beginning teachers were relatively unprepared might have a high *development-priority*, and, alternatively, elements for which beginning teachers were well-prepared would have a lower *development-priority*. An examination of mean domain estimates for each perspective indicated the possibility of such a relationship between the perspectives. For example, elements within domain 2 have high *achievability* and *preparedness* and low *development-priority*. Similarly, element 3 has medium *achievability*, low *preparedness* and high *development-priority*.

The next section seeks to explore the issue of the relationship between the three perspectives in more detail. It examines interactions among the three perspectives, the domains and elements of the standards.

### **DIFFERENCES BETWEEN PERSPECTIVES**

The previous section identified differences in teachers' perceptions of the theoretical standards. The differences were apparent initially from the calculation of cumulative frequencies. The fact that beginning teachers were perceived to be unprepared for any elements of the standards, even though they were seen as *achievable* was a clear indication of differences between the perspectives. The ordinal nature of the Likert-scale data means, however, that firm conclusions based on frequency analysis classifications are questionable.

While the subsequent determination of estimates for each perspective also points to a relationship between the perspectives, the different scales arising from each of the analyses negate further empirical testing or quantification of differences. The next sub-section seeks to overcome this difficulty through the development of a single Rasch scale along which all three perspectives are distributed. Correlation analysis is used to test relationships among the perspectives.

#### **Rasch analysis**

In order to compare teachers' responses to the *achievability*, *preparedness* and *development-priority* questions all data were submitted to Rasch analysis on a single scale (Appendix 8). This was required to overcome inconsistency in the calibration of item thresholds that would necessarily arise if they were derived from different scales. The item estimates derived as part of this analysis would provide an interval measure that could be used for subsequent parametric analysis. Conceptually, if there was a significant difference between the

perspectives, the item estimates derived for the three perspectives would be distinctively located on the same Rasch scale.

### ***The validity of an 'overall' construct***

An item estimate reliability of 0.98 with infit mean square of 0.97 and infit  $t$  of -0.58 were obtained from submitting all 81 items from the *achievability*, *preparedness* and *development-priority* data sets to the *QUEST* software (Table 4.14).

**Table 4.14: Rasch analysis All data sets – Summary of estimates**

Item Estimates Thresholds				(N = 354 L = 81 Probability Level= .50) QUEST			
<b>Summary of Item Estimates</b>				<b>Summary of Case Estimates</b>			
Mean		-0.01		Mean		0.69	
SD		0.66		SD		0.51	
SD (adjusted)		0.65		SD (adjusted)		0.50	
Reliability of estimate		0.98		Reliability of estimate		0.94	
Infit Mean Square		Outfit Mean Square		Infit Mean Square		Outfit Mean Square	
Mean	0.97	Mean	0.97	Mean	0.95	Mean	0.97
SD	0.18	SD	0.17	SD	0.38	SD	0.40
Infit $t$		Outfit $t$		Infit $t$		Outfit $t$	
Mean	-0.58	Mean	-0.41	Mean	-0.55	Mean	-0.32
SD	2.33	SD	1.81	SD	2.40	SD	1.90
0 items with zero scores				0 items with zero scores			
0 items with perfect scores				0 items with perfect scores			

The infit  $t$  value of -0.58 is higher than those obtained by Rasch for the individual perspectives. While the value is still within accepted limits it is indicative of a broader spread of scores. The Item Fit Map produced by the *QUEST* software is replicated in Figure 4.4. Items are represented by their element number and perspective. The three perspectives *achievability*, *preparedness* and *development-priority* are annotated 'a,' 'b' and 'c' respectively.

Three items, 2.4c, 7.4a and 7.4c, plotted to the right of the line of acceptable fit and consequently did not fit the construct. This was not unexpected as these elements did not fit the individual constructs. Five elements plotted to the left of the line of acceptable fit, 1.4a, 3.1b, 3.2b, 5.1b and 7.3a. These represent cases of overfit. Although there was significant overlap between those items either not fitting or over-fitting the individual constructs and the overall construct, there were some differences. For example, item 2.4b did not fit the *preparedness* construct but did fit the overall construct. Likewise, items 1.4a and 7.3a were instances of overfit for the overall construct but not for the *achievability* construct.



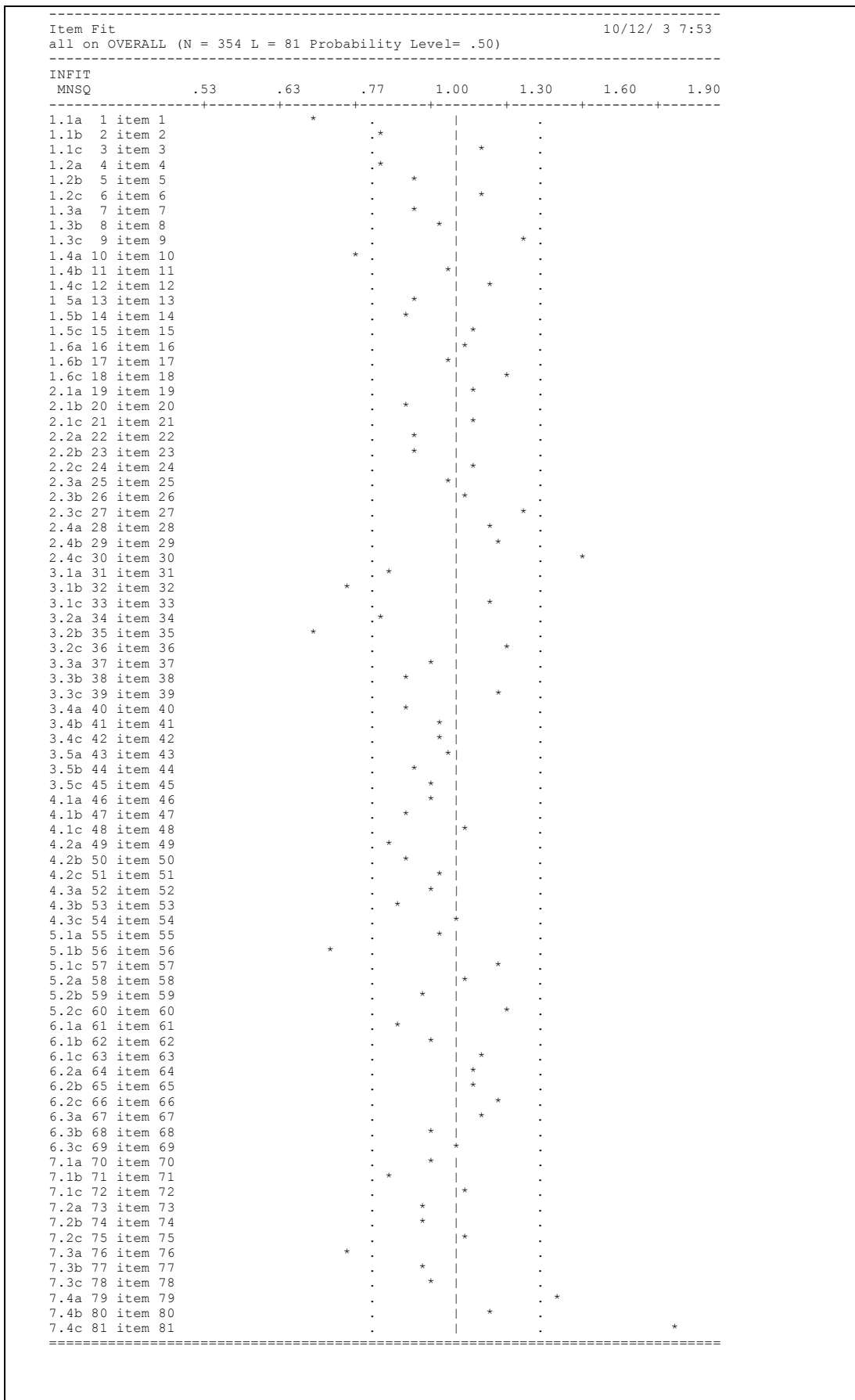


Figure 4.4: Item fit map 'overall' construct

Notwithstanding these aberrations, the existence of a valid 'overall' construct provides a firm basis for deriving relevant interval measures for each element and perspective. The location of item estimates for the individual perspectives is highlighted in the Person/Item Estimate Map (Figure 4.5). The map is a modification of the *QUEST* printout with items separated by perspective.

### ***t*-Test**

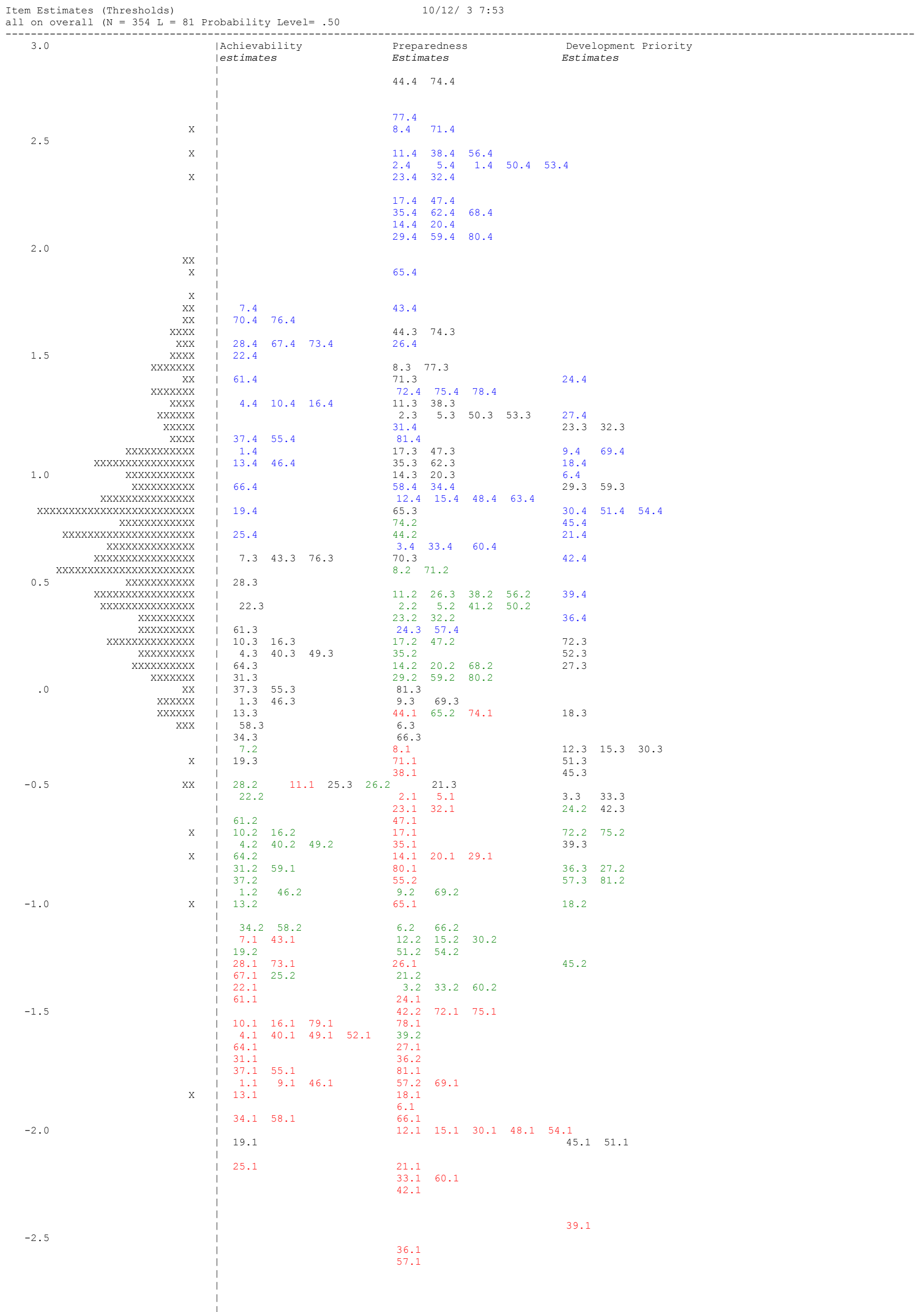
An analysis of the significance of the differences between the perspective means (derived from item estimates) evident in the item fit map can be determined through the use of a *t*-test. As two sets of data derived from the same group are to be analysed, a two-tailed dependent-samples or paired *t*-test was used rather than a MANOVA. The tests were applied with each of the perspectives *achievability*, *preparedness* and *development-priority* acting as dependent variables to determine if the means were significantly different. The test is designed to test the null hypothesis  $H_0$ : *There is no statistically significant difference between perspective means.*

Item estimates, derived using the Tau function, were separated by perspective and means were calculated. A *t*-test was subsequently applied to determine the significance of the difference between each pair of means using SPSS. The mean and standard deviation for each perspective and the results of *t*-test are displayed in Table 4.15.

**Table 4.15: Difference between the means for each perspective, *t*-test**

Pairs	Paired Differences					<i>t</i>	<i>df</i>	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
<i>Achievability – Preparedness</i>	-1.0070	0.23121	0.04450	-1.0985	-0.9156	-22.631	26	0.000
<i>Achievability – Development-priority</i>	0.3830	0.33694	0.06484	0.2497	0.5163	5.906	26	0.000
<i>Preparedness – Development-priority</i>	1.3900	0.40287	0.07753	1.2306	1.5494	17.928	26	0.000

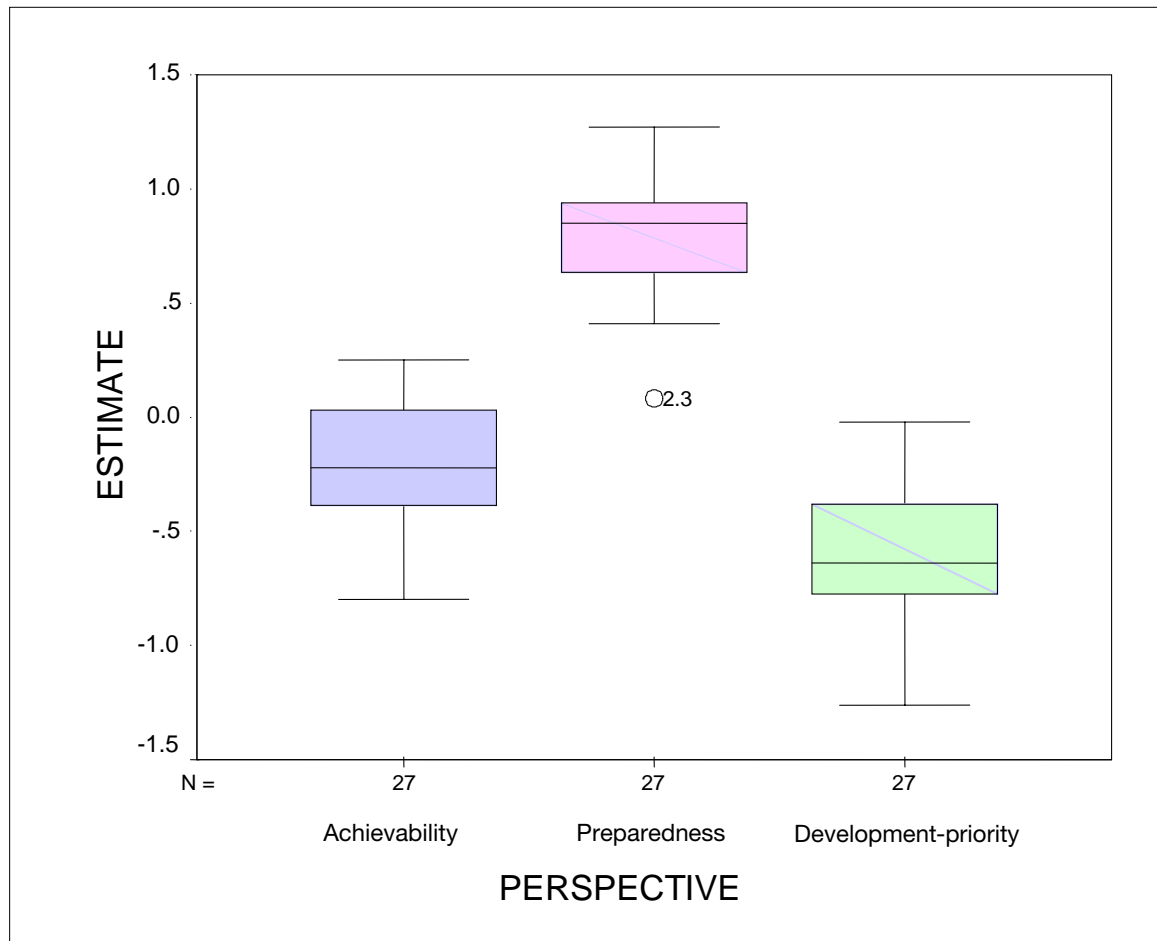
The *t* values calculated for each of the pairs indicate a statistically significant difference ( $p < .001$ ) between the means for each perspective and confirmed the differences evident in Figure 4.5.



Each X represents 1 student  
 Some thresholds could not be fitted to the display

Figure 4.5: Item Estimate Map

The differences between perceptions of *achievability*, *preparedness* and *development-priority* are even more apparent in the boxplot presented in Figure 4.6



**Figure 4.6: Comparison between item estimates by perspective**

The boxplot highlights the differences among the estimates for each perspective. Only one outlier is obvious from the graph, that is, element 2.3: *Are advocates for the subjects they teach*. Higher estimates for *preparedness* than for *achievability* and *development-priority* indicate that the teachers' perceptions of *preparedness* were lower than for the other two perspectives.

Comparatively, teachers appear to be less confident about issues of *preparedness* than they are about *achievability* or *development-priority*. Further, the differences between *preparedness* and *development-priority* suggest the possibility that these may be inversely related. That is, items with low *preparedness* may have high *development-priority* and vice-versa. Such a relationship was investigated through correlation analysis.

### Correlation Analysis

The relationship between the pairs of perspectives was examined further through correlation analysis. Item estimates calculated previously were arranged by perspective and submitted to SPSS. The results of this analysis follow in Table 4.16.

The data indicate that *achievability* is positively correlated with both *preparedness* and *development-priority*, although the former is a stronger relationship ( $r=.732$ ,  $p<0.01$ ) than the latter ( $r=.435$ ,  $p<0.05$ ). However, the correlation between *preparedness* and *development-priority* was close to zero (0.105) and non-statistically significant ( $p>0.5$ ).

**Table 4.16: Correlations between *Achievability*, *Preparedness* and *Development-priority* perspectives**

		<i>Achievability</i>	<i>Preparedness</i>	<i>Development-priority</i>
<b><i>Achievability</i></b>	Pearson Correlation	1	.732(**)	.435(*)
	Sig. (2-tailed)	.	.000	.030
	<i>n</i>	26	25	25
<b><i>Preparedness</i></b>	Pearson Correlation	.732(**)	1	.105
	Sig. (2-tailed)	.000	.	.617
	<i>n</i>	25	25	25
<b><i>Development-priority</i></b>	Pearson Correlation	.435(*)	.105	1
	Sig. (2-tailed)	.030	.617	.
	<i>n</i>	25	25	25

\* Correlation is statistically significant at the 0.05 level (2-tailed) \*\* Correlation is statistically significant at the 0.01 level (2-tailed).

While the correlation analysis showed the extent of relationship between the perspectives it was incapable of determining which factors contributed to the relationship. These were investigated through two analytic techniques. The first was a non-parametric analysis of the significance of the differences between the estimates for each perspective within domains, and the second, a comparison of the rank order of elements across the perspectives.

### Non-parametric analysis

In order to determine which domains contributed to the difference between perspectives, the earlier data were rearranged and separated by domain, that is, estimates for items relating to elements within each domain were grouped. This provided groups of unequal size because of

the different number of elements within each domain. These data were therefore unsuitable for analysis by parametric methods (Lowry, 2002).

Consequently, non-parametric methods, although less powerful, were deemed appropriate in these circumstances. The Kruskal-Wallis test, which is equivalent to a one-way between-groups ANOVA, was applied to the data. This function compared the medians of samples, and returned a '*p*' value to test the null hypothesis,  $H_0$ : *All samples are drawn from the same population.*

The Kruskal-Wallis test makes the following assumptions (Statistics Toolbox, 2003) about the data:

- all samples come from populations having the same continuous distribution apart from the possibly different locations due to group effects,
- all observations are mutually independent.

Results of relevance to this analysis follow in Table 4.17.

**TABLE 4.17: Significance of perspective differences across domains<sup>a, b</sup>**

Domain	1	2	3	4	5	6	7
Chi-Square	12.784	6.731	12.500	7.200	7.385	7.200	8.346
df	2	2	2	2	2	2	2
Asymp. Sig.	.002	.035	.002	.027	.025	.027	.015

*a* Kruskal-Wallis Test

*b* Grouping Variable: Perspectives

The results in each instance reject the null hypothesis ( $p < 0.05$ ) and as a consequence it can be inferred with a high degree of probability that at least one perspective median within each domain is significantly different from the others. Thus, all domains could be said to contribute to the difference between perspectives. The capacity to undertake post hoc analysis to determine which perspectives within each domain are significantly different is not available for the Kruskal-Wallis test.

### Rank Order Comparisons

To investigate which elements contributed to the differences between perspectives, rank order comparisons between individual elements were undertaken. Rank order comparisons were established with reference to the Rasch estimates determined for the *t*-test analysis in

Table 4.16. To compensate for the difference in distribution of estimates for each perspective, estimates were separated by perspective and then ranked. This avoided skewing the rankings while producing three rankings for each element.

The results of this classification are presented in Table 4.18. Rankings for each perspective were rated, 'high,' 'medium' and 'low' according to whether their ranks fell in the groupings '1-9,' '10-17' or '18-25.'

**Table 4.18: Perspective ranks and ratings for *Achievability*, *Preparedness*, and *Development-priority***

<b>Element</b>	<b><i>Achievability</i> Rank</b>	<b><i>Preparedness</i> Rank</b>	<b><i>Development- priority</i> Rank</b>	<b><i>Achievability</i> Rating</b>	<b><i>Preparedness</i> Rating</b>	<b><i>Development- priority</i> Rating</b>
1.1	7	15	27	high	med	low
1.2	12	16	17	med	med	med
1.3	26	24	20	low	low	low
1.4	16	20	12	med	low	med
1.5	5	7	13	high	high	med
1.6	18	11	18	low	med	low
2.1	2	6	7	high	high	high
2.2	20	14	26	low	med	low
2.3	1	1	22	high	high	low
2.4	23	5	10	n/a	n/a	n/a
3.1	10	13	6	med	med	high
3.2	3	9	2	high	high	high
3.3	8	22	3	high	low	high
3.4	14	19	4	med	low	high
3.5	27	26	8	low	low	high
4.1	6	12	14	high	med	med
4.2	13	17	9	med	med	high
4.3	15	18	11	med	low	med
5.1	9	21	1	high	low	high
5.2	4	4	5	high	high	high
6.1	19	10	15	low	med	med
6.2	11	2	16	med	high	med
6.3	21	8	19	low	high	low
7.1	25	23	25	low	low	low
7.2	22	27	24	low	low	low
7.3	24	25	23	low	low	low
7.4	17	3	21	n/a	n/a	n/a

Elements 2.4 and 7.4 were omitted from the analysis as they had previously been deemed not to fit the construct. Given the statistically significant correlation between *achievability* and *preparedness* estimates, and to a lesser extent between *achievability* and *development-priority* estimates, the relationships of greatest interest concern those between *preparedness* and *development-priority* estimates.

As noted in the earlier section, the expected inverse relationship between these perspectives was not confirmed. Examination of 'high' and 'low' ratings provided some insight into the reason for the absence of this relationship. Three elements, 2.1, 3.2 and 5.2 had high ratings for *achievability*, *preparedness* and *development-priority*. Four elements, 1.3, 7.1, 7.2 and 7.3 had low *achievability*, *preparedness* and *development-priority* ratings.

Two elements, 2.3 and 6.3, had high *preparedness* and low *development priority*, while four elements, 3.3, 3.4, 3.5 and 5.1, were rated low on *preparedness* and high on *development-priority*.

### Discussion and implications

The discussion and implications of the relationship among the three perspectives *achievability*, *preparedness* and *development-priority* is explored in this section. Rasch analysis confirmed the existence of a valid construct linking the data, and hence, the potential to generate comparable estimates across the three perspectives.

Importantly, this analysis confirmed the earlier findings that elements 2.4 and 7.4 were inconsistent with the theoretical standards. Clearly, the consistency of these findings, first from analysis of individual constructs, and now through investigation of an overall construct, suggest that teachers do not see these as being as important for beginning teachers other elements of the theoretical standards.

That teachers hold different perceptions of the *achievability*, *preparedness* and *development-priority* of the elements of the standards was apparent from the item fit map (Figure 4.5) and confirmed empirically through a *t*-test. In general, estimates for *preparedness* were higher than those for *achievability* and *development-priority* indicating that teachers are less confident about beginning teachers' *preparedness* than they are about *achievability* and *development-priority*. On the other hand, the relatively low estimates for *development-priority* suggest a degree of teacher support for the elements of the theoretical standards.

As expected the difference between the perspectives was statistically significant ( $p < .001$ ). A non-parametric analysis to determine which of the domains contributed to this difference was



inconclusive in that it found statistically significant differences between the perspectives for all domains. Thus all domains contribute to the apparent differences between perspectives.

An examination of the correlations between *achievability*, *preparedness* and *development-priority* estimates determined in order to investigate the relationship between the perspectives found a relatively strong correlation ( $r=0.646$ ) between the estimates for the *achievability* and *preparedness*. From this, one could generalise that beginning teachers are perceived as being well-prepared for those elements of the standards deemed most-achievable and least-prepared for those elements deemed least-achievable. This result suggests that teachers are relatively consistent in their perceptions of *achievability* and *preparedness*.

The somewhat weaker correlation between estimates for *achievability* and *development-priority* ( $r=0.415$ ) suggested that teachers were less sure about the relationship between these two perspectives. The absence of a statistically significant correlation ( $r=0.105$ ) between *preparedness* and *development-priority* estimates was unexpected. It was anticipated that the perspectives would form an inverse relationship with the highest *development-priority* being afforded to elements of the standards for which beginning teachers were perceived to be least-prepared.

While there were elements of the standards for which an inverse relationship was apparent, there were others for which beginning teachers were relatively well-prepared with high *development-priority*. These elements were concerned with knowledge of subject matter, capacity to support learning and the creation of safe and secure environments.

Significantly, there were other elements with high *development-priority* for which beginning teachers were seen to be poorly-prepared. These were concerned with the teaching learning process and classroom management. Clearly, teachers surveyed had some concerns about the preparation of beginning teachers in terms of their capacity to manage the teaching/learning process and the challenging student behaviours that can arise as a result of this. Elements for which the reverse was true, that is high *preparedness* and low *development-priority* were more concerned with teachers' attitudes and values (2.3: *Are advocates for the subjects they teach*) and commitment to professional growth (6.3: *Take responsibility for their own professional growth*).

Likewise, there were other elements for which teachers were poorly-prepared and that had low priority for development. These were concerned with educational leadership and knowledge of educational theory. This suggests that *development-priority* may be related to teachers' perceptions of the importance of particular elements of the standards rather than any notion of *preparedness*. The low *development-priority* afforded to elements in domain 7: *Leadership in*

*communities of learning*, may be a consequence of the fact that the teachers surveyed did not see leadership as being as relevant to the teaching practice of beginning teachers as other standards.

Teachers' low perceptions of educational theory may be a response to their own knowledge of theory and initial preparation, which for some could be characterised as lacking in theory and focused on teaching methods or processes. Consequently they do not see the relevance of theory. There are several implications for the design of initial teacher education programs from these findings. The question for teacher educators is how to present educational theory and research as being relevant to improving pedagogy.

## CONCLUSIONS

This chapter addressed a number of research questions and hypotheses. These ranged from determining: the construct validity of the theoretical standards framework; the relevance of the domain structure; which elements of the standards were *achievable*; the level of *preparedness* of beginning teachers to meet the standards; the *development-priority* afforded to the standards; and, the implications for elements of the standards of overall perceptions of *achievability*, *preparedness*, and *development-priority*.

The results of the Rasch analysis confirmed the construct validity for the draft standards from all three perspectives. Despite the validity of the statistical constructs, the identification of an alternative organising framework for the standards, derived through factor analysis, is a cogent reminder that such frameworks are socially derived and negotiated.

Only two elements of the standards were seen as not fitting the statistical constructs. These elements (2.4 and 7.4) were seen as being not relevant to beginning teachers. The analysis showed also that the elements of the standards were considered not to be of equal *achievability*, *preparedness* or *development-priority*. Teachers' perceptions of *preparedness* to meet the standards were generally lower than their perceptions of *achievability* and *development-priority*. A two-tailed *t-test* for paired samples demonstrated that these differences were statistically significant.

Further, multivariate analysis showed that the differences in perceptions about the *achievability*, *preparedness* and *development-priority* of elements within the domains were also statistically significant. Across all perspectives, estimates for domain 7 were significantly different than for other domains, although the differences were not consistent across perspectives. This

suggests possibly that teachers surveyed did not see leadership, as expressed in the standards, as having as high a priority for beginning teachers as the standards in other domains.

The analysis of the standards, through the investigation of teachers' perceptions of *achievability*, *preparedness* and *development-priority*, proved to be useful in evaluating the relevance to teachers of specific elements of the standards. Further, teachers' low perceptions of beginning teachers' *preparedness* to meet the standards raise a number of issues for teacher educators and policy makers. Whether the perceptions are accurate or not could not be determined in this study. Nonetheless, steps need to be taken to counter the perceptions, or if true, the reality, of low quality outcomes from initial teacher preparation courses.

The next chapter extends this investigation of teachers' perceptions of *achievability*, *preparedness* and *development-priority* by exploring group differences to determine the consistency with which teachers approached the survey.

## **CHAPTER 5**

### **DIFFERENCES AMONGST GROUPS OF TEACHERS IN THEIR PERCEPTION OF THE THEORETICAL STANDARDS**

Teaching is, first and foremost a cultural activity, and notions of teacher quality have changed over time as ... society has shifted its values and concerns. Moreover, at any given time, different individuals and groups can hold very different ideas about teacher quality.

(Committee on Assessment and Teacher Quality, 2001, p.20)

#### **INTRODUCTION**

The previous chapter investigated teachers' overall perceptions of the theoretical professional standards and explored the way in which the teachers surveyed perceived the theoretical standards from three perspectives. This chapter builds on and expands these findings by exploring differences amongst groups of teachers' perceptions of the *achievability*, *preparedness* and *development-priority* of the draft theoretical standards.

The groupings of teachers identified for this aspect of the study are both polytomous (age, experience, position in school, and experience in mentoring student and beginning teachers) and dichotomous (primary and secondary school stages). Developing an understanding of whether different groups of teachers hold homogeneous or heterogeneous viewpoints of standards is important to developing an understanding about the range of consultative processes needed for developing standards and for ensuring their relevance and acceptance by teachers.

Teachers surveyed in Study 1 were requested to provide a range of personal information as part of their response to the survey. The information provided, concerned five characteristics noted above: years of teaching experience; age; school stage in which they work; position in the school; and experience in mentoring student and beginning teachers. Respondents were asked to indicate the category within each characteristic that applied to them. Each of these categories served as an identifier for a group of teachers.

These mainly polytomous groups were designed to support multivariate analysis. However, the *Compare* function of the *QUEST* software (Rasch analysis) is capable only of comparing dichotomous groups, so all polytomous groups were aggregated to provide dichotomous groups

for the second aspect of the investigation. The determination of these dichotomous groups although arbitrary was designed to provide groups of natural associations, for example, classroom and promoted teachers. Table 5.1 lists the groupings identified for each of the analytic techniques.

**TABLE 5.1: Groups of teachers identified through the survey**

Characteristic	Groups for MANOVA analysis	Groups for Rasch Analysis
<b>Years of experience</b>	<ul style="list-style-type: none"> <li>• 0-1 year</li> <li>• 2-6 years</li> <li>• 6-20 years</li> <li>• More than 20 years</li> </ul>	<ul style="list-style-type: none"> <li>• 0-6 years</li> <li>• More than 6 years</li> </ul>
<b>Teacher age</b>	<ul style="list-style-type: none"> <li>• 20-25 years</li> <li>• 26-30 years</li> <li>• 31-40 years</li> <li>• 41+ years</li> </ul>	<ul style="list-style-type: none"> <li>• 20-30 years</li> <li>• 31+ years</li> </ul>
<b>School stage</b>	<ul style="list-style-type: none"> <li>• Primary schools</li> <li>• Secondary schools</li> </ul>	<ul style="list-style-type: none"> <li>• Primary schools</li> <li>• Secondary schools</li> </ul>
<b>Position in school</b>	<ul style="list-style-type: none"> <li>• Classroom teacher</li> <li>• Middle Management (Head Teacher/ Executive Teacher /Assistant Principal)</li> <li>• School leader (Deputy Principal/Principal)</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom teacher</li> <li>• Promoted Teacher</li> </ul>
<b>Mentoring and supervision responsibilities</b> (during the last two years)	<ul style="list-style-type: none"> <li>• No mentoring experience</li> <li>• Mentored or supervised student teachers</li> <li>• Mentored or supervised beginning teachers</li> <li>• Mentored or supervised both student and beginning teachers</li> </ul>	<ul style="list-style-type: none"> <li>• No mentoring experience</li> <li>• Mentoring or supervisory experience</li> </ul>

The case estimates produced by the Rasch modeling of the three individual constructs of *achievability*, *preparedness* and *development-priority* described in the previous chapter are used in this chapter as interval scale measures of teachers' perceptions of the standards. The analytic tools used in this chapter are MANOVA and Rasch modeling. The significance of any overall differences, that is, differences between mean estimates for each group of teachers is investigated through the application of MANOVA. Differences in the perceptions of particular groups of teachers towards individual elements of the standards are investigated using Rasch analysis of Differential Item Functioning utilising the *Compare* function of the *QUEST* software.

The chapter is organised in five sections. The first five relate to the groups of teachers identified in the survey, that is groups differentiated on the basis of age, experience, school stage, position

in school, and mentoring and supervision responsibilities. Within each of these five sections the outcomes of the MANOVA and Rasch Differential Functioning analysis are discussed. The sixth section presents conclusions from the analysis.

### **YEARS OF TEACHING EXPERIENCE**

The experience that teachers bring to their consideration of the draft standards could be expected to have a significant effect on their judgements about the standards. In theory, years of teaching experience provide a practice-base for professional decision-making, but the length of time since teachers completed their training increasingly distances more experienced teachers from knowledge of current teacher preparation practices.

The next two sub-sections investigate the significance of differences amongst the polytomous groups based on years of teaching experience using a MANOVA and between dichotomous groups using Differential Item Functioning.

#### **Analysis of Overall Difference - MANOVA**

A MANOVA was performed using the SPSS software package. The independent groups for this analysis were the four 'years of teaching experience' groups (Table 5.1) and the dependent variables the Rasch case estimates calculated for *achievability*, *preparedness* and *development-priority* in Chapter 4.

Assumptions concerning cell size, univariate and multivariate normality and linearity among dependent variables for the MANOVA were investigated and considered to have been met. Other assumptions were examined within the MANOVA analysis. These include Box's test of homogeneity of the covariance matrices, and Levene's test of equality of error variances. Homogeneity of covariance was assumed since Box's test was not statistically significant ( $p > 0.1$ ).

Likewise univariate homogeneity of variance for each of three perspectives was confirmed by the Levene Statistic ( $p > 0.01$ ). The Regression menu of SPSS was used to determine Mahalanobis distances for the identification of multivariate outliers. Only two outliers were identified as having Mahalanobis distances greater than the critical chi-square value of 16.2 ( $df=3$ ,  $p < 0.001$ ). These were retained in the data set as the small number of cases involved ( $n=354$ ), would have inconsequential impact on the analysis (Coakes & Steed, 2003).

The Pillai's Trace measure indicated a statistically significant multivariate effect for *years of teaching experience* ( $p=0.01$ ). An examination of the univariate tests indicated a statistically significant effect between years of teaching experience and perceptions of beginning teachers' *preparedness* to meet the standards. There were no statistically significant effects between years of teaching experience and *achievability* or *development-priority*.

Post hoc tests conducted using Tuckey's HSD indicated that teachers in their first year of teaching have significantly different perceptions about *preparedness* to meet the standards than those with 6-20 years of teaching experience ( $p=0.01$ ) or more than 20 years ( $p=0.02$ ) of teaching experience. Mean estimates for each group of teachers are presented in Table 5.2.

**TABLE 5.2: Mean *Preparedness* case estimates by years of teaching experience**

Teaching Experience In Years	Mean Estimate	Standard Deviation	<i>n</i>
0-1 year	.380	.798	29
2-6 years	.175	1.023	52
6-20 years	-.185	.847	107
More than 20 years	-.146	.894	150

These data indicate that teachers in their first year of teaching perceived beginning teachers to be more prepared to meet the draft standards than did teachers with 6-20 years of experience and teachers with more than 20 years of experience.

### Differential Item Functioning

This sub-section uses the Rasch *Compare* function to examine the effect of years of teaching experience on teachers' perceptions of individual elements of the standards.

The *Compare* function of *QUEST* software supports analysis of Differential Item Functioning. It calculates a range of "item bias indices including Mantel-Haenszel tests of Differential Item Functioning" (Adams & Khoo, 1996) to determine the degree to which specific items or in this case specific elements of the standards are treated differentially by different groups of subjects. In this analysis, the responses of those with 0-6 years of teaching experience were compared with

those with more than six years of teaching experience. Results reported for each perspective were obtained through separate application of the software.

### ***Protocol for discussion of results***

The *Compare* function in its normal usage reports on test items determined as easier for one group than for the other. In the context of the analyses of Differential Item Functioning that follow in this chapter 'easier' is understood to mean to be 'more achievable,' to be 'more prepared for' or to be assigned a 'higher *Preparedness*.' This is not a comment on the quantum or overall measure of *achievability*, *preparedness* or *development-priority* of individual elements of the draft standards, rather a measure of the extent of the difference between the perceptions of one group and another.

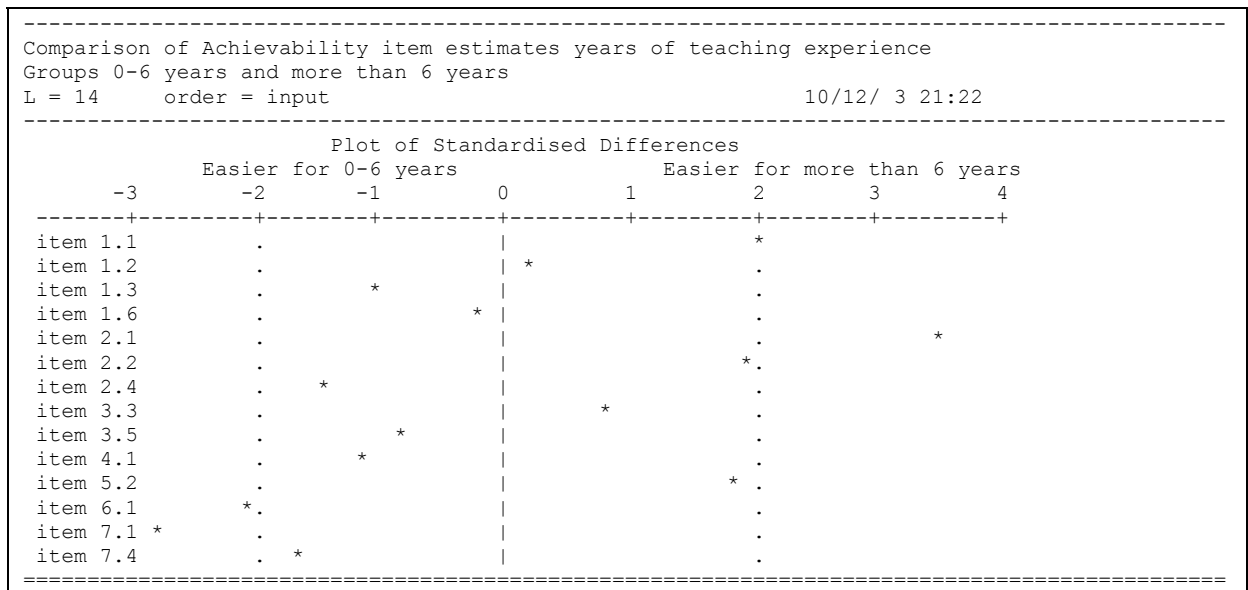
To simplify and assist the discussion of the results of Differential Item Functioning analyses the following protocol is used. When an element is described as being supported by one group, this means that the group mentioned saw that element of the standards as having a greater *achievability*, *preparedness* or *development-priority* than the other group. For example a statement such as, 'more experienced teachers saw element 1.1 as being more achievable' means that more experienced teachers saw element 1.1 as being more achievable by beginning teachers than did less experienced teachers. In addition, where the extent of differential functioning was statistically significant, *p* values are reported.

Despite the fact that elements 2.4 and 7.4 were considered not to fit the construct, they were not removed from the analyses undertaken in Chapter 4. The decision to retain them was based on a judgement that their removal had little apparent impact on the determination of other statistics. Consequently, the responses to these items were also retained in the analyses of Differential Item Functioning in this chapter. The following sections describe the results of the Differential Item Functioning for each of the three perspectives.

### ***Achievability***

Fourteen elements of the standards were identified as having been treated differentially by the two groups (Figure 5.1). Of these groups, eight were perceived to have higher *achievability* by the less experienced group and six by the more experienced group. Items treated differentially were from six of the seven domains. The extent of Differential Item Functioning was statistically significant for four elements of the draft standards.





**Figure 5.1: Differential Item Functioning: Comparison of *Achievability* estimates: Years of teaching experience**

More experienced teachers rated the *achievability* of elements 1.1: *Demonstrate high levels of care and commitment to their students* ( $p=0.04$ ) and 2.1: *Demonstrate their knowledge, skills, understanding and values of the subject(s) they teach* ( $p<0.01$ ) more highly. Less experienced teachers rated more highly elements 6.1: *Continuously reflect on their practice and its effect on student learning* ( $p=0.04$ ) and 7.1: *Seek to create learning communities* ( $p=0.01$ ) than their more experienced colleagues.

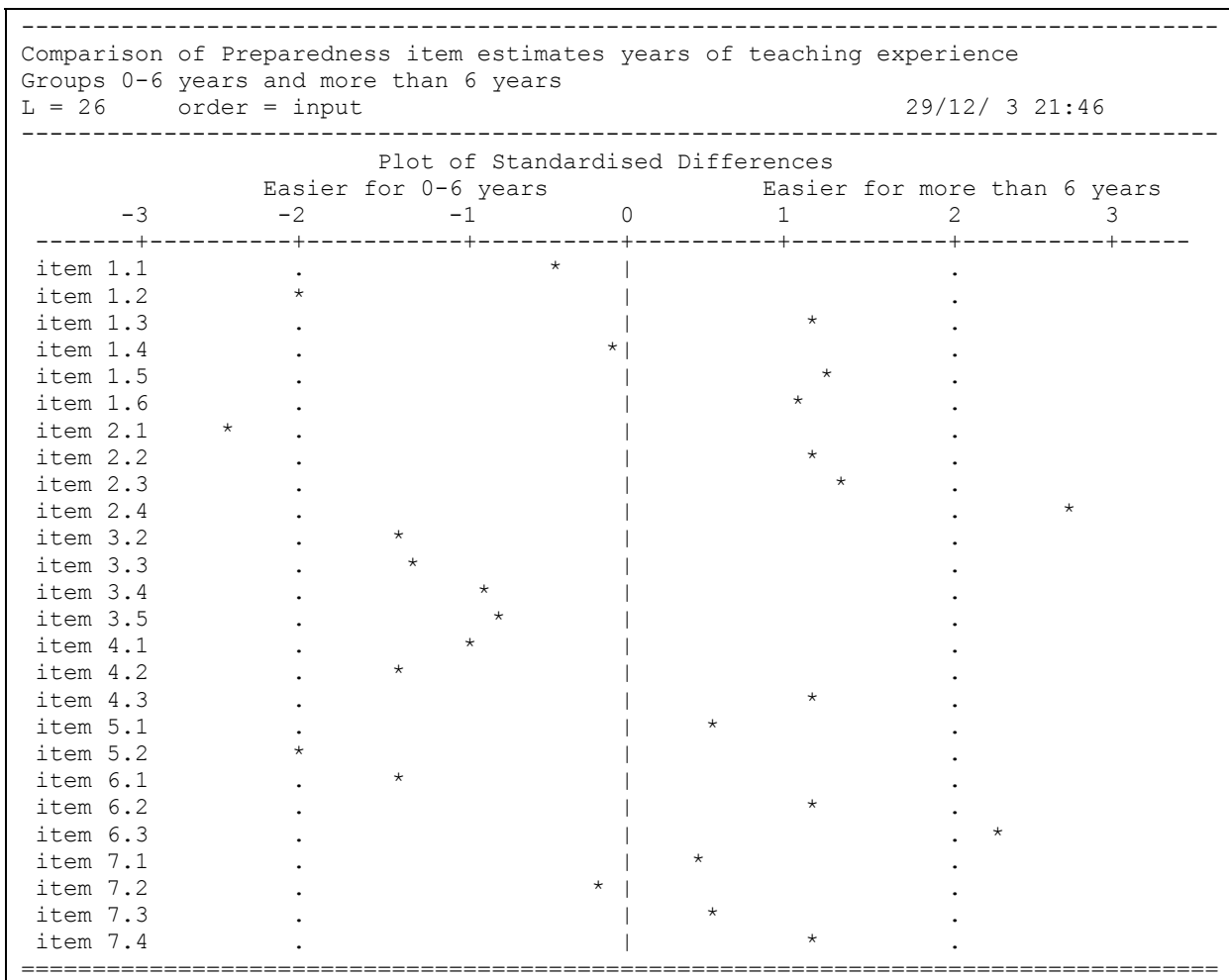
### **Preparedness**

With the exception of element 3.1, all elements of the draft standards were treated differentially by teachers from the two groups (Figure 5.2). The 26 elements treated differentially were divided equally across the less experienced and more experienced groups of teachers. The greater level of Differential Item Functioning is consistent with the more strongly held perceptions about *preparedness* identified in the previous chapter.

A possible association between the perceptions of the less experienced and more experienced teacher groups and the domains was apparent in Figure 5.2. Apart from domain 1, where equal numbers of elements were favoured by the two groups, there appears to be a bias in the support from the two groups for elements of the standards within particular domains. For example:

- more experienced teachers are more confident, generally, of beginning teachers' *preparedness* to meet elements of the standards in domains 2, 6 and 7.

- less experienced teachers saw beginning teachers to be more prepared to meet elements from domains 3 and 4.



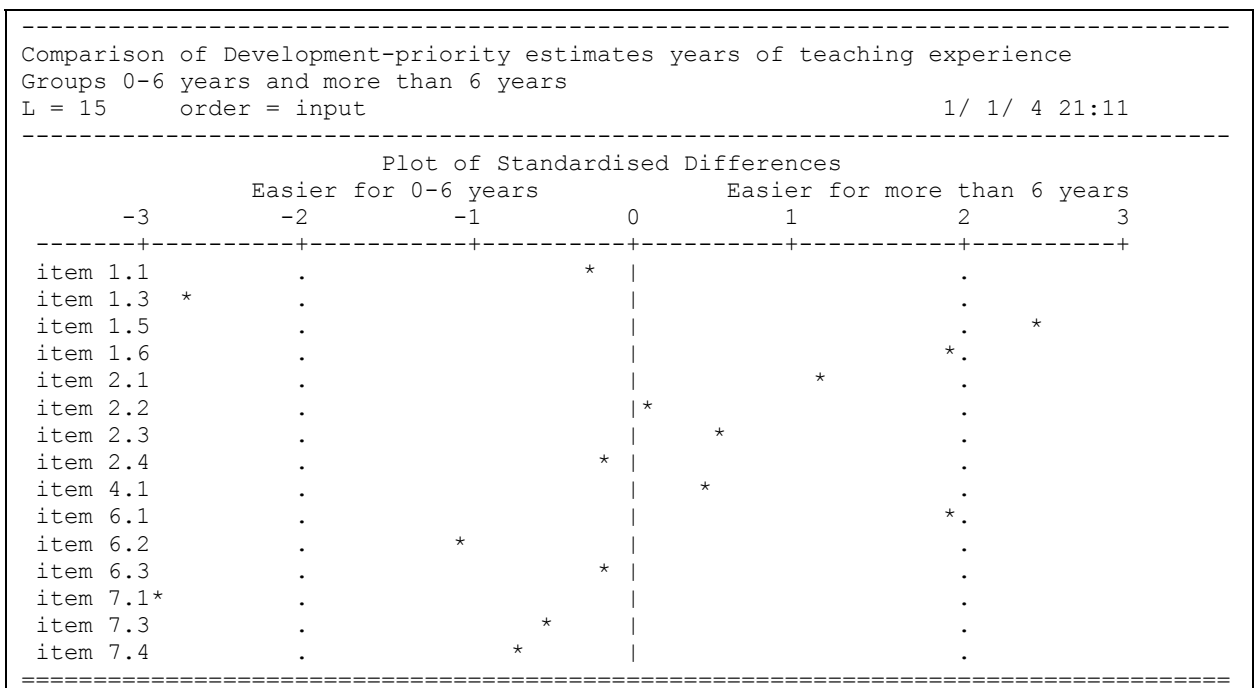
**Figure 5.2: Differential Item Functioning: Comparison of Preparedness estimates: Years of teaching experience**

The extent of Differential Item Functioning was statistically significant for five elements. Of these, the less experienced group of teachers rated more highly the *preparedness* of beginning teachers to meet elements 1.2: *Treat all students justly and equitably, and with an appropriate sense of good humour* ( $p=0.05$ ), 2.1: *Demonstrate their knowledge, skills, understanding and values of the subjects(s) they teach* ( $p=0.01$ ) and 5.2: *Create safe and secure environments for young people* ( $p=0.04$ ). Elements rated more highly by the more experienced group of teachers included 2.4: *maintain the currency of their content knowledge* ( $p=0.01$ ) and 6.3: *Take responsibility for their own professional growth* ( $p=0.02$ ).

**Development-priority**

Differential Item Functioning effects were less obvious for *development-priority* than for *preparedness* (Figure 5.3). Only fifteen items or elements of the standards were treated differentially.

There were no differences in the responses of the less and more experienced teacher groups for domains 3 and 5. Less experienced teachers gave a higher *development-priority* to elements of the standards in two areas. These relate to care and commitment of students and the creation of learning communities.



**Figure 5.3: Differential Item Functioning: Comparison of *Development-priority* estimates: Years of teaching experience**

More experienced teachers gave higher priority to development of elements of the theoretical standards associated with respect for individualism, knowledge of subject content, assessment of student achievement and reflection.

There were five elements for which the differences in *development-priority* between the groups were statistically significant. The less experienced group of teachers gave higher *development-priority* to achievement of elements 1.3: *Know, critically review, and use as appropriate, a range of educationally sound theories* ( $p=0.01$ ) and 7.1: *Seek to create learning communities* ( $p<0.01$ ). More experienced teachers gave higher *development-priority* to development of elements 1.5: *Respect the dignity and individualism of students* ( $p=0.01$ ), 1.6: *Ensure that their goals for student learning are consistent with those set out in relevant state and nationally agreed objectives such*

as, for example, the Board of Studies syllabuses and the Common and Agreed National Goals for Schooling in Australia ( $p=0.05$ ), and 6.1: Continuously reflect on their practice and its effect on student learning ( $p<0.01$ ).

The differences amongst the perceptions of groups of teachers with different teaching experience identified through the MANOVA and Differential Item Functioning analysis are discussed below.

### Discussion

The analysis described above explored the effects of teachers' years of experience on their perceptions of the draft teaching standards. A statistically significant difference was identified between the overall perceptions of *preparedness* of the beginning teacher group, that is those with 0-1 year of experience, and those groups with 6-20 and more than 20 years of experience. Similar differences were not found for teachers' perceptions of *achievability* and *development-priority*. Interestingly, these results indicate that teachers in their first year of teaching are more confident about their *preparedness* to meet the standards than their more experienced colleagues.

There are a number of possible explanations of these findings. First, it is likely that teachers' perceptions of *preparedness* are influenced by the recency of their initial preparation. Older teachers may not be as familiar with the content and expectations of current initial teacher preparation course and, therefore, are less confident about beginning teachers' capacities to meet the elements of the standards. Second, it could be possible that current initial teacher preparation is better than that experienced by their older peers and that younger teachers understand their shortcomings better. The third possible explanation is that more experienced teachers are more aware of the breadth and complexity of the teaching role and are therefore more cautious about judgements of *preparedness* than their less experienced colleagues.

The absence of a statistically significant difference amongst teachers' perceptions of *achievability* and *development-priority* suggests that these constructs may not be as well understood by teachers as that of *preparedness*. Consequently, the perceptions of teachers with different levels of experience of the *achievability* and *development-priority* of the elements of the standards were relatively homogeneous regardless of the extent of experience of teachers surveyed.

The analysis of Differential Item Functioning identified a number of elements where the perceptions of the less and more experienced groups were statistically significant. While a number of these elements functioned differentially in relation to a single perspective, two elements functioned differentially with respect to two perspectives. These were element 2.1 *Demonstrate*

*their knowledge, skills, understanding and values of the subjects(s) they teach and element 7.1 Seek to create learning communities.*

Teachers with more than 6 years of experience saw element 2.1 to be more achievable than teachers with less experience. The opposite was true however, in relation to *preparedness* with the less experienced holding stronger views about beginning teachers' *preparedness* to meet this element.

This first result appears to be inconsistent with the concerns reported by the Ramsey review of teacher education in NSW (Ramsey, 2000) and wider debates about the extent and nature of content knowledge preparation provided in course of initial teacher preparation, particularly for primary teachers. It appears to suggest that more experienced teachers are not concerned about beginning teachers' knowledge of subject content. Conversely, the stronger perception of less experienced teachers that beginning teachers are prepared to meet element 2.1 appears to reflect their confidence in the efficacy of their content knowledge preparation.

Less experienced teachers saw element 7.1 as being more achievable and as having a higher *development-priority* than their more experience colleagues. One possible explanation of this difference is that the concept of 'learning communities' is a relatively recent focus of teacher education courses. Less experienced teachers are more likely to be familiar with the concept and see these capacities as being both achievable and needing development.

## TEACHER AGE

Age is a significant discriminating factor amongst teachers. The ages of those teachers sampled in this survey ranged from their early twenties to their late fifties. Teachers surveyed were asked to indicate their age in 4 categories (See Table 5.1). Although teachers' age and experience are relatively analogous, the effect of age on teachers' perceptions of the standards was investigated to determine whether age or experience was a factor impacting on responses to the survey instrument.

As with the prior section of this chapter, MANOVA was used to identify overall differences amongst the responses of the polytomous age groups, and Differential Item Functioning, the difference between the dichotomous age groups.

### Analysis of Overall Difference - MANOVA

Independent groups for the analysis to determine the overall effect of age on teachers' perceptions comprised the four 'age' groups identified in Table 5.1. Once again, the dependent variables were those derived from Rasch case estimates calculated for *achievability*, *preparedness* and *development-priority* in Chapter 4.

Cell size, univariate and multivariate normality and linearity among dependent variables assumptions were tested and considered to have been met. Homogeneity of covariance was assumed since Box's test was not statistically significant ( $p > 0.5$ ). Likewise, univariate homogeneity of variance for each of three perspectives was confirmed by the Levene statistic ( $p > 0.05$ ). Outliers identified during the previous analysis of Mahalanobis distances were ignored.

A statistically significant multivariate effect for teachers' age was indicated by the Pillai's Trace statistic ( $p = 0.02$ ). A statistically significant univariate effect ( $p = 0.004$ ) was evident between teachers' age and *preparedness* of beginning teachers to meet the standards. There were no statistically significant effects between teachers' age and perceptions of *achievability* or *development-priority*.

Post hoc tests conducted with Tuckey's HSD indicated that the youngest group of teachers, that is those aged from 20-25 years, had significantly different perceptions of beginning teachers *preparedness* to meet the standards than those of teachers aged from 30-40 years ( $p = 0.014$ ) and teachers aged 41 or more years ( $p = 0.004$ ). Mean estimates for each of the groups are displayed in Table 5.3.

**TABLE 5.3: Mean *Preparedness* case estimates by Teacher age**

Teachers' age	Mean Estimate	Standard Deviation	<i>n</i>
20-25 years	.415	.968	33
26-30 years	.085	.958	40
31-40 years	-.171	.911	60
41 + years	-.153	.863	205

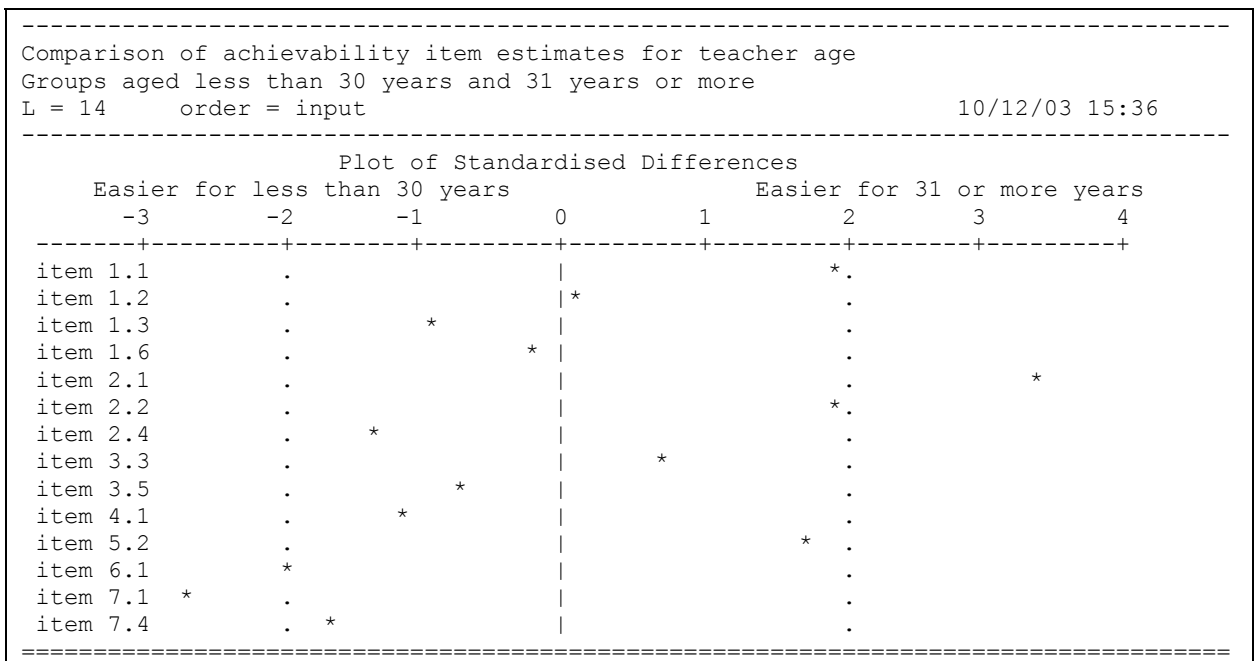
As in the previous analysis based on years of experience, younger teachers were more confident of beginning teachers' *preparedness* than their older peers.

### Differential Item Functioning

This sub-section examines Differential Item Functioning of elements of the standards comparing responses of teachers aged between 20-30 years with those aged 31 or more years. The analysis was undertaken using the methodology described above.

#### **Achievability**

Figure 5.4 indicates that 14 elements of the standards were identified as being treated differentially by the two age-based groups. The younger group of teachers perceived eight elements of the standards to be more achievable, while the older group of teachers perceived six elements of the standards as more achievable. The greatest difference in perception was apparent in domains 1 and 2 where seven elements of the draft standards were identified as functioning differentially.



**Figure 5.4: Differential Item Functioning: Comparison of *Achievability* estimates: Teacher age**

The extent of Differential Item Functioning in responses to the *achievability* question was statistically significant for only five elements of the standards. Of these, elements *6.1: Continuously reflect on their practice and its effect on student learning* ( $p=0.05$ ) and *7.1: Seek to create learning communities* ( $p=0.01$ ) were rated as more achievable by younger teachers.

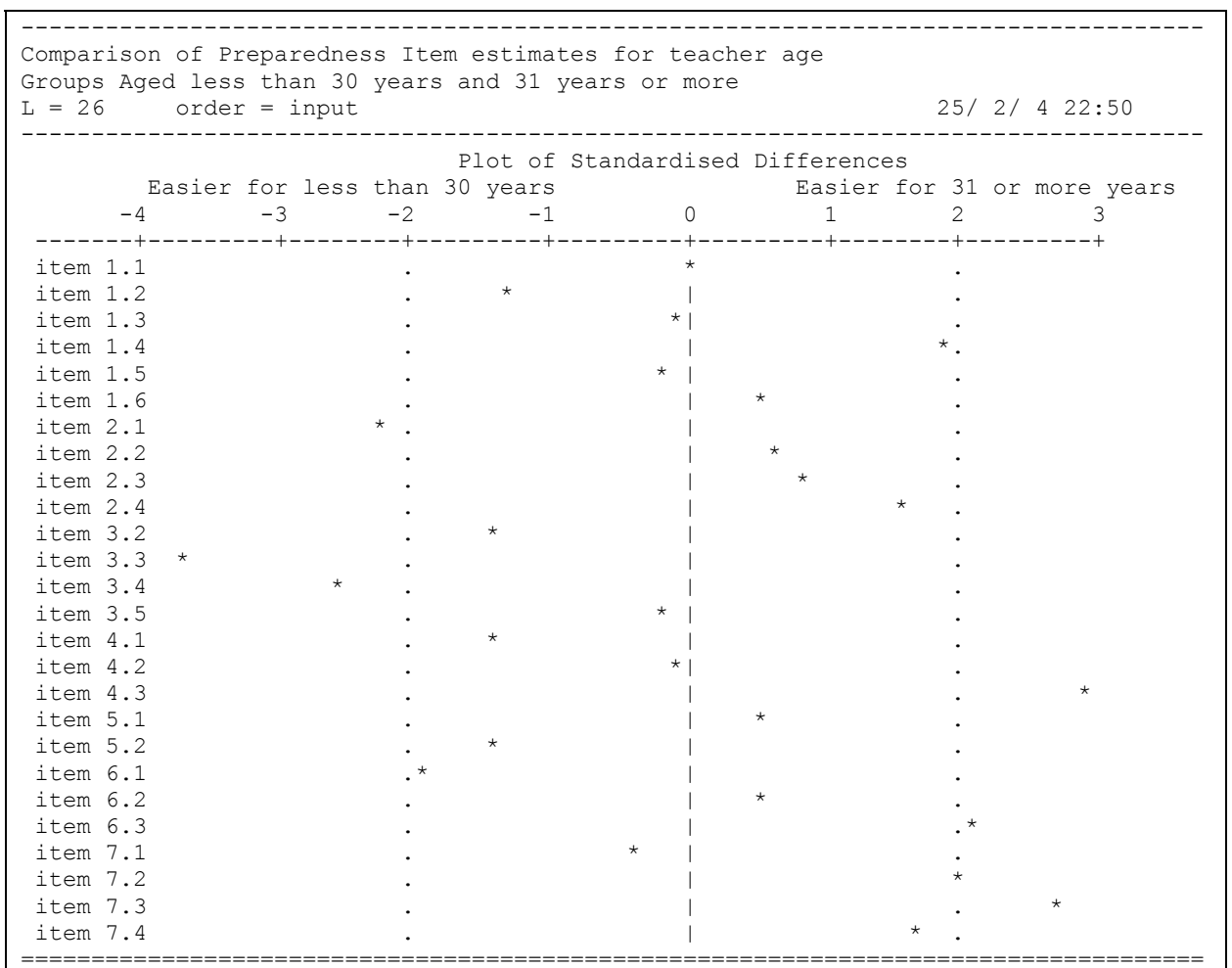
Elements rated more achievable by the older group of teachers include *1.1: Demonstrate high levels of care and commitment to their students* ( $p=0.05$ ), *2.1: Demonstrate their knowledge, skills,*

understanding and values of the subjects(s) they teach ( $p < 0.01$ ) and 2.2: Model the values of the scholar-teacher ( $p = 0.05$ ). The implication of these results is discussed at the end of this section.

**Preparedness**

The diversity of teachers' views about the preparedness of beginning teachers to meet the draft standards evident in earlier analysis in this and the previous chapter was again obvious in this analysis. Twenty-six of the 27 elements of the standards functioned differentially.

Figure 5.5 indicates that for 13 elements of the draft standards, teachers less than 30 years of age rated beginning teachers' preparedness more highly. However, for only four of these elements was this differential functioning statistically significant.



**Figure 5.5: Differential Item Functioning: Comparison of Preparedness estimates: Teacher age**

These were elements 2.1: Demonstrate their knowledge, skills, understanding and values of the subjects(s) they teach ( $p < 0.01$ ), 3.3: Manage the learning environments in which they work

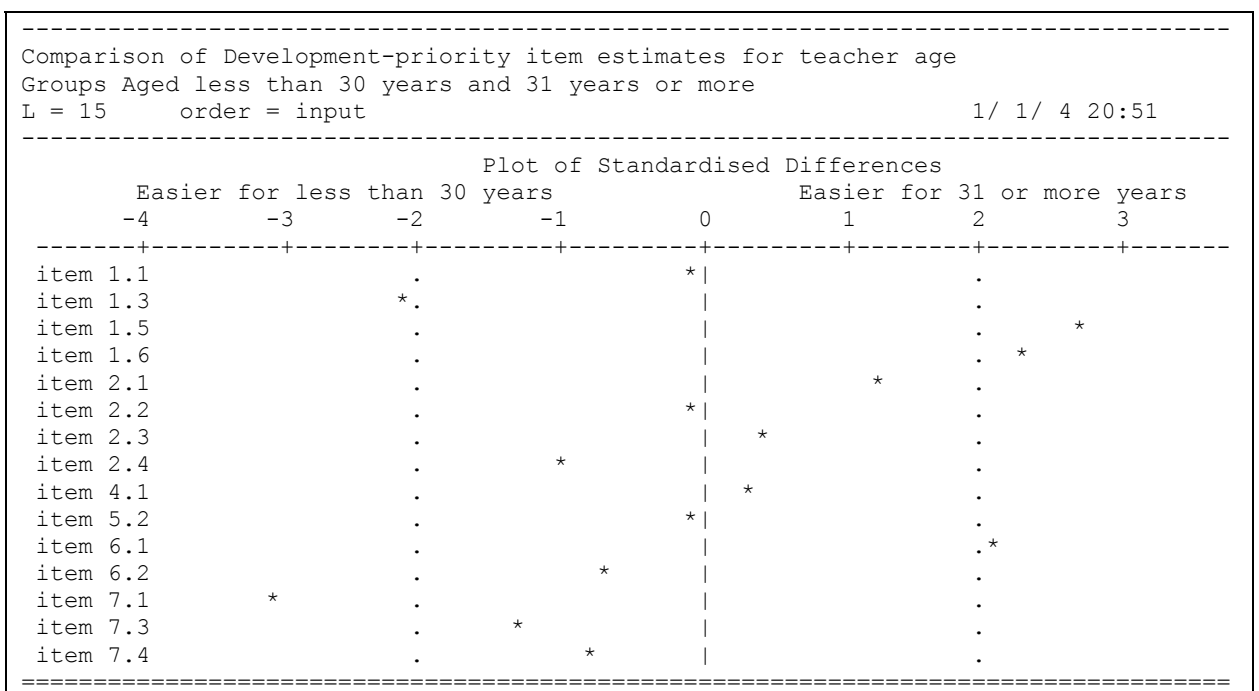


( $p<0.01$ ), 3.4: *Are flexible in their approach to teaching* ( $p=0.01$ ) and 6.1: *Continuously reflect on their practice and its effect on student learning* ( $p=0.05$ ).

Conversely, of the 12 elements of the standards that older teachers rated more highly, there were five elements where the difference was statistically significant. These were 1.4: *Recognise that they can enhance students' potential as lifelong and independent learners by enabling them to take responsibility for their own learning* ( $p<0.01$ ), 4.3: *Convey meaningful and useful information to students and parents* ( $p<0.01$ ), 6.3: *Take responsibility for their own professional growth* ( $p<0.01$ ), 7.2: *Demonstrate educational leadership* ( $p<0.01$ ) and 7.3: *Sustain learning through their capacity to promote change and innovation* ( $p=0.03$ ).

### **Development-priority**

The two groups of teachers held different perceptions of 15 elements of the standards (Figure 5.6). The younger group of teachers assigned a higher *development-priority* to nine elements of the standards. The older group ranked six elements of the standards more highly.



**Figure 5.6: Differential Item Functioning: Comparison of *Development-priority* estimates: Teacher age**

The extent of Differential Item Functioning was statistically significant for two-of-the-nine elements of the standards given a higher *development-priority* by the younger group of teachers. These were elements 1.3: *Know, critically review, and use as appropriate, a range of educationally sound theories* ( $p=0.03$ ) and 7.1: *Seek to create learning communities* ( $p<0.01$ ).

The higher ratings given by the older group of teachers were statistically significant in three cases: elements 1.5: *Respect the dignity and individualism of students* ( $p=0.01$ ); 1.6: *Ensure that their goals for student learning are consistent with those set out in relevant state and nationally agreed objectives such as, for example, the Board of Studies syllabuses and the Common and Agreed National Goals for Schooling in Australia* ( $p=0.02$ ), and 6.1: *Continuously reflect on their practice and its effect on student learning* ( $p=0.03$ ).

### Discussion

The analysis described above explored the effects of teachers' age on their perceptions of the draft teaching standards. Differences amongst the *achievability* and *development-priority* perceptions of the different aged groups of teachers were not statistically significant. A statistically significant difference was identified, however, between the *preparedness* perceptions of the group of teachers aged 20-25 years and those of teachers aged 30-40 years, as well as with those aged 41 or more years.

Consistent with the findings about the relationship between years of teaching experience and teachers' perceptions of the draft standards, the youngest group of teachers that is those aged 20-25, perceived beginning teachers to be more prepared to meet the standards than the two oldest groups of teachers, those aged 31-40 years and those aged 41 or more years.

Despite the fact that a significant proportion of teachers entering the profession are of mature age, there is still a correlation between teacher age and teacher experience. The possibility that these related groups would hold similar perceptions was not unexpected. Therefore, the reasons advanced in the previous section for the differences amongst the groups differentiated on the basis of experience are also relevant to the differences in perceptions of groups differentiated on the basis of age. These reasons relate to differences in length of time since the initial preparation of younger and older teachers, possible differences in the quality of initial preparation provided to younger and older teachers, and to the greater knowledge of older teachers about the capacities of beginning teachers derived through experience.

The outcomes of the analysis of Differential Item Functioning between teachers aged less than 30 years and those aged more than 30 years were distinct, however, from those of the experience-based analysis. Three elements were identified that functioned differentially across two perspectives on the basis of age. These were element 2.1 *Demonstrate their knowledge, skills, understanding and values of the subject(s) they teach*, element 6.1: *Continuously reflect on their practice and its effect on student learning*, and element 7.1 *Seek to create learning communities*.

In relation to element 2.1, younger teachers held stronger views about its *achievability* and *preparedness* than their older colleagues. These results are different from, but not inconsistent with those from the experience-based analysis. Younger teachers are more confident of the ability of beginning teachers to achieve this element of the standards, as well as being more prepared for it. Once again, the likely causes of the differential functioning relate to the confidence of young teachers in their initial preparation. The lower ratings by more experienced teachers may also reflect their less optimistic views of beginning teachers' subject content knowledge.

Element 6.1 was seen to have greater *achievability* by younger teachers, and to have a greater *development-priority* by older teachers. This could be interpreted as meaning that, while younger teachers see this element as being more achievable than do their older colleagues, older teachers see beginning teachers as needing to develop in this area.

These somewhat contradictory views may well be caused by different understandings of the meaning of the term 'reflection.' Although the term may be traced back to Dewey (Rodgers, 2002), its intended meaning and application in contemporary education is not well understood. For many older teachers, the term 'reflection' represents just another example of contemporary educational jargon. Many younger teachers will be familiar, however, with the term, if not its intended meaning, having been asked to 'reflect on their practice' as part of their initial preparation.

Element 7.1 was perceived to have greater *achievability* and to have higher *development-priority* by the younger group of teachers. These findings mirror those determined by the experience-based analysis. Once again, the concept and implications of learning communities for practice might not be well understood by older teachers.

## **SCHOOL STAGE**

Unlike experience and age, school stage is a dichotomous concept. The MANOVA and analysis of Differential Item Functioning were therefore performed on identical groups.

### **Analysis of Overall Difference - MANOVA**

The independent variables for the analysis were the two 'school stage' groups, primary and secondary identified in Table 5.1. The dependent variables for the analysis were the Rasch case estimates calculated for *achievability*, *preparedness* and *development-priority* in Chapter 4.

Descriptive statistics for the primary and secondary sub-groups are presented in Table 5.4. For each perspective, the mean case estimate and distribution of cases for primary and secondary teachers was similar. The Tests for cell size, univariate and multivariate normality and linearity among dependent variables assumptions were tested previously and considered to have been met.

**Table 5.4: Mean *Achievability*, *Preparedness* and *Development-priority* case estimates by School stage**

Perspective	School stage	Mean	Std. Deviation	<i>n</i>
<b><i>Achievability</i></b>	Primary	1.3474	1.08606	144
	Secondary	1.1129	1.08970	190
	Total	1.2140	1.09271	334
<b><i>Preparedness</i></b>	Primary	-.0621	.95282	144
	Secondary	-.0656	.87337	190
	Total	-.0641	.90708	334
<b><i>Development-priority</i></b>	Primary	1.5492	.83784	144
	Secondary	1.4089	1.02413	190
	Total	1.4694	.94952	334

Homogeneity of covariance was assumed since Box's test was not statistically significant ( $p > 0.01$ ). Likewise univariate homogeneity of variance for each of three perspectives was confirmed by the Levene statistic ( $p > 0.01$ ). Once again the effect of outliers on the analysis was ignored. The MANOVA confirmed that the differences between the mean case estimates were not statistically significant for any of the perspectives.

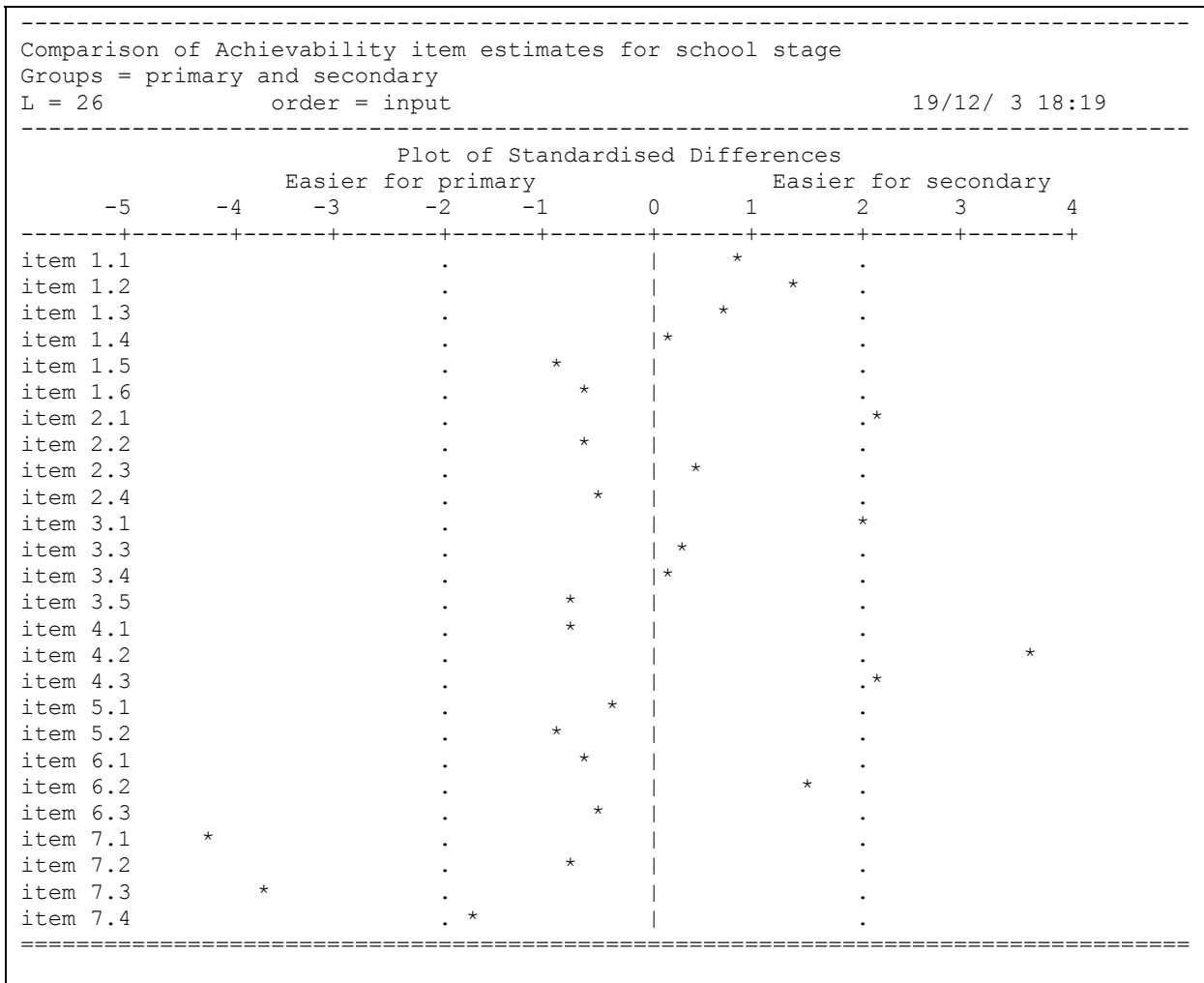
### Differential Item Functioning

This sub-section investigates differences between primary and secondary teachers' perceptions of individual elements of the standards.

#### ***Achievability***

Twenty-six of the 27 items were treated differentially by primary and secondary teachers (Figure 5.7). Primary teachers appeared to give higher ratings for *achievability* on slightly more than half of these items. The extent of Differential Item Functioning was statistically significant for 2 elements seen as more achievable by primary teachers. These elements were 7.1: *Seek to*

create learning communities ( $p < 0.01$ ) and 7.3: Sustain learning through their capacity to promote change and innovation ( $p < 0.01$ ).



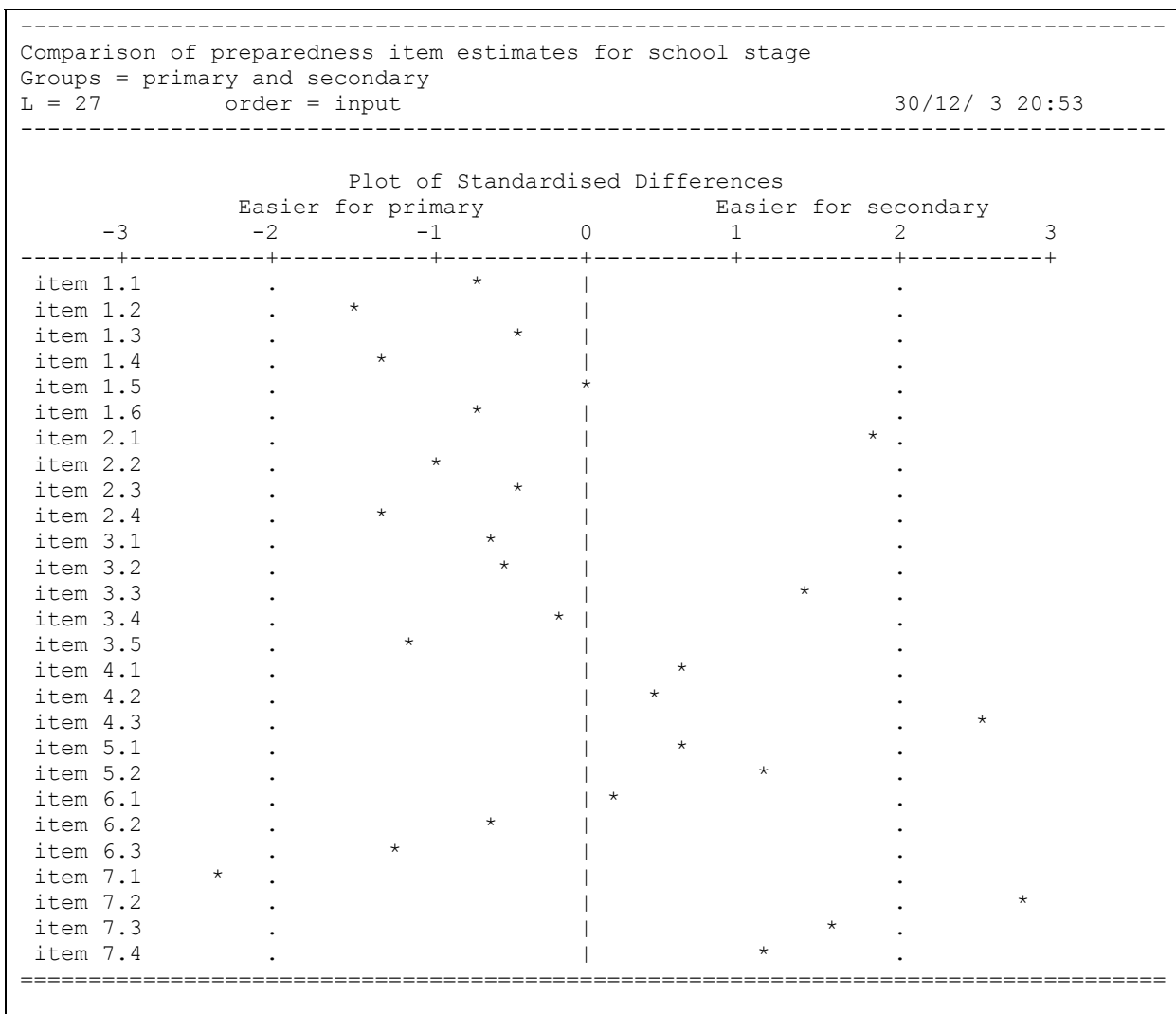
**Figure 5.7: Differential Item Functioning: Comparison of Achievability estimates: School stage**

The difference was statistically significant for four of the elements seen by secondary teachers as more achievable. These included elements 2.1: *Demonstrate their knowledge, skills, understanding and values of the subjects(s) they teach* ( $p=0.03$ ), 3.1: *Are able to communicate to others the knowledge, understanding, skills and values of the subjects they teach* ( $p=0.04$ ), 4.2: *Integrate student assessment and reporting into teaching and learning* ( $p < 0.01$ ) and 4.3: *Convey meaningful and useful information to students and parents* ( $p=0.03$ ).

**Preparedness**

The differing perceptions of primary and secondary teachers about beginning teachers' *preparedness* to meet the elements of the standards are presented in Figure 5.8.

It is apparent from Figure 5.8 that primary teachers rated more highly beginning teachers' *preparedness* to meet 15 of the 27 elements of the standards. Secondary teachers rated more highly the *preparedness* of beginning teachers to meet 11 elements of the standards.

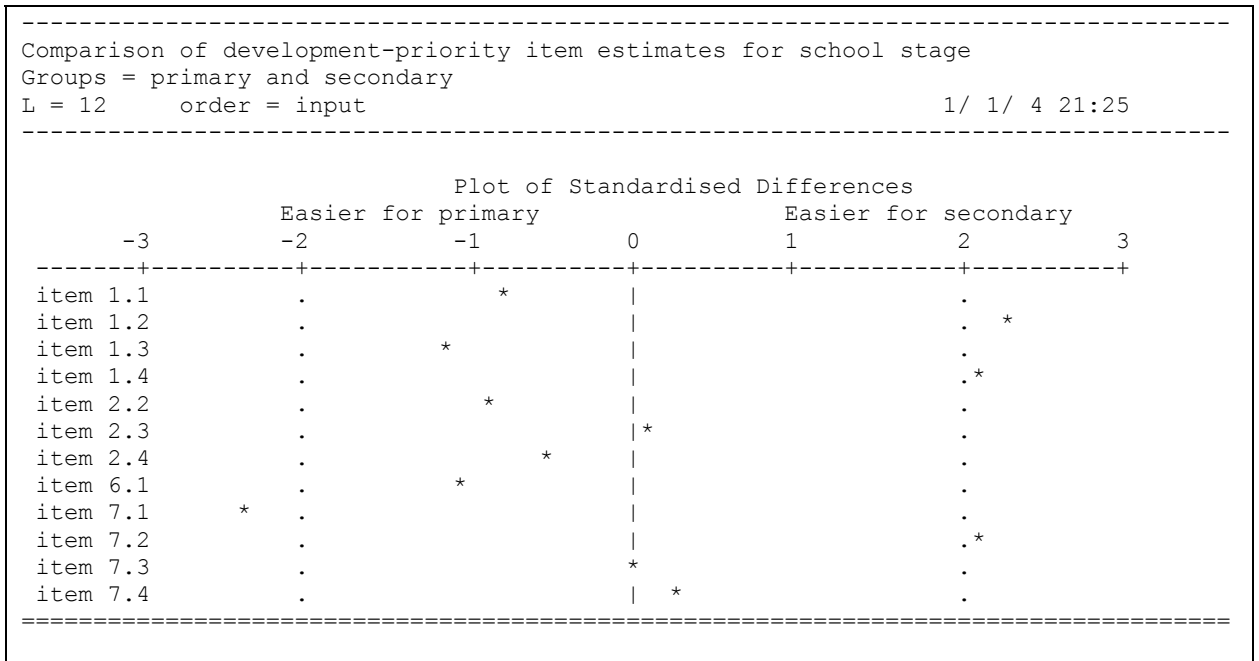


**Figure 5.8: Differential Item Functioning: Comparison of *Preparedness* estimates: School stage**

However, the extent of Differential Item Functioning was statistically significant for 3 elements of the standards. Primary teachers indicated a greater *preparedness* for element 7.1: *Seek to create learning communities* ( $p=0.02$ ), while secondary teachers indicated greater *preparedness* for elements 4.3: *Convey meaningful and useful information to students and parents* ( $p=0.02$ ) and 7.2: *Demonstrate educational leadership* ( $p=0.01$ ).

**Development-priority**

The extent of Differential Item Functioning for primary and secondary teachers with respect to the *development-priority* question was less than that for *achievability* or *preparedness* (Figure 5.9). Twelve elements exhibited Differential Item Functioning. There was no differential functioning associated with elements in domains 3, 4 or 5.



**Figure 5.9: Differential Item Functioning: Comparison of *Development-priority* estimates: School stage**

The extent of Differential Item Functioning was statistically significant for four elements. These included element 7.1: *Seek to create learning communities* ( $p=0.02$ ) afforded a higher *development-priority* by primary teachers. Elements 1.2: *Treat all students justly and equitably, and with an appropriate sense of good humour* ( $p=0.02$ ), 1.4: *Recognise that they can enhance students' potential as lifelong and independent learners by enabling them to take responsibility for their own learning* ( $p=0.03$ ) and 7.2: *Demonstrate educational leadership* ( $p=0.04$ ) were given a higher *development-priority* by secondary teachers.

**Discussion**

The previous analyses have used differences in the personal characteristics of teachers (age and experience) to identify different groups of teachers. School stage represents, however, a contextual variable that may have significant implications for the applicability of professional standards across all schools. The development of generic forms of professional standards for primary and secondary teachers is predicated on the standards being applicable to both groups.

There were no statistically significant differences in the mean case estimates for *achievability*, *preparedness* or *development-priority* of the primary and secondary teachers sampled in this study. The absence of this statistically significant difference in mean estimates was surprising given the anecdotal evidence available about perceptions of different priorities, often encapsulated by such aphorisms as ‘primary teachers teach students whereas secondary teachers teach subjects.’ Consequently, Differential Item Functioning was used to determine whether there were any statistically significant differences in the way primary and secondary teachers perceived the standards.

This analysis identified three elements of the standards that functioned differentially across two or more perspectives. These were element 4.3: *Convey meaningful and useful information to students and parents* 7.1: *Seek to create learning communities* and element 7.2: *Demonstrate educational leadership*

Secondary teachers ranked element 4.3 more highly on *preparedness* and *development-priority* than primary teachers. The greater ranking of this element by secondary teachers may be a consequence of the different contexts in which primary and secondary teachers work in NSW. These differences in context relate to the different curriculum, assessment and accountability regimes. With respect to curriculum, primary syllabus documents have greater numbers of outcomes for teachers to report upon than secondary syllabuses. Further the outcomes of primary syllabuses are less clearly defined, and often integrated across subjects.

In addition, secondary teachers have a long history of being accountable to parents for the outcomes of curriculum-based external examinations. While in recent times primary teachers have been held accountable for the outcomes of basic skills tests (literacy and numeracy) they do not have the same heritage of public external examinations as secondary teachers. This suggests that secondary teachers are more practised and confident than primary teachers in their capacity to report meaningful information to parents.

Element 7.1 was ranked more highly by primary teachers on all three perspectives. There are a range of possible reasons for this result related to the different physical and organisational structures of primary and secondary schools in NSW. The organisation of secondary teachers into the ‘silos,’ that is, physically dispersed and organisationally separated faculties or departments, is counter-intuitive to the collaborative structures that underpin the concept of ‘learning communities.’ The organisation of primary schools is more eclectic. The staff is generally located in a single staffroom; they work collaboratively on cross-curriculum issues; and consequently, their professional support structures are different to those operating in secondary schools.



The third element to function differentially, element 7.2 was ranked more highly by secondary school teachers on both the *preparedness* and *development-priority* scales. This suggests that secondary teachers value the development of leadership skills more highly than primary teachers. As for element 7.1, the reasons for this difference are structural. Leadership is more explicit in secondary schools. Their organisation into faculties and departments means that there are more opportunities and rewards for positional or supervisory leadership.

In the context of the application of generic professional teaching standards, the results above do suggest that generic standards can be applied across primary and secondary schools. The next section compares classroom teachers' response to the standards with that of teachers in promotion positions.

### **POSITION IN SCHOOL**

The position held by a teacher in a school differentiates their experiences, and therefore, potentially their responses to the survey instrument. While on the one hand, teachers are promoted because of their teaching capacity and leadership skills, on the other their promotion can distance them from the day-to-day teaching process. These tensions lend themselves to the investigation that follows in this section.

Teachers completing the survey were asked to place themselves into one of three categories Table 5.1 representing classroom teachers, middle management and school leaders. Dichotomous groups comprising classroom and promoted teachers were formed for the analysis of Differential Item Functioning.

### **Analysis of Overall Difference - MANOVA**

The three 'position in school groups' identified in Table 5.1 formed the independent variables, and the Rasch case estimates calculated for *achievability*, *preparedness* and *development-priority* in Chapter 4 formed the dependent variables for the analysis. Mean *achievability* and *preparedness* case estimates for the three groups determined by position in school are set out in Table 5.5.

Consistent with previous analyses, assumptions for cell size, univariate and multivariate normality and linearity among dependent variables assumptions were considered to have been met. However, the null hypothesis of equal covariance matrices tested via Box's Test of equality of covariance was rejected as the significance level was small ( $p=0.001$ ). The rejection of this hypothesis means that the results of this analysis need to be treated with caution as the normality

of the dependent variables necessary for the multivariate test cannot be assumed. Even so, univariate homogeneity of variance for the three perspectives was confirmed by the Levene statistic ( $p>0.02$ ). As with the prior analyses, the effect of outliers on the analysis was ignored.

**Table 5.5: Mean *Achievability* and *Preparedness* case estimates by Position in School**

Perspective	Position in School	Mean	Std. Deviation	<i>n</i>
<b><i>Achievability</i></b>	Classroom teachers	1.218	1.044	214
	Middle Management (Head Teacher/ Executive Teacher /Assistant Principal)	0.917	1.232	53
	School Leaders (Deputy Principal/ Principal)	1.409	1.103	68
	Total	1.209	1.094	335
<b><i>Preparedness</i></b>	Classroom teachers	0.036	0.925	214
	Middle Management (Head Teacher/ Executive Teacher /Assistant Principal)	-0.337	0.834	53
	School Leaders (Deputy Principal/ Principal)	-0.214	0.865	68
	Total	-0.074	0.909	335

The Pillai's Trace statistic indicated a statistically significant multivariate effect for position in school ( $p=0.014$ ). Consequently, a statistically significant univariate effect was identified between position in school and *achievability* ( $p=0.05$ ) and *preparedness* ( $p=0.01$ ). Post hoc analysis undertaken with Tuckey's HSD test indicated statistically significant differences between the mean *achievability* estimates of middle management and school leaders groups ( $p=0.037$ ), and the mean *preparedness* estimates for classroom teachers and middle management ( $p=0.02$ ).

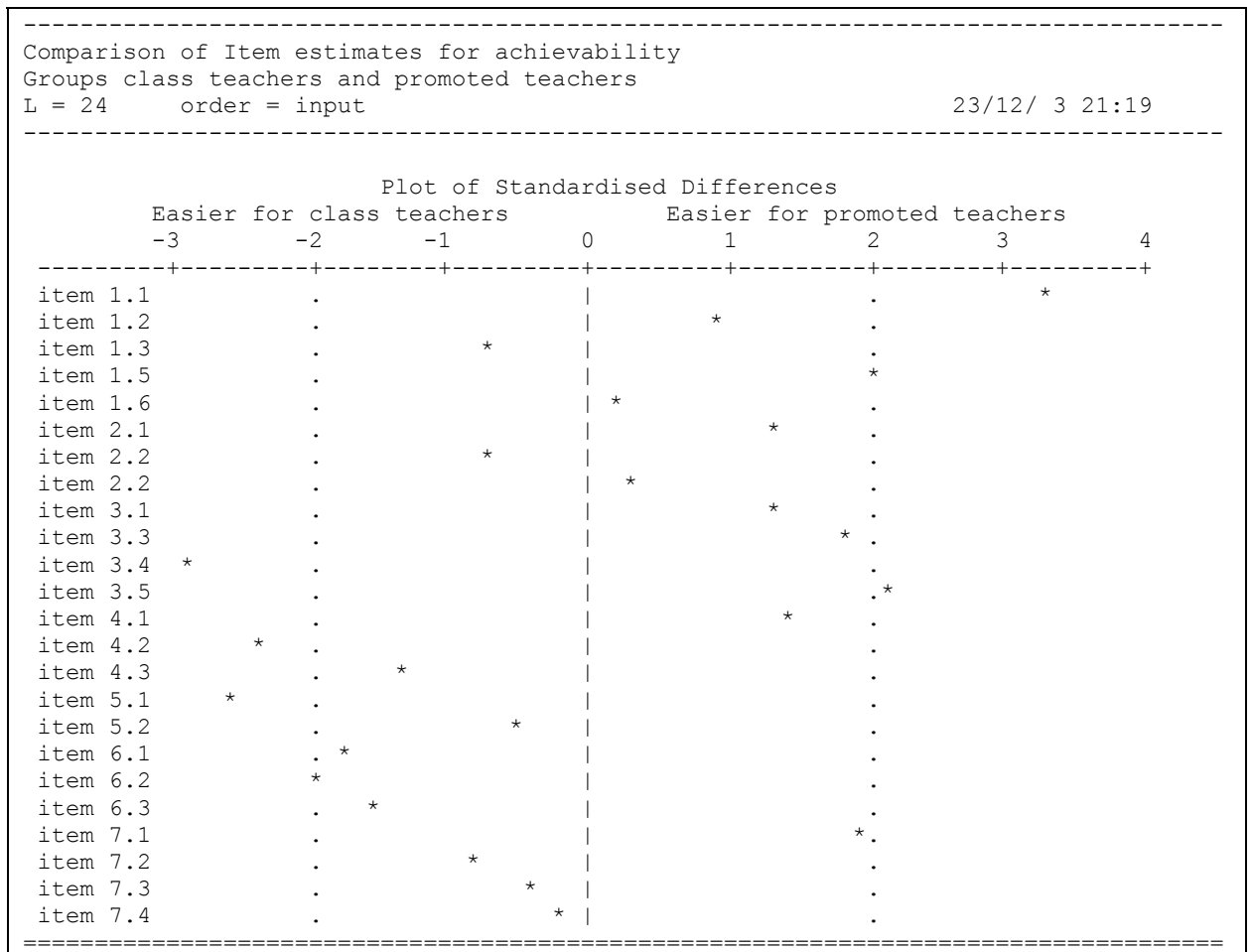
### Differential Item Functioning

The three groups identified by position in school were collapsed into two groups for analysis of Differential Item Functioning. An analysis of the difference in responses of classroom teachers and promoted teachers follows.

#### ***Achievability***

There were 24 elements of the standards ranked differentially by classroom and promoted teachers, with classroom teachers indicating greater support for 13 of these. Although the

elements represented were from all domains, there was an apparent pattern to the *achievability* preferences of classroom and promoted teachers (Figure 5.10).



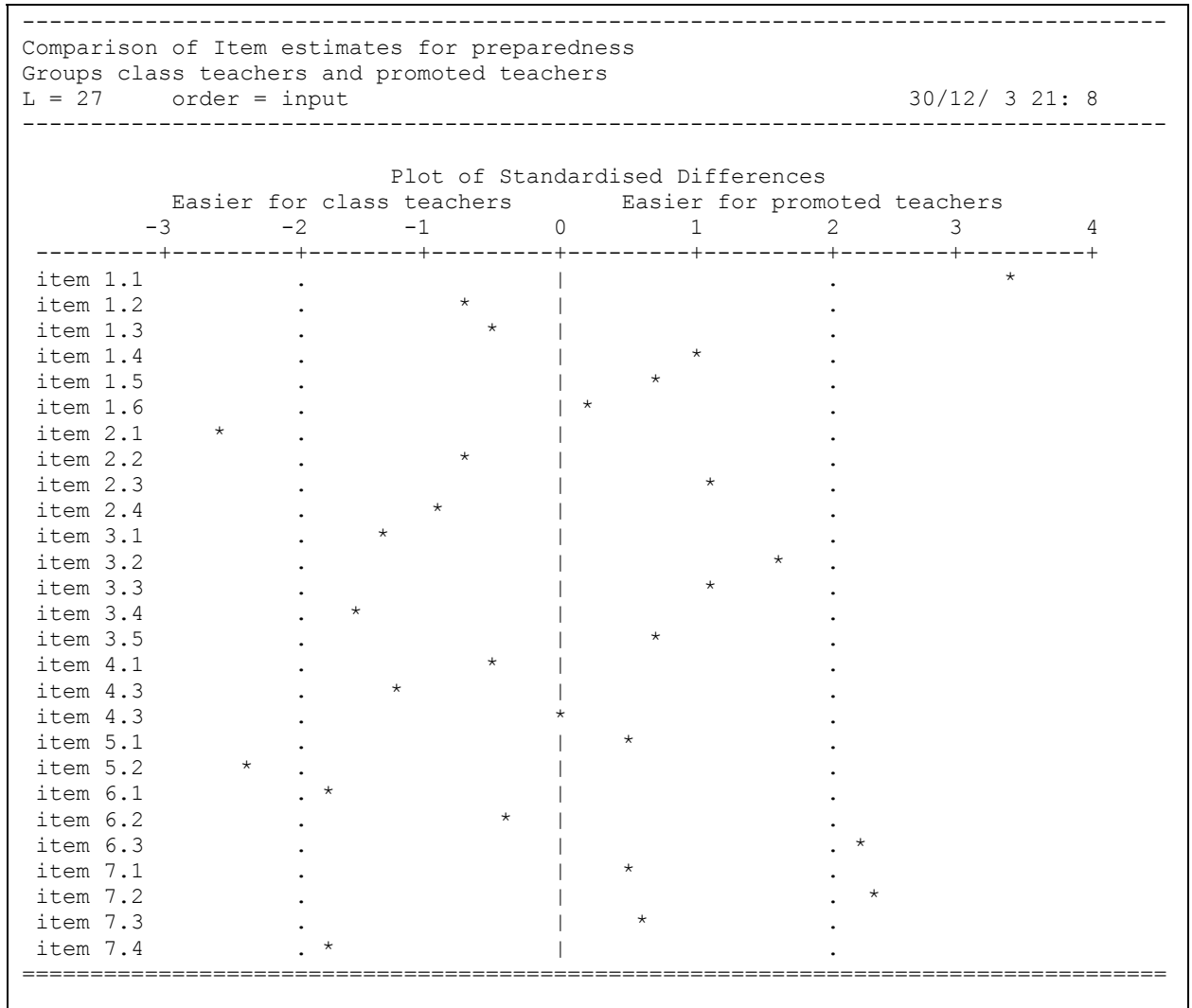
**Figure 5.10: Differential Item Functioning: Comparison of *Achievability* estimates: Position in school**

In general, promoted teachers rated elements from domains 1, 2 and 3 more highly than classroom teachers, whereas the classroom teachers rated elements from domains 4, 5, 6 and 7 more highly. For seven of the 24 elements ranked differentially, the extent of Differential Item Functioning was statistically significant. These included elements 1.1: *Demonstrate high levels of care and commitment to their students* ( $p < 0.01$ ), 1.5: *Respect the dignity and individualism of students*, ( $p = 0.04$ ) and 3.5: *Plan for individual student's learning* ( $p = 0.03$ ) rated more highly by promoted teachers.

On the other hand, elements 3.4: *Are flexible in their approach to teaching* ( $p < 0.01$ ), 4.2: *Integrate student assessment and reporting into teaching and learning* ( $p = 0.02$ ), 5.1: *Establish classroom management strategies that support student learning* ( $p = 0.01$ ) and 6.2: *Are lifelong learners* ( $p = 0.05$ ) were seen as being more achievable by classroom teachers.

**Preparedness**

All 27 elements of the standards exhibited some Differential Item Functioning in relation to the *preparedness* question (Figure 5.11).



**Figure 5.11: Differential Item Functioning: Comparison of *Preparedness* estimates: Position in school**

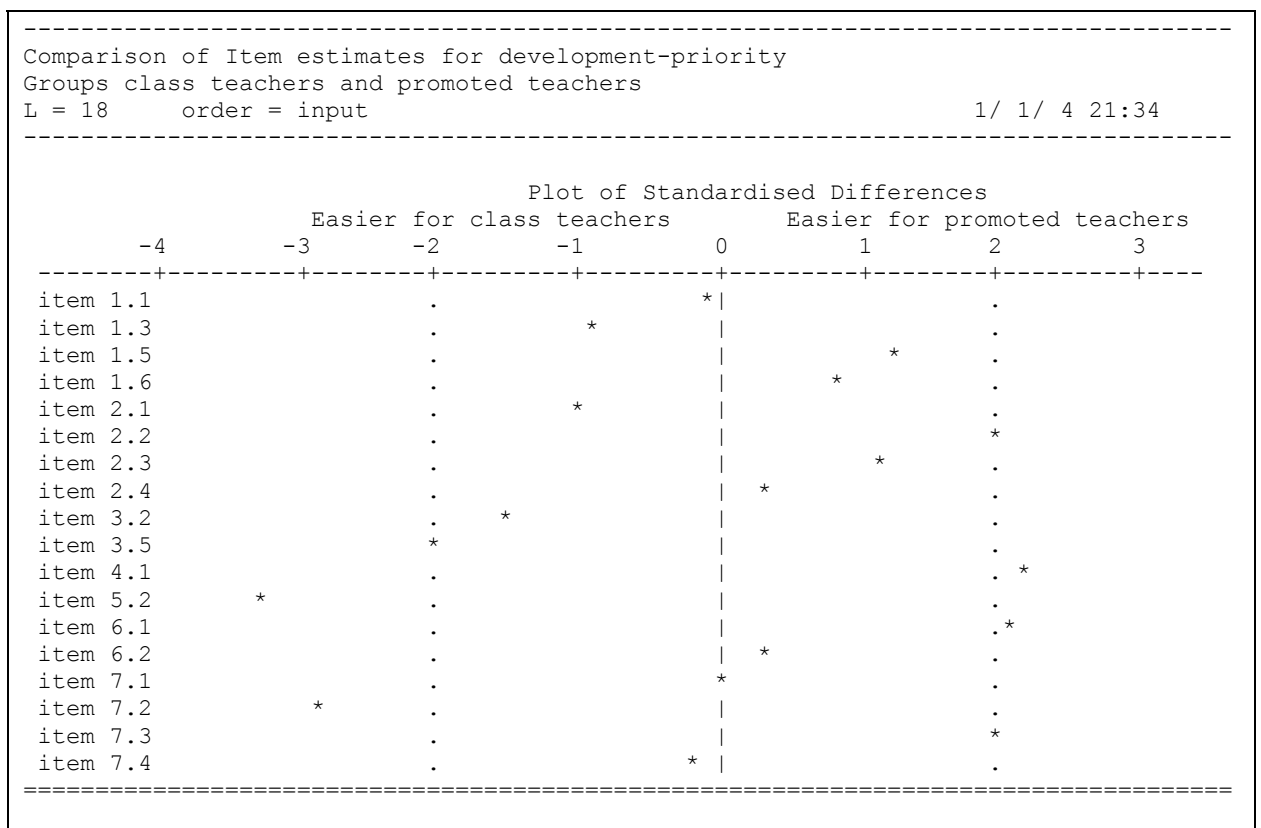
Equal numbers of elements were supported more strongly by the classroom and promoted teacher groups. Unlike the prior analysis for *achievability*, the classroom and promoted teachers groups demonstrated no clear preference for elements from any particular domain. The extent of Differential Item Functioning was statistically significant for five elements of the standards.

These included elements *1.1: Demonstrate high levels of care and commitment to their students*, ( $p < 0.01$ ), *6.3: Take responsibility for their own professional growth* ( $p = 0.02$ ) and *7.2: Demonstrate educational leadership* ( $p = 0.02$ ) rated more highly for *preparedness* by promoted teachers, and elements *2.1: Demonstrate their knowledge, skills, understanding and values of the subjects(s)*

they teach ( $p=0.01$ ) and 5.2: Create safe and secure environments for young people ( $p=0.02$ ) rated more highly by classroom teachers.

### **Development-Priority**

Compared with the analysis undertaken for *achievability* and *preparedness*, fewer elements exhibited Differential Item Functioning with respect to the *development-priority* perspective (Figure 5.12).



**Figure 5.12: Differential Item Functioning: Comparison of *Development-priority* estimates: Position in school**

In total, 18 elements exhibited Differential Item Functioning, with eight being preferred by classroom teachers and ten by promoted teachers. There was no apparent association between the elements rated more highly by either of the groups and the domains underpinning the draft standards.

The extent of Differential Item Functioning was statistically significant for seven elements. Three of these were assigned a higher *development-priority* by classroom teachers. These were 3.5: Plan for individual student's learning ( $p=0.05$ ), 5.2: Create safe and secure environments for young people ( $p<0.01$ ) and 7.2: Demonstrate educational leadership ( $p<0.01$ ).

The remaining four elements for which the extent of Differential Item Functioning was statistically significant were *2.2: Model the values of the scholar-teacher* ( $p=0.05$ ), *4.1: Understand that the primary purpose of assessment is to provide information on student achievement and progress to inform future teaching and learning* ( $p=0.03$ ), *6.1: Continuously reflect on their practice and its effect on student learning* ( $p=0.04$ ) and *7.3: Sustain learning through their capacity to promote change and innovation* ( $p=0.05$ ). These four were more strongly supported by promoted teachers.

### Discussion

While position in school is indicative to some extent of experience, it indicates also differences in expertise. Teachers are promoted because they are able to demonstrate increased educational, as well as managerial, capacity. It was to be expected, therefore, that the groups of teachers identified by position in the school may hold different views about the draft standards.

While recognising that not all assumptions underlying the MANOVA tests were met for the analysis described above, the analysis identified statistically significant differences between the mean *achievability* estimate of the school leaders and middle management groups and between the mean *preparedness* estimate of the classroom teachers and middle management groups. In both instances, the mean estimate of the middle management group was lower than those of the other groups.

This result indicated that the middle management group saw beginning teachers as less able to achieve the draft standards than the principals' group, and less prepared to meet them than the classroom teacher group. Clearly, the middle management group has more direct responsibility for the supervision of beginning teachers than either of the other groups, and would be expected to be more familiar with their capabilities and characteristics. Their more cautious approach is likely to be an expression of their greater appreciation of beginning teachers' knowledge, skills and capacities. Consequently, there is a need to have regard for the views of school middle managers in the development of standards for beginning teachers.

The analysis of Differential Item Functioning identified four elements that functioned differentially across two or more perspectives. These were element *1.1 Commitment to students and their development*, element *3.5: Plan for individual student's learning*, element *5.2: Create safe and secure environments for young people* and element *7.2: Demonstrate educational leadership*.

Promoted teachers saw beginning teachers as being more able to achieve element 1.1 as well as having greater *preparedness* to meet it than classroom teachers. Such differences are likely to represent an expression of the responsibility promoted teachers have to ensure that all students

have both access to high quality teaching and the opportunity to learn. While promoted teachers are accountable to ensure beginning teachers are committed to their students, they are also assumed to have a greater understanding of student needs than classroom teachers.

With regard to element 3.5, promoted teachers saw beginning teachers as more able to achieve it than did classroom teachers, but classroom teachers judged it to have a higher *development-priority*. This element could be seen to be a more focused expression of element 1.1, implying that beginning teachers should be able to cater for individual student differences within their planning. While promoted teachers may believe that beginning teachers should be able to address this element, the response by unpromoted teachers appears to suggest that unpromoted teachers believe there is a need for increased professional development in this area of teaching.

Element 5.2 was ranked more highly on *preparedness* and *development-priority* by classroom teachers. The difference in *preparedness* response to this element is likely to reflect a more cautious assessment by promoted teachers of beginning teachers' understandings of their responsibilities in relation to 'duty-of-care,' child protection and occupational health and safety. The higher ranking of *development-priority* by classroom teachers may represent divergent views about the efficacy of training provided to teachers in this area. Promoted teachers are likely also to have had greater access to training in these areas than classroom teachers because they have greater responsibility for their implementation.

Promoted teachers saw beginning teachers to be more prepared for element 7.2 with classroom or unpromoted teachers awarding it a higher *development-priority*. The differential functioning associated with this element appears to reflect views about whether leadership is a developed or an innate capacity. Promoted teachers would point to the role of innate abilities and personal efforts in achieving promotion to a leadership position. Classroom teachers would point to the lack of opportunities for developing leadership capacities.

## **MENTORING AND SUPERVISION**

Although there is an increasing emphasis on mentoring in the literature (Allen & Poteet, 1999; Huling & Resta, 2001; Mullinix, 2002; Wang, 2001), the practice of supervising and mentoring student and beginning teachers is long standing. Four groups of mentors and supervisors were identified (see Table 5.1) based on their recent experience in mentoring or supervising student and beginning teachers. Possible differences amongst these groups' overall perceptions of the standards were explored through MANOVA and Differential Item Functioning.

### Analysis of Overall Difference - MANOVA

The four mentoring and supervision groups identified in Table 5.1 acted as independent variables for a MANOVA analysis. Mean *Achievability*, *Preparedness* and *Development-priority* estimates are presented in Table 5.6.

**Table 5.6: Mean *Achievability*, *Preparedness* and *Development-Priority* case estimates by Mentoring/Supervisory experience**

	MENTORING / SUPERVISORY EXPERIENCE	Mean	Std. Deviation	<i>n</i>
<b><i>Achievability</i></b>	No mentoring experience	1.1094	1.01122	136
	Mentored or supervised student teachers	1.2730	1.04661	80
	Mentored or supervised beginning teachers	1.1523	1.07661	30
	Mentored or supervised both student and beginning teachers	1.3064	1.20961	94
	Total	1.2061	1.08207	340
<b><i>Preparedness</i></b>	No mentoring experience	-.0638	.97272	136
	Mentored or supervised student teachers	.0543	.78508	80
	Mentored or supervised beginning teachers	-.1787	.92083	30
	Mentored or supervised both student and beginning teachers	-.1665	.87155	94
	Total	-.0746	.89923	340
<b><i>Development-Priority</i></b>	No mentoring experience	1.4349	.94073	136
	Mentored or supervised student teachers	1.4836	.94254	80
	Mentored or supervised beginning teachers	1.3723	.83524	30
	Mentored or supervised both student and beginning teachers	1.5139	.99168	94
	Total	1.4627	.94381	340

As indicated for previous analyses, assumptions underpinning the MANOVA concerning cell size, univariate and multivariate normality and linearity among dependent variables assumptions were considered to have been met. Homogeneity of covariance was assumed since Box's test was not statistically significant ( $p > 0.02$ ). Likewise univariate homogeneity of variance for each of three perspectives was confirmed by the Levene statistic ( $p > 0.1$ ). Once again the effect of outliers on the analysis was ignored.

The Pillai's Trace statistic indicated no statistically significant multivariate effects and therefore no statistically significant differences ( $p = 0.73$ ) between the mean *achievability*, *preparedness* and *development-priority* estimates of teachers in the four mentoring and supervisory groups identified.

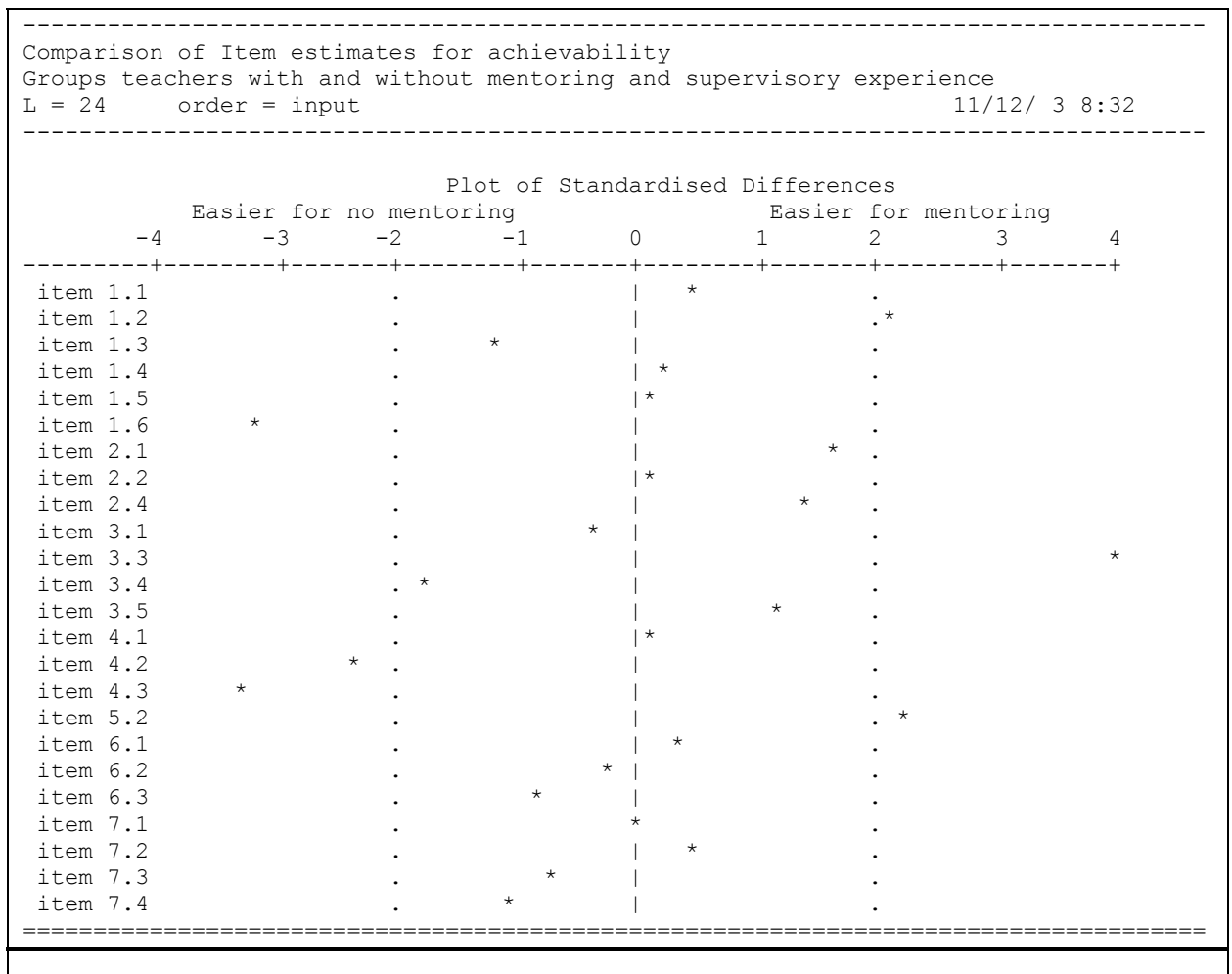


### Differential Item Functioning

The four groups identified were collapsed into two groups consisting of teachers with and without mentoring or supervisory experience. An analysis of the extent of Differential Item Functioning for each perspective follows.

#### **Achievability**

Twenty-four elements of the standards exhibited some Differential Item Functioning (Figure 5.13). A majority of these elements (13) was seen as more achievable by teachers with mentoring and supervisory experience. There was no apparent association between preference of either group for particular elements of the standards and the domains which underpin the standards.



**Figure 5.13: Differential Item Functioning: Comparison of *Achievability* estimates: Mentoring and supervisory experience**

The extent of Differential Item Functioning was statistically significant for six elements of the standards. There were three elements where the *achievability* perceptions of teachers with no mentoring or supervisory experience were significantly different from those of teachers with such experience. These were element 1.6: *Ensure that their goals for student learning are consistent with those set out in relevant state and nationally agreed objectives such as, for example, the Board of Studies syllabuses and the Common and Agreed National Goals for Schooling in Australia* ( $p < 0.01$ ), element 4.2: *Integrate student assessment and reporting into teaching and learning* ( $p = 0.02$ ) and element 4.3: *Convey meaningful and useful information to students and parents* ( $p < 0.01$ ).

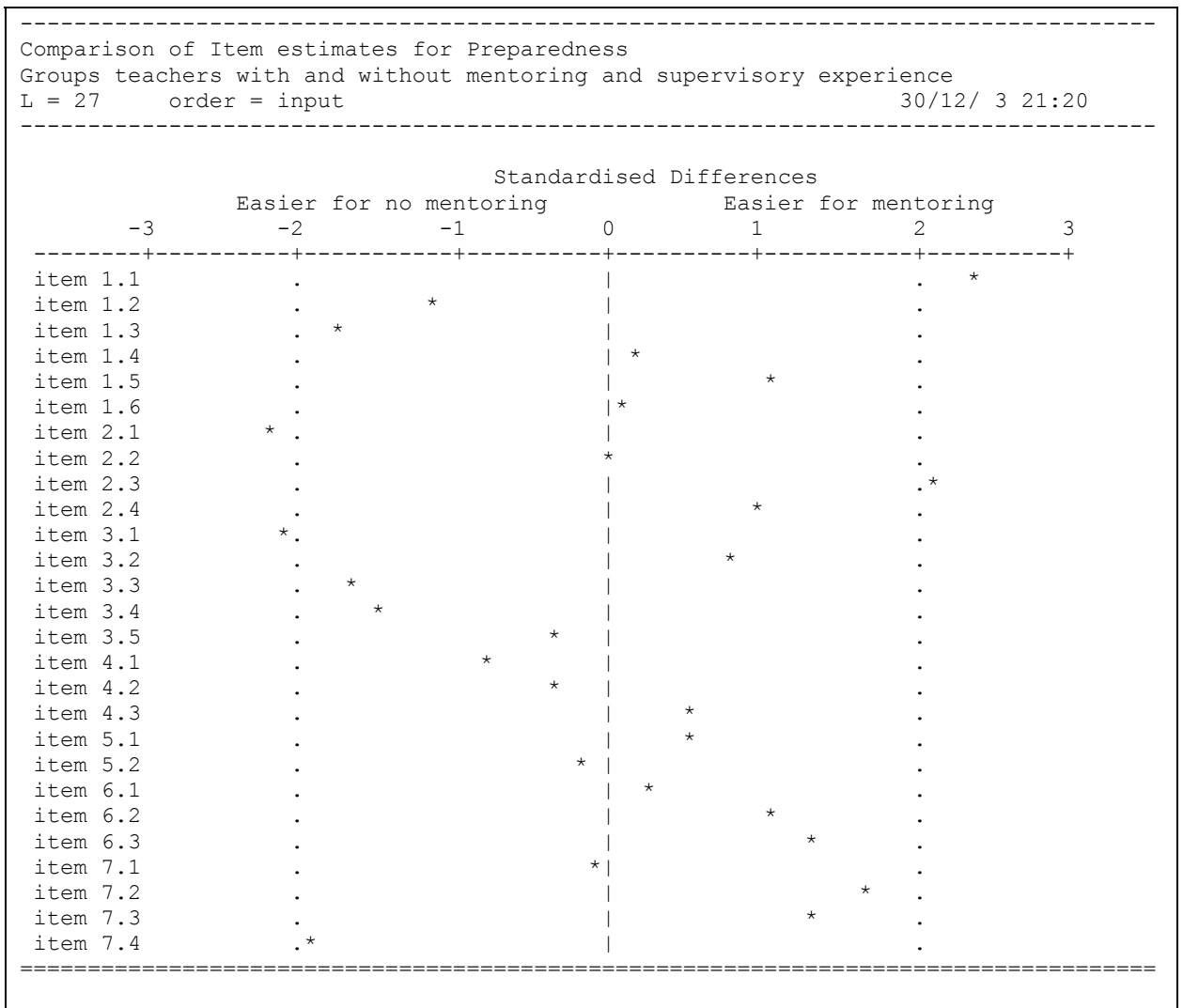
Equally, there were three elements supported more strongly by teachers with mentoring and supervisory experience where the extent of differential functioning was statistically significant. These were element 1.2: *Treat all students justly and equitably, and with an appropriate sense of good humour* ( $p = 0.03$ ), element 3.3: *Manage the learning environments in which they work* ( $p < 0.01$ ) and element 5.2: *Create safe and secure environments for young people* ( $p = 0.02$ ).

### **Preparedness**

All 27 elements of the standards displayed some Differential Item Functioning with respect to the *preparedness* question (Figure 5.14). As for *achievability* the majority of those elements were favoured more strongly by teachers with mentoring and supervisory experience. Although relatively weak, there was an apparent association of the preferences of the two groups for elements of the standards within some domains.

Teachers with no mentoring and supervisory experience rated the *preparedness* of beginning teachers more highly on four-of-the-five elements of domain 3: *Expert in the 'art and science' of teaching*. Similarly, teachers with mentoring and supervisory experience rated more highly beginning teachers' *preparedness* to meet all elements of the standards in domain 6: *Reflecting and continuously enhancing their own learning*.

The extent of Differential Item Functioning was statistically significant for five elements. Teachers without mentoring or supervisory experience saw beginning teachers as more prepared to meet element 2.1: *Demonstrate their knowledge, skills, understanding and values of the subject(s) they teach* ( $p = 0.03$ ), element 3.1: *Are able to communicate to others the knowledge, understanding, skills and values of the subjects they teach* ( $p = 0.03$ ) and element 7.4: *Enhance the professional status of teachers within the community* ( $p = 0.05$ ).



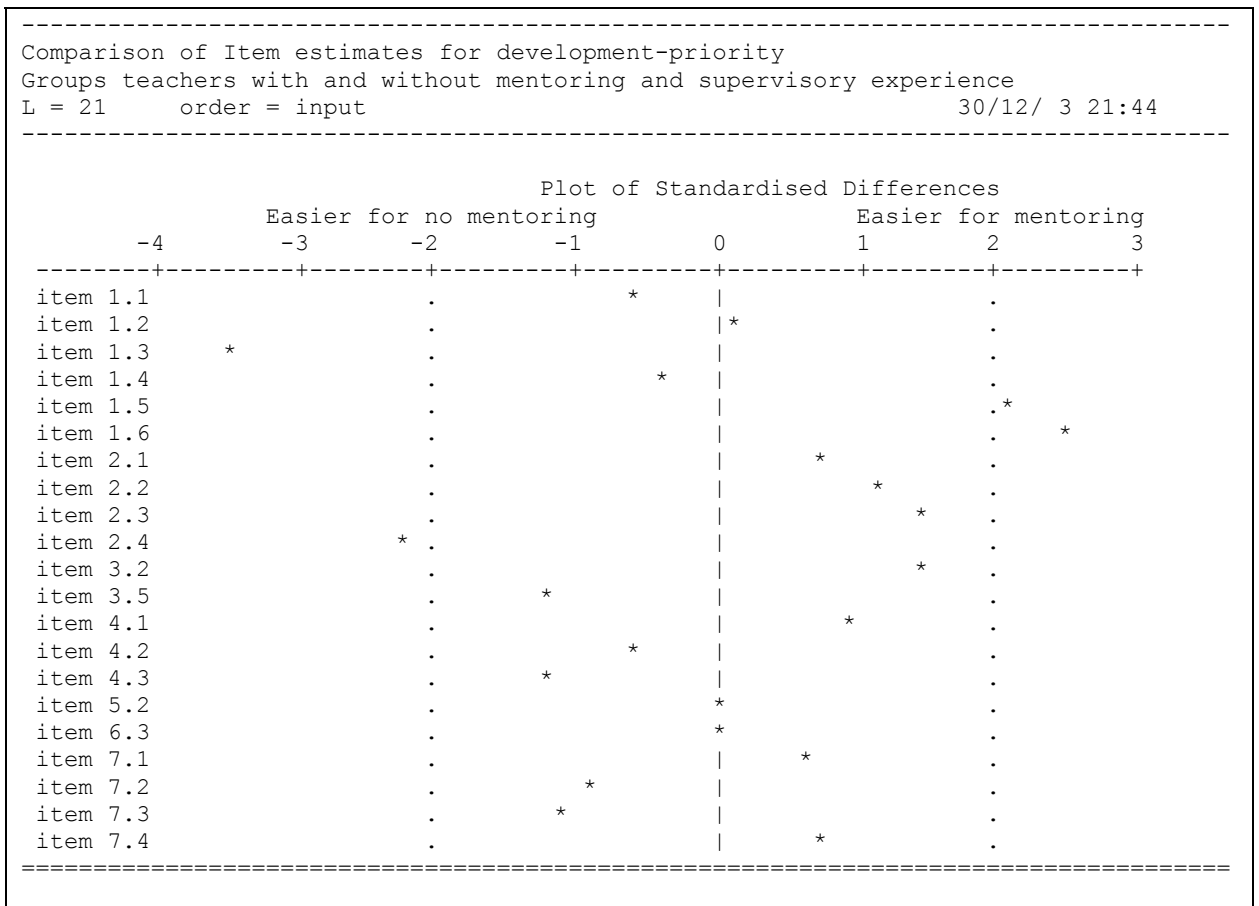
**Figure 5.14: Differential Item Functioning: Comparison of Preparedness estimates: Mentoring and supervisory experience**

Teachers with mentoring and supervisory teachers saw beginning teachers as more prepared to meet elements 1.1: *Demonstrate high levels of care and commitment to their students* ( $p=0.02$ ) and 2.3: *Are advocates for the subjects they teach* ( $p=0.04$ ).

**Development-priority**

Twenty-one elements of the standards were treated differentially by the two groups with respect to *development-priority* (Figure 5.15). These were equally distributed between the groups of teachers with and without mentoring and supervisory experience.

Three-of-the-four elements of the standards in domain 2: *Knowledge and understanding of what is taught and the disciplines upon which teaching is based*, were preferred by teachers with mentoring and supervisory experience. There was no apparent association between the extent of differential functioning and any other domains of the theoretical standards.



**Figure 5.15: Differential Item Functioning: Comparison of *Development-priority* estimates: Mentoring and supervisory experience**

There were four elements where the amount of differential functioning was statistically significant. Teachers without mentoring and supervisory experience assigned a significantly higher *development-priority* to elements 1.3: *Know, critically review, and use as appropriate, a range of educationally sound theories* ( $p < 0.01$ ) and 2.4: *Maintain the currency of their content knowledge* ( $p = 0.03$ ).

On the other hand, teachers with mentoring and supervisory experience allocated a significantly higher rating to the *development-priority* of elements 1.5: *Respect the dignity and individualism of students* ( $p = 0.04$ ) and 1.6: *Ensure that their goals for student learning are consistent with those set out in relevant state and nationally agreed objectives such as, for example, the Board of Studies syllabuses and the Common and Agreed National Goals for Schooling in Australia* ( $p = 0.01$ ).

## Discussion

Mentors and supervisors are in a unique position to formally and informally observe and assess the practices, skills, and capacities of beginning teachers. The insights arising from these

experiences were expected in this study to provide a point of differentiation between the perceptions of teachers with mentoring and supervisory experience and those without.

Consequently, the finding from the MANOVA of no statistically significant overall differences in the perceptions of groups with different levels of mentoring and supervisory experience was surprising. The result was consistent, however, with the results of the Differential Item Functioning analysis which found no systematic differences, that is, there were no elements of the standards that functioned differentially on two or more perspectives.

The absence of statistically significant overall difference amongst the perceptions of teachers with and without mentoring and supervisory experience poses a range of policy questions for those responsible for the development of young teachers. While in the context of the teachers sampled in this study the finding may simply represent the fact that teachers responding to the survey held views consistent with mentors and supervisors, it may also reflect lack of difference between teachers with and without mentoring experience arising from:

- a lack of focus on quality in the selection of mentors and supervisors,
- insufficient professional development of mentors and supervisors
- the need for prescribed standards or roles for mentors and supervisors.

## CONCLUSIONS

This chapter addressed research question 2. It was concerned with investigating differences amongst the perceptions of different groups of teachers. Five characteristics: teachers' age; teaching experience; school stage in which they teach; position in school; and mentoring and supervisory experience provided the basis for identifying the polytomous and dichotomous groups investigated.

Multivariate analyses identified statistically significant differences in the overall perceptions of the standards amongst groups of teachers differentiated on the basis of experience, age and promotion. Where they existed, differences in perceptions of the standards were predominantly associated with perceptions of *preparedness*. There was only one instance where there was a statistically significant difference amongst overall perceptions of *achievability* and no instance of statistically significant differences amongst perceptions of *development-priority*. The systematic differences evident in teachers' judgements about *preparedness* suggest that teachers may be polarised on the issue of the adequacy of preparation of beginning teachers.

Factors associated with overall differences in perceptions of *preparedness* were age, experience and position in school. Younger and less experienced teacher groups saw beginning teachers as being better prepared to meet the standards than their older or more experienced colleagues. Middle managers, that is, head teachers, executive teachers and assistant principals, were more pessimistic in their assessment of beginning teachers' capacity to achieve the standards than school leaders. They were also more cautious in their judgement of beginning teachers' *preparedness* to meet the standards than were classroom teachers. While logical arguments explaining these differences can be made from an analysis of the different experiences, contexts and responsibilities of each of these groups of teachers, the study did not investigate causal relationships.

The variability across groups in teachers' overall perceptions of the standards was not always predictable. Given common adages such as 'primary teachers teach students, secondary teachers teach subjects,' the finding of no overall difference in the perceptions of primary and secondary teachers was surprising. Nevertheless, the absence of difference provides some assurance that generic forms of standards can be applied across both stages of schooling.

The finding of no significant difference between the perceptions of teachers with and without mentoring and supervisory experience confirms the findings of Ramsey (2000). He reported, on the basis of anecdotal evidence, that there was a lack of quality in the mentoring and supervision provided to student and beginning teachers. The finding reinforces the need for school systems and school executives to be more interventionist in selecting, supporting and defining the role of mentors and supervisors of student and beginning teachers.

The results of the Differential Item Functioning analyses suggest systematic variation in the way some elements were perceived by different groups. Three elements functioned differentially with two or more of the perspectives, across two or more of the groups. These were element 2.1: *Demonstrate their knowledge, skills, understanding and values of the subject(s) they teach*, element 7.1: *Seek to create learning communities* and element 7.2: *Demonstrate educational leadership*.

Teachers' perceptions about element 2.1 appear to be related to their age or experience. Younger and less experienced teachers appear to have more positive perceptions of the subject content knowledge of beginning teachers, than older or more experienced teachers. While this may be a function of the degree of familiarity with current courses of initial teacher preparation, the possibility that contemporary courses of teacher preparation provide less rigorous subject content preparation cannot be discounted.

Divergent views about element 7.1 were apparent across groups differentiated on the basis of experience, age and school stage. Although the discussions of results presented logical arguments for the differences in perceptions, the fact that there are divergent views about an element of the standards seeking to promote collaborative and mutually supportive work practices amongst teachers requires comment. If the development of 'learning communities' is a positive initiative, then these results suggest the need for school leaders and policy makers to work to change the prevailing culture amongst older teachers and in secondary schools to support their establishment.

The final element to demonstrate variability in responses across two sets of groups was element 7.2. While differences might have been expected in the perception of classroom teachers and promoted teachers with regard to beginning teachers' capacities in educational leadership, the variability in responses between primary and secondary teachers was not expected.

Although there are fewer promotions positions in primary schools, there are many more primary schools than secondary schools. Hence on balance, the demand for teachers to fill promotions positions in primary schools ought to be similar to secondary schools. However, primary teachers have low perceptions of beginning teachers' *preparedness* for leadership and afford leadership a low *development-priority*. This ambivalent attitude to leadership in primary schools suggests the need for more explicit leadership development strategies in primary schools.

The findings from this and the previous chapter underline the importance of the involvement of teachers in the development of professional standards. Standards developed with inadequate appreciation of the knowledge, skills, values and understandings that teachers bring to their roles are unlikely to be absorbed and integrated into teaching practice. Obviously, from the results above, the theoretical standards that were the subject of this study could not be implemented in their current form without significant review. Whether a specific domain or element should remain in the framework or be amended depends upon a judgement about its relevance to the knowledge, skills and values of teachers. Generally, these decisions are socially constructed reflecting the current views of the professional and other communities contributing to the judgement.

However, the judgement about the relevance of a particular element must also consider its contribution to the knowledge, skills, and abilities of teachers. For example, if teachers' perceptions were the only issue to be considered then element 1.3: *Know, critically review, and use as appropriate, a range of educationally sound theories* would, on the basis of its low *achievability, preparedness* and *development-priority* perceptions, be unlikely to be included in the standards. However, to structure teaching as a profession, that does not have a theoretical basis

to underpin the work of its members would be untenable. The possession of a body of specialist knowledge is fundamental to the concept of a profession (Australian Council of Professions, 1997).

The next chapter shifts the focus of the investigations to Study 2, that is, the analysis of supervisors' reports on student and beginning teachers.



## **CHAPTER 6**

### **QUALITATIVE ANALYSIS OF REPORTS**

One of the central ways we make sense of experience is by making differences. The world presents itself without inherent order, and our impulse is to place things in piles, count them, and name them. .... This is not an irrational impulse. Distinctions and taxonomies are tools for thought.

(Shulman, 2002, p.1)

#### **INTRODUCTION**

This chapter marks the beginning of reporting on and discussion of the results of Study 2, namely, the qualitative analysis of supervisors' and principals' reports on student and beginning teachers. The results provide a description of teaching practices that can be compared with teachers' perceptions of the draft professional standards considered in Study 1.

The subjects of the analysis were 602 reports on teachers, comprising 274 reports on student teachers and 328 on beginning teachers. The coding structure derived from a NUD\*IST analysis of the text of the reports underpins the description of teaching practices in this chapter and, subsequently, the analysis of variation in practices reported across a range of groups in the next chapter.

The methodology for this analysis was described in detail in Chapter 3. The analysis represents a more inductive approach to describing professional practice than the process of development of the theoretical standards underpinning Study 1. The description of teaching practice that emerges from the analysis is based on supervising teachers' observations of teachers and their practices.

The use of a start list of nodes developed through the preliminary analysis of a small number of reports proved to be fundamental to the development of the ensuing node schema. It is this structure of parent and child nodes that provides the organising framework for the description of teaching practice that makes up the body of text in this chapter.

The parent nodes identified by the NUD\*IST analysis defined and described eight broad areas related to the work of teaching. These eight areas have been aggregated under four themes as set out in Table 6.1 below. Within each of the eight areas are a number of aspects of teaching. The aspects correspond to the nodes identified in the NUD\*IST analysis.

**Table 6.1: Teaching themes and areas identified by NUD\*IST analysis**

Theme	Area of Teaching
a. Foundation knowledge and skills	1. Knowledge of content and how students learn 2. Teaching skills
b. Classroom and student management	3. Managing learning 4. Student management
c. The teaching and learning cycle	5. Preparation and planning 6. Thinking about and improving on practice
d. Professional characteristics and relationships	7. Personal characteristics 8. Professional relationships

This framework provided a logical basis for describing teaching based on the comments identified in the reports. The descriptions and viewpoints that arise from the analysis represent an important perspective on standards as they arise out of documented practice, rather than theoretical positions. To simplify the discussion of the reports, the term 'supervisor' is used here on to refer to the writer of the report regardless of whether the report was the responsibility of the principal or supervising teacher.

The discussion of the results for each of the eight Areas of Teaching is in two parts. The first part provides a summary description for each aspect of teaching (node) identified. The second part provides a detailed description of the aspect of teaching with the highest frequency of comment. The decision to describe only one aspect of teaching in detail was taken to contain the amount of information presented. The descriptions of teaching are exemplified by direct quotations from the reports. These quotations serve to explain and illuminate the variety of perspectives. They are not intended to highlight the breadth of comment across the reports.

Examples of comments taken from reports for all fifty-four aspects of teaching are provided in Appendix 9. The quotes provided in the appendix are indicative only of the range and form of comment from supervisors on the aspects of teaching identified. The same protocols used in the body of the thesis for characterising the teachers who are the subject of the reports are applied to the quotes in Appendix 9.

This Chapter is divided into four themes: Foundation knowledge and skills; Classroom and student management; the Teaching and learning cycle; and Professional characteristics and

relationships. Each theme is divided into two teaching areas. Teaching areas were identified in Table 6.1.

### **FOUNDATION KNOWLEDGE AND SKILLS**

It is assumed that teaching is primarily concerned with facilitating students' learning. While perceptions of teachers' roles in this process have ranged from that of transmitter of knowledge to facilitator of learning, views about the need for teachers to have a strong foundation of knowledge and skills upon which to base their work have not wavered over time. The reports analysed in this study confirmed this expectation through comments such as:

Her understanding of the content of what she teaches has been transferred to carefully thought-out lessons FBSH

In the description of teaching that follows, supervisors' views about teachers' 'knowledge of content and how students learn' are considered first, followed by a discussion of the 'teaching skills' seen as fundamental to teachers' roles.

#### **Knowledge of content and how students learn**

Supervisors reported on the knowledge requirements of effective teachers from seven perspectives. The seven areas identified were:

- Knowledge and understanding of subject matter
- Breadth of knowledge
- Capacity to integrate ideas and themes across and within units of work
- Specialised knowledge
- Ensuring the content knowledge is appropriate to students
- Knowledge of curriculum and syllabus requirements
- Capacity to articulate a philosophy of learning

#### ***Overview of aspects of Knowledge of content and how students learn***

##### Knowledge and understanding of subject matter

Knowledge and understanding of subject matter was identified as being important for student and beginning teachers by 14.3 per cent of supervisors. Requirements for student and

beginning teachers to know and understand the subject matter they were teaching were described generally, and in terms of knowledge of specific subject areas. Tertiary study was identified as one way of developing subject content knowledge. For example:

In terms of senior teaching, she would need to update her Chemistry (perhaps a post-grad certificate) and further revise some areas of Biology FStSMs224.

### The breadth of knowledge

Having a breadth of knowledge was commented upon by 7.8 per cent of supervisors. In the case of primary teachers, supervisors related a breadth of knowledge to the ability to teach across the range of learning areas (Key Learning Areas) mandated within the curriculum for primary schools in NSW (Education Act, 1990).

Considerable ability to plan and teach units of work in English, Maths and Science and to build into these units elements from other KLAs FStP78.

Supervisors of secondary teachers commented in terms of the capacity to teach a range of subjects within a discipline area or to teach a single subject to classes at different developmental stages.

### Capacity to integrate ideas and themes across and within units of work

The capacity to integrate learning experiences from a range of curriculum areas within a single unit of work was noted only by supervisors of primary teachers. For example:

A 5 week Unit on “Spiders” covering all KLAs but specifically English, Science & Technology, HSIE and Creative & Practical Arts FStP56.

Overall, 3.0 per cent of all supervisors commented upon this capacity. As no secondary supervisors commented on this aspect, this percentage translated to 5.6 per cent of primary teachers.

### Specialised knowledge

Approximately 9.6 per cent of supervisors commented on the specialised knowledge and skills of primary and secondary teachers. Specialist knowledge was seen as important for its contribution to teachers’ effectiveness in the classroom, for example:

One area in literacy to be further developed would be in the area of Guided Reading to improve her skills in the explicit teaching of reading and reading strategies FSTP85.

Specialised knowledge was seen also as contributing to teachers' capacity to engage students in extra-curricular activities, such as dramatic performances, management of sporting or debating teams. There were three clear foci, however, for specific comments about specialised knowledge and skills. These were computer technology, languages and the performing arts.

#### Ensuring that the content knowledge is appropriate to students

The capacity to match the content and resources required for a lesson to the level of intellectual and social development of students was the aspect of teaching most frequently commented upon by supervisors (15.3 per cent). Comments about this aspect of teaching were primarily concerned with teachers' ability to select lesson activities and resources appropriate to the age or stage of development of the students, for example:

Content is generally pitched at the appropriate level for each of his classes MBSMs446.

To a lesser extent supervisors commented upon the appropriateness of the lesson activities and material to the range of student abilities within the class or the extent to which these catered for the individual differences amongst students present within the class.

#### Knowledge of curriculum and syllabus requirements

Specific knowledge of the content requirements of the statutory syllabus and curriculum requirements were noted in 11.1 per cent of reports completed by supervisors. For example:

Miss XXXX developed a good understanding of the curriculum for Years 4 and 5 FSTP2.

Such knowledge and understandings are important as the syllabus requirements dictate the extent and depth of the learning expected of students in particular subject areas.

#### Capacity to articulate a philosophy of learning

The ability to articulate or uphold a philosophy of learning was commented upon by 5.3 per cent of supervisors. The identification by supervisors of an underlying educational philosophy was seen as contributing to teachers' knowledge about the relationship between teaching and learning. For example:

Generally, XXXX educational philosophy reflects a developing understanding of the ways children learn FBP418.

Some supervisors noted specific philosophies such as 'cooperative learning,' 'student-centred learning' and 'child-centered-education.'

***Most reported aspect of Knowledge of content and how students learn***

The capacity to match the content and resources required for a lesson to the level of intellectual and social development of students was the aspect of teachers' knowledge and understanding of subject matter most commonly identified by supervisors. However, it was more frequently observed in reports on secondary teachers (18.6 per cent) than those for primary teachers (12.4 per cent). There was a similar disparity between the rate of comment by supervisors of student teachers (9.1 per cent) and supervisors of beginning teachers (20.4 per cent).

Supervisors reported on this aspect of teaching from a range of perspectives, namely, in general terms, in terms of the appropriateness of material to students' stage of development, and to the range of student abilities within the class. The following were typical of general comments:

Classroom presentations are purposeful and appropriate for the students she teaches FBP312.

She needs to ensure that tasks are not made too complex for students FBSSp340.

Comments about the appropriateness of the lesson content and resources to the stage of development of the students were concerned with appropriateness to the age or grade of the students in the class, for example:

She has demonstrated excellent use of resources that are appropriate to grade levels and relevant and stimulating FStP400.

Throughout the practicum her lessons were well structured and age appropriate FStP81.

Some supervisors commented, however, upon the appropriateness of the material to the range of student abilities and capacities within the classroom. For example:

Some further attention could be given to differentiating expectations for the less able children<sub>FStP88</sub>.

There were few comments, however, relating this capacity to strategies for addressing the individual differences and learning styles of students.

The ability to formulate and deliver lessons appropriate to students' stage of development was seen by supervisors as being critical to the success of young teachers. Work that is too challenging or too easy for students can reduce their engagement with learning. Work that is too difficult or not easily understood by students is not conducive to learning. In the second instance, work that is too easy may lead to students becoming disengaged from learning because they may become bored and distracted through lack of challenge.

### **Teaching skills**

While knowledge and understanding of subject content are important, teachers need also to be able to demonstrate proficiency in a number of skill areas. Six generic skills required of student and beginning teachers were identified by supervisors. These were

- Questioning techniques
- Oral communication skills
- Hand writing and chalkboard skills
- Interpersonal skills
- Supervision skills
- Technological skills.

### ***Overview of aspects of Teaching skills***

#### Questioning techniques

Supervisors commented upon the capacity of student and beginning teachers to direct questions to students in 4.8 per cent of reports. The ability to ask questions of students was related to maximising student participation in learning, to revising and reinforcing learning and to encouraging the development of critical thinking skills, for example:

Displaying an ability to question children and lead discussions which encouraged critical thinking<sub>MStP30</sub>.

Good practice identified by supervisors included the capacity to direct questions to a wide range of students in the class.

### Oral communication skills

Oral communication skills was the teaching skill most commonly identified by supervisors (12.8 per cent). Although many supervisors made only general comments about oral communication skills, some made specific comments referring to the use of voice, especially the capacity to modulate tone and volume as the situation requires. The clarity and appropriateness of the language used was also an area of comment. For example:

Miss XXXX has strong communication skills, varying her voice to appropriate tone and volume FStP120.

### Hand writing and chalkboard skills

A small proportion of supervisors (2.0 per cent) also commented upon student and beginning teachers' capacity to write legibly, especially on a chalkboard. The following comment is indicative of the value placed on such skills by supervisors.

XXXX will need to further develop her neatness and presentation of handwritten work on the blackboard FStP63.

In addition to neatness and presentation supervisors also commented upon the use of correct spelling and grammar in written communication.

### Interpersonal skills

While interpersonal skills were identified by 4.3 per cent of supervisors their comments provided little insight into the nature of such skills. Comments were restricted generally to a judgement about the quality of the skills or to the relationship between the teacher and students, staff and parents. For example:

YYYY demonstrates outstanding interpersonal skills with students, staff and parents MBP358.

### Supervision skills

Supervision skills were identified by 1.5 per cent of supervisors in their reports on student and beginning teachers. There were a number of dimensions, however, to the concept of supervision. These include supervision skills within the classroom related to monitoring and



evaluating student progress as well as observing and reacting to the range of student behaviours.

XXXX made good use of motivational strategies, and careful supervision and evaluation of children's work have contributed to the overall development of the class FSiP286.

Supervisors also commented upon supervision practices involving teachers' wider duty-of-care to students in the playground, or while engaged in sporting and extracurricular activities.

### Technological skills

Technological skills were identified by 8.1 per cent of supervisors as being important for student and beginning teachers. While for many supervisors the term technology was analogous to the use of computers, for others, the term had broader scope:

He has gained skills at using a variety of technologies in the teaching of science (Flexcam, Video, Microscope) and has developed confidence in using these pieces of equipment MStSMs209.

Within the classroom, technology was seen both as a tool to support teaching and learning in the classroom and, as skills to be taught to students. Technology was recognised also as having a role outside the classroom in systematising and supporting teachers' work, particularly, in documenting student engagement and reporting on progress.

### ***Most reported aspect of Teaching skills***

'Oral communication skills' was the aspect of teaching most commonly identified within this Area of Teaching. There was an apparent difference, however, between the proportion of secondary supervisors (15.4 per cent) and primary supervisors (10.5 per cent) commenting on this teaching skill. There were similar differences between the proportion of supervisors of student teachers (10.9 per cent) and beginning teachers (14.3 per cent).

Many supervisors made only general comments about the student and beginning teachers' capacity to communicate:

Her communication throughout the school, really excellent FSiP414.

Others were more specific, focusing on aspects of the use of voice such as the ability to modulate the tone and volume to create and maintain interest. For example:

Her language, oral communication and spelling skills are good. However, she needs to modulate her voice for maximum effect<sup>FStP54</sup>.

Miss XXXX has strong communication skills, varying her voice to appropriate tone and volume<sup>FStP120</sup>.

The clarity of the language and instructions used by the student and beginning teachers was also an issue for some supervisors.

All instructions and explanations are given clearly<sup>FStP120</sup>.

She has tried to simplify her language in order to give clearer explanations and instructions suitable for this age group<sup>FStP105</sup>.

She explains concepts concisely, adapting language so that students are able to grasp ideas<sup>FBSC602</sup>.

These comments demonstrate the range of supervisors' comments on oral communications skills. Teachers need to be able to vary the tone and volume of oral communications to give clarity, colour and movement to communication. They need also to be able to use clear, concise and appropriate language that supports students' understanding. The language they use should also be representative of good communication avoiding slang and colloquialism.

### **Discussion**

The discussion that follows for this theme and subsequently for each of the other themes arises from the comments of supervisors in the reports. The extent of response or comment by supervisors on particular issues does not represent the capacities of individual student or beginning teachers, rather the conscious decision of the supervisor to make a comment. Whether a supervisor commented on a particular issue is dependent upon a range of factors, only one of which is the direct observation of that aspect of teaching in relation to the subject of the report.

The absence of a comment may be indicative of a range of factors. For example, it may:

- be a function of the level of observation of teaching undertaken by the supervisor
- be outside their own knowledge and experience in a particular area of teaching

- reflect a conscious decision only to comment on certain aspects of teaching assuming that some are be taken for granted.

Nonetheless, the significant amount of commentary available for this analysis supports the identification and description of a number of aspects of teaching.

Foundation knowledge and skills, encompassing ‘knowledge of content and how children learn’ and ‘teaching skills,’ is the first of four themes identified from comments in the reports. They have been described as foundations in this analysis because of the extent to which they provide a base upon which teachers can build their practice. Alternatively, teachers are unlikely to be successful without knowledge of content, knowledge of how students learn and basic teaching skills.

Despite the importance attached in policy and community expectations to teachers’ knowledge of content, supervisors did not comment other than in general terms about this aspect of teaching. This may be because there is an expectation that student and beginning teachers, being graduates of university courses, would have such knowledge and therefore any comment would be superfluous. Nonetheless, there was a small number of cases where deficiencies in knowledge were recognised and acknowledged.

A primary concern for supervisors was to ensure the appropriateness of content to students’ stage of development. While such a requirement for student and beginning teachers appears axiomatic, it is essential to the extent to which students are able to engage with the concepts, ideas and materials to be learned. Work that is too challenging or too easy for students can reduce their engagement with learning. In the first instance, because they lack the prior knowledge fundamental to understanding new concepts they have a reduced capacity to construct new knowledge and skills. In the second instance, they do not progress to the extent to which they are capable because they become bored or distracted through lack of challenge.

For a number of supervisors, however, the apparent context for their comments on the appropriateness of materials was a seemingly homogeneous class with all students at the same stage of intellectual and social development. There were few comments indicating an expectation that student and beginning teachers should be able to provide content and materials to cater for the range of individual differences within the classroom.

A related issue, for the student and beginning teachers reported upon in this study, is their knowledge and understanding of mandatory curriculum and syllabus documents. These define and in some cases provide exemplars, of the learning expected of students at each stage of schooling, albeit at the level of units of work rather than individual learning activities.

Although a philosophy of learning is commonly valued as a means of articulating an understanding of how students learn, only one supervisor in twenty commented upon or identified an apparent learning theory or philosophy of learning. In some instances the observation was couched in such terms as 'student-centred-learning,' 'child-centred-education,' and 'brain learning theory.' One explanation of this low level of comment in this important area might be that supervisors do not know the teachers or their practice sufficiently well to be able to comment in any detail. Another possible explanation is that the supervisors also do not have a clear philosophy or theory about how students learn.

In addition to foundation knowledge, supervisors identified a range of skills that could also be seen as foundational. These include questioning techniques, oral communication skills, handwriting and chalkboard skills, interpersonal skills, supervision skills and technological skills. While these were identified as discrete skills in this analysis, an argument could be mounted that there is a significant degree of interdependence amongst some of them.

For example, questioning techniques allow student and beginning teachers to move beyond using purely didactic forms of teaching to engage more effectively with students in the learning process. The capacity to direct questions that test, probe, build-on, strengthen knowledge and understanding, and engage all students in learning is an important skill. To an extent, effective questioning techniques could be seen to be dependent upon the possession of sound oral communication skills. However, these are broader capacities, encompassing the ability to use subtleties of tone and volume to engage and capture students' interest and the quality of the language and appropriateness of the communication itself.

Dependent also upon oral communication skills are interpersonal skills that enable teachers to relate to students, their peers, parents and community members. While supervisors did not articulate what they meant by interpersonal skills, they identified with their importance. The converse being, that people with poor interpersonal skills make poor teachers. Other communication skills identified by supervisors were handwriting and chalkboard skills. Issues of legibility, neatness, presentation, spelling and grammar were all commented on by supervisors.

Despite the importance of student and beginning teachers needing skills to enable them to supervise students in the classroom and in other school contexts, fewer than one in fifty supervisors commented on the student or beginning teachers' supervision skills. There are two possible explanations for the paucity of comment in this area. The first being, that the issue was not sufficiently valued by supervisors for them to comment. The second being, that

identification of such skills may be dependent on the supervisor knowing well the teacher, who is the subject of the report.

The last skill area identified by supervisors was related to technologic capability. The level of comment here recognises that schools and teachers have a responsibility to teach students how to use technology that is commonplace in the community. Teachers need to do this both explicitly as part of the curriculum for students and implicitly through their use of technology in teaching and administration.

This discussion of aspects of teaching related to the theme of 'foundation knowledge and skills' highlights the importance of these aspects of teaching and their generic nature. The low level of comment on some of these aspects of teaching that may have significant impact on the student or beginning teachers' capacity to undertake their role is of concern as it may further indicate a lack of quality in the selection of supervisors as discussed in the previous chapter.

## **CLASSROOM AND STUDENT MANAGEMENT**

Classroom and student management is the second theme arising from comments identified in supervisors' reports. The two areas of teaching described in this theme are 'managing learning' and 'student management.' They reflect the importance of a teacher being able to manage the learning process and to maintain an orderly environment both within and outside the classroom.

The description of supervisors' comments in the reports follows the same structure as for the first theme. For each area, an overview of each of the identified aspects of teaching is followed by a detailed description of the aspect of teaching with the highest frequency of comment. A discussion of issues arising from the theme concludes the section.

### **Managing learning**

The first area of this theme is concerned with managing student learning. In considering teachers' work, Shulman (1987) discussed the teacher's role in terms of seven areas of knowledge, including amongst other things:

- general pedagogical knowledge, with special reference to those broad principles and strategies of classroom management and organisation that appear to transcend subject matter

- pedagogical content knowledge, that special amalgam of content and pedagogy that is uniquely the province of teachers [in a particular discipline], their own special form of professional understanding.

While both of these areas of knowledge are essential to teachers' management of learning, the comments in the reports studied related only to the former. Twelve different areas of general pedagogic knowledge relating to the management of learning were identified in the reports. These included:

- management of time
- management of lesson transitions
- logical structure to the lesson
- flexibility in delivery
- use of a range of teaching strategies
- use of resources
- catering for individual differences
- motivation of students and facilitation of learning
- following-up
- creation of an appropriate classroom environment
- assessment and evaluation of learning
- experience in teaching a variety of classes or content areas.

### ***Overview of aspects of Managing learning***

#### Management of time

The capacity to manage the use of time within lessons was commented on by 6.0 per cent of supervisors. Implicit in their comments were two perspectives on time management. The first being related to the pace of the lesson or the timing of the lesson activities, for example:

He was able to pace lessons to motivate and interest all students<sub>MSTP30</sub>.

The second perspective relates to the capacity of young teachers to be able to manage their use of time so that the content of the curriculum allocated to a particular time period is effectively taught.

### Management of lesson transitions

A small proportion of supervisors (1.8 per cent) commented upon student and beginning teachers' ability to manage the transitions or changes that necessarily occur between and within lessons. The capacity to manage the change from one lesson to another and from one activity within a lesson to another is important, not just in terms of being able to manage the disruption that may occur to learning during the transition, but also because it is at this point that the teacher successfully or unsuccessfully links new knowledge, concepts, experiences and skills to those arising from previous activities. The following comment was typical:

An area that XXXX will be able to improve on with more classroom and teaching experience is the flow from one lesson to the next – (day-to-day, week-to-week) FSTP55.

### Logical structure to the lesson

Comment on the structure of the lessons was noted in 7.0 per cent of reports. While some supervisors commented in general terms, others were more specific referring to particular structures. A small number of supervisors linked the structure of the lesson to a theoretical or conceptual framework, such as in the following comment:

Miss XXXX has a good understanding of teaching and learning processes and develops student understanding working from the concrete to the symbolic FSTP27.

### Flexibility in delivery

The ability of student and beginning teachers to change and adapt as the circumstances of the lesson dictate was valued by 16.3 per cent of supervisors. This capacity was commonly described in terms of flexibility or adaptability, for example:

She has been able to be flexible, foresee problems and to make variations according to the current situation FSTP43.

### Use of a range of teaching strategies

The need for student and beginning teachers to be able to use a range of different activities and teaching strategies was the second highest aspect of teaching in this area identified by supervisors (41.0 per cent). Although such abilities were commonly described in general terms, some supervisors were more specific referring to such strategies as formal didactic lessons, and student-centred learning approaches, for example:

Miss XXXX is just as comfortable presenting more formal teacher directed activities or being on the floor with the children actively engaging in an informal, 'hands on,' student-centred setting FStP16.

Two particular strategies identified by supervisors were the use of problem solving and group work. Supervisors also identified the need for teachers to have a range of strategies to cater for different student abilities, stages of learning, and learning styles.

#### Use of resources

The ability to use a range of resources to support learning in the classroom was commented on by 13.0 per cent of supervisors. Although particular teaching resources are not specifically described in the reports, resources were seen to constitute essential stimuli to support teachers' engagement of students in learning.

She has demonstrated excellent use of resources that are appropriate to grade levels and relevant and stimulating FStP19.

#### Catering for individual differences

The need for young teachers to be able to cater for a range of student needs and differences was the most frequently identified aspect of teaching in the reports (44.0 per cent of supervisors). This quote was typical of comments in the reports:

She has demonstrated her ability at recognising individual differences and responding to those differences FStP7.

The capacity to provide for students who work more quickly or more slowly was a particular focus in some reports, while in others there was recognition of the need to cater for the different cultural and social backgrounds of students.

#### Motivation of students

Clearly, an intrinsic capacity of an effective teacher is the capacity to motivate students to facilitate learning. Some 33.4 per cent of supervisors commented on this aspect of teaching from the perspective of their ability to engender a positive response from students or to motivate them, for example:

She has established a good rapport with her students who respond in a positive, enthusiastic manner to the lessons presented FBSMs488.



A more critical competence noted by some supervisors was the ability to facilitate and support student learning, specifically, in terms of achieving outcomes or extending the knowledge, understanding and skills of students.

#### Follow-up

The concept of follow-up was identified in only a small number of reports (4.8 per cent). In some cases the term was used by supervisors in the context of reinforcing learning that has occurred during a lesson or in the context of assessment and evaluation of learning, for example:

Her lessons are thoughtfully prepared, logically explained and methodically followed up, with a high degree of student participation FBSC595.

Other supervisors considered the concept in the context of following through on instructions and directions, particularly, in relation to discipline.

#### Creating an appropriate classroom environment

The creation of an appropriate classroom learning environment was discussed by 26.2 per cent of supervisors. However, the concept of learning environment is multidimensional. In many reports, the learning environment was described in intrinsic terms, such as maintaining a stimulating or positive learning environment or creating an the atmosphere of trust and mutual respect, for example:

Continually seeks an effective, mutually respectful learning environment MBSMs605.

In other reports, the term referred specifically to the aesthetics of the classroom.

#### Assessment of learning

Supervisors (26.9 per cent) commented on assessment practices, both in general and specific terms. General comments included statements such as:

XXXX demonstrates a practical knowledge of assessment techniques and is able to effectively monitor student performance and progress FBP313.

In some reports supervisors identified specific assessment strategies such as spelling, topic tests, examinations and assessing group work. Recording and reporting of student achievement also received attention in the reports. Only a few reports were phrased in terms of

formal assessment terminology. Supervisors commented, in general terms only, on the appropriateness of the assessment task to the outcomes to be measured.

#### Experience in teaching a variety of classes or content areas

Although not directly related to management of learning, supervisors (17.8 per cent) valued the experience of student and beginning teachers in teaching across a range of contexts. The contexts for teaching, however, were different for primary and secondary teachers, reflecting their dissimilar roles. For primary teachers, the contexts involved teaching a single class across a range of learning areas. For example:

She has taught a variety of lessons across most KLA's FStP71.

For secondary teachers, however, involvement in teaching a range of content areas and classes was most relevant.

#### ***Most reported aspect of Managing learning***

Catering for individual differences was the aspect of teaching most commented upon by supervisors in the reports of the student and beginning teachers studied. Slightly higher proportions of primary (49.8 per cent) supervisors acknowledged the need for student and beginning teachers to be able to cater for a range of student needs and differences than secondary supervisors (37.3 per cent). A lower proportion of supervisors of student teachers (29.9 per cent) commented than supervisors of beginning teachers (55.8 per cent). Although many supervisors addressed the issue indirectly others made direct reference to individual differences, for example:

She has demonstrated her ability at recognising individual differences and responding to those differences FStP7.

The capacity to provide for students who work more quickly or slowly was a particular focus in some reports.

The use of challenging activities for fast finishers became very popular, with the children bringing in tasks to challenge Miss XXXX as well FStP140.

XXXX has been aware of the needs of both faster and slower students, providing extension work for 'fast finishers,' as she gave extra time to slower workers FStP109.

Few supervisors, however, indicated strategies for catering for differences in ability other than providing a range of activities. Encouragement and praise were noted as being relevant to 'low achievers.'

She has been teaching whole class lessons for many weeks constantly following up unfinished work, seeking out alternative activities for low achievers and always encouraging and praising FSIS117.

The need to cater for the cultural and social differences was also evident in some reports.

In this way XXXX is able to provide challenges for students and promote student self-evaluation. XXXX displays empathy towards students of diverse cultural backgrounds and respects differing cultures FBP362.

Supervisors recognised in the reports that individual differences amongst students provide challenges for student and beginning teachers. Being able to ensure all students are actively engaged in learning is a critical skill for them, requiring critical judgements about whether the learning needs of students are being met as well as the capacity to provide relevant and appropriate lessons to meet the needs of all students. Pointedly, although supervisors recognised that individual students have specific needs they provided little advice or comment on the particular strategies available to student and beginning teachers.

### **Student management**

In almost all reports where progress or competence was regarded as unsatisfactory, the capacity to manage students was criticised. The following comment on student management was typical of such reports:

XXXX has worked very hard on her classroom management, but at times it is still ineffectual – she needs to more actively supervise students, developing more of a presence in the classroom and a repertoire of strategies which work for her FBSMs565.

Supervising teachers discussed student management from five perspectives. These were not classified easily as they traverse a range of perspectives. The first concerns relationship with students, the next three concern strategies for managing students, and the last reflects judgements about the student or beginning teacher's capacity to manage students. The perspectives identified were:

- rapport with students

- use of a variety of strategies
- the capacity to establish and maintain rules and routines
- use of positive reinforcement
- the ability to manage difficult and disruptive students.

### ***Overview of aspects of Student management***

#### Rapport with students

Being able to relate to students was seen by supervisors as the most important of all attributes of beginning teachers, being identified in 66.1 per cent of all reports. Effective relationships with students were described commonly in terms of rapport with students, but also in terms of respect, empathy, and ability to relate to student. A typical example of the comments is:

XXXX has developed an excellent rapport with the children and has gained their friendship and respect, which in my opinion are two of the most essential ingredients in encouraging quality learning FSIP25.

Supervisors also described rapport with students in such terms as 'likes children,' has an 'empathy with students and their concerns,' and plays a 'caring and nurturing role.'

#### Use of a variety of student management techniques

While few strategies for managing students were explicitly noted in the reports, 14.8 per cent of supervisors commented on the capacity of student and beginning teachers to use a variety of strategies for managing students.

Mr YYYY has had to employ a number of classroom management strategies, and work out how to improve his control over a class after a difficult lesson. MStSMs261.

This focus on the possession of a 'kit bag' of relatively undefined strategies or techniques suggests that supervisors are concerned that young teachers are able to change and adapt their approach to suit the type of lesson and the lesson dynamic.

#### The capacity to establish and maintain rules and routines

Maintaining good order in the classroom through clearly established rules for student behaviour was perceived by 26.1 per cent of supervisors to be a key student management strategy. Supervisors described young teachers' capacity to establish rules, routines and consequences and to be consistent in their approach to dealing with student management, for example:

Children know where they stand because he remains consistent in his expectations and in his class control MBP483.

In cases where student and beginning teachers were seen not to be effectively managing students, supervisors commented in terms of the need for insistence on the complete attention of students and in terms of the need to “direct students from time to time to keep them focused” MSiSH183.

#### Use of positive reinforcement

The use of positive reinforcement in classroom management was commented on by 11.1 per cent of supervisors. While some supervisors referred directly to the use of positive reinforcement, such as in the following quote:

Classroom management was generally very effective and based on positive reinforcement of desirable behaviour FSiP121.

Other supervisors described positive relationships with students, positive classroom environments and the use of positive discipline strategies, suggesting that the concept is multifaceted.

#### Ability to manage disruptive students

The capacity to manage difficult classes and disruptive students was identified by supervisors in 12.3 per cent of reports. In some reports, the comment consisted of a generalised reference to the capacity to manage disruptive students, such as:

He was challenged by behaviour disordered students and met this challenge with appropriate responses, remaining controlled and positive MSiSH178.

In some cases the comments were made in reference to classes that were difficult to manage rather than individual students.

#### ***Most reported aspect of Student management***

As noted above, the capacity to relate to students was the most frequent aspect of teaching commented on by supervisors across all aspects of teaching. A similar proportion of primary supervisors (67.5 per cent) and secondary supervisors (64.5 per cent) commented on rapport with students, as did supervisors of student teachers (63.5 per cent) and beginning teachers (68.3 per cent). Being able to relate to students was seen by supervisors as an important

characteristic of a successful teacher. Effective relationships with students were described commonly in terms of rapport with students, for example:

XXXX has developed an excellent rapport with the children and has gained their friendship and respect, which in my opinion are two of the most essential ingredients in encouraging quality learning FSIP127.

Her quiet, efficient, yet friendly nature has assisted her in building up a rapport with children FBP84.

However, effective relationships with students were also expressed in terms of gaining the respect or confidence of students, displaying empathy towards students or simply relating well to students. This aspect is exemplified in the following comment:

She has the greatest skill that a teacher needs and that is the ability to relate to all students FSIP33.

While these comments from teachers give some lead, it is not easy to define and identify from the reports the essence of an effective relationship between teacher and student. For some supervising teachers, evidence of this relationship or rapport with students was expressed simply as a 'likes children,' for others it concerns 'empathy with students and their concerns,' while to others it suggests a 'caring and nurturing role.' Nonetheless, in contemporary classrooms, where attention and discipline cannot be demanded, supervisors place very high value on the relationship between teacher and student for its impact on the attitudes of students and consequently their interest and engagement in learning.

### **Discussion**

For the purpose of this analysis, classroom and student management have been described in two areas: managing learning and student management. Both areas could be considered as pointers to teacher effectiveness in the classroom and other teaching environments.

While it could be argued that teaching is such a highly personal and context specific activity, and that there are as many approaches as there are personalities and contexts, the reports provide little insight into supervisors' analysis of teaching practice, their identification of causal relationships and recommendations of strategies to assist student and beginning teachers undertake their role. This concern, while particularly true for this theme, applies generally to supervisors' comments with respect to all four theme areas.

Although for this theme supervisors provided few insights into specific strategies for assisting the development of student and beginning teachers, it is possibly the theme against which the overall success or otherwise of student and beginning teachers is primarily judged. Managing learning, as evidenced from the above analysis, is the most multifaceted of all areas of the teachers' role with each aspect raising its own particular issues.

Management of time has both immediate and longer term perspectives. The immediate perspective being related to ability of teachers to judge whether students have sufficient time within a lesson or activity to grasp the concepts being taught, or too much time so that they become bored or restless. To do this, they need to be able to pace the lesson and to construct the learning experience in terms of meaningful 'chunks' to be completed in the specified term.

The longer term perspective relates to the capacity of teachers to ensure the content of the curriculum allocated to a particular time period is effectively taught. A consequence of allocating an appropriate amount of time to an activity is the capacity to manage the change from one activity to another within a lesson and from one lesson to another. While such transitions are potentially an opportunity for disruption, they also require the teacher to be able to link successfully the knowledge, concepts, experiences and skills arising from previous activities to new learning.

Similarly, a logical structure and apparent order amongst activities in a lesson are important to student learning as they facilitate student's understanding of the material presented. The commonsense nature of such an assertion is easily understood when compared with the converse assertion that illogical and chaotic presentations militate against learning. Nonetheless, teachers need to be flexible in order to react to changes in the dynamic of a lesson. The ability to change a teaching approach when the students are bored or restless, or unable to grasp the concepts being introduced, is essential to a teacher's capacity to manage learning within the classroom.

Flexibility and responsiveness, however, are dependent upon teachers having a range of strategies, approaches and resources which they can utilise if the lesson or activity is not engendering the desired response in students. A range of teaching strategies is also needed to cater for different student abilities, stages of learning, and learning styles. Two specific strategies identified by supervisors were the use of problem solving, an inquiry-based strategy, and group work, a cooperative learning strategy.

Although, particular teaching resources were not specifically described in the reports, resources constitute essential stimuli to support students' engagement in learning. Appropriate teaching resources can provide both concrete and conceptual prompts to support learning.

The capacity to select resources appropriate to the learning task and to the grade or stage of development of students were seen by supervisors as important skills for student and beginning teachers.

A majority of supervisors commented on the challenges to student and beginning teachers arising from the need to cater for individual differences amongst students. Being able to ensure all students are actively engaged in learning is a critical skill for teachers. It requires critical judgements about whether the learning needs of students are being met as well as the capacity to provide relevant and appropriate activities to meet identified needs. The importance attached to this capacity needs to be viewed in the context of the difficulty expressed by teachers in addressing individual differences in Study 1. Clear strategies for catering for individual differences need to be identified and promoted widely.

Other capacities identified by supervisors in the reports were the capacity to motivate students and to facilitate learning, the capacity to follow up on learning and on instructions to students, the capacity to supervise students in the classroom and in other activities, skills in assessment and reporting, and the capacity to develop an environment that supports learning and is aesthetically pleasing. These capacities are fundamental to teaching. Teaching that does not focus on student learning does not address the initial assumption that 'teaching is primarily concerned with facilitating students' learning.' Experience in teaching a range of classes and subjects was also valued by supervisors.

The second area identified in this theme, that of student management, is also a critical area for student and beginning teachers. Teachers who are unable to manage students have little chance of fulfilling their main role successfully, that is, of facilitating student learning. Student management is reliant on issues of mutual respect and mutual trust. For teachers to be effective in this environment they need to have good rapport with students and be able to relate to them.

The capacity to establish rules and to apply them consistently and fairly was one of two strategies reported by supervisors. Establishing boundaries for acceptable behaviour and maintaining them consistently requires professional judgement and self-discipline. For some student and beginning teachers these are learned behaviours. The second strategy identified by supervisors, positive reinforcement involving praise and encouragement of acceptable behaviour, including learning, is also a relatively simple but effective strategy for gaining student cooperation. Despite only identifying these two clear strategies for managing students, supervisors comments on the possession of a variety or 'kit bag' of relatively undefined strategies or student management techniques suggests that supervisors are concerned that



student and beginning teachers are able to change and adapt their approach to suit the type of lesson and the lesson dynamic, including the student 'mood.'

For student and beginning teachers, developing the capacity to manage students who are difficult or disruptive is also critical. The effect of disruptive students on the learning of other students can be cumulative and debilitating. Failure to meet the challenges posed by disruptive students interrupts and disturbs the learning process, and encourages further antisocial behaviour. In addition, it undermines the confidence and enthusiasm of the student or beginning teacher.

Teachers who cannot manage students are likely to lack credibility with students, and to have difficulty building their reputation as an effective teacher. They may also suffer from increased levels of personal stress and to be less likely to be retained in the profession. From a supervisor's perspective however, teachers who have difficulty managing students require them to provide increased support. Understandably, therefore, from a supervisor's perspective the capacity to manage disruptive students is an important aspect of teacher competence.

## **THE TEACHING AND LEARNING CYCLE**

The teaching and learning cycle is the third theme identified from supervisors' comments in the reports. The concept of a teaching and learning cycle is used in this analysis to indicate that effective teaching within the classroom is founded on detailed preparation and planning prior to the lesson as well the capacity to evaluate, analyse, review and adjust their teaching practice.

Previous sections of this chapter have been primarily concerned with the teaching event. This section addresses issues identified by supervisors that relate to planning and preparation prior to a lesson and the evaluation of practice, which may occur during the lesson and subsequently. Issues involved in preparation and planning are considered first.

### **Preparation and Planning**

Preparation and planning is the first area of the teaching and learning cycle. These aspects of teaching provide a foundation for the lesson providing opportunities to identify what is to be taught, why it is to be taught, how it is to be taught and how the intended learning is to be evaluated.

Supervisors' comments on the planning and preparation undertaken by student and beginning teachers were separated into five areas. These were:

- General preparation and preparedness
- Planning of lessons
- Planning of units of work
- Planning for student outcomes
- Planning for individual needs.

### ***Overview of aspects of Preparation and planning'***

#### Preparation and preparedness

The preparation and preparedness of student and beginning teachers was commented on by 16.8 per cent of supervisors. For student and beginning teachers trying to establish themselves as being capable of working as independent and competent practitioners, the extent of their preparation is seen by supervisors as being related to their success. Conversely, lack of preparation was seen by supervisors as an impediment to success. In considering these issues some supervisors referred to the 'preparedness' of student and beginning teachers or to their being 'well-prepared.' Others noted the preparation of the student and beginning teachers commenting in some cases on the artefacts or evidence of preparation, for example:

His thorough preparation (using term planners, program folders and a detailed day book) MBP316.

#### Planning of lesson

Lesson planning was the most commented on aspect of planning and preparation identified by supervisors (40.5 per cent). Lessons constitute the smallest unit of teachers' work therefore a discrete opportunity for planning. Supervisors commented on lesson planning from a range of perspectives including the thinking and contemplation undertaken by the student and beginning teachers, the structure and recording of the plan, and the potential arising from lesson plans for discussion between the supervisor and teacher, for example:

It is essential that all lesson notes are discussed with the teacher prior to teaching sessions to ensure appropriate subject matter and procedures FSTP83.

### Planning of units of work

Planning of units of work was noted by supervisors in 31.9 per cent of reports. The capacity to plan a unit of work involves broader skills in developing a sequence of lessons to cover a topic or longer term activity. Many supervisors made generalised references to this aspect of teaching such as in this comment:

Her preparation for the unit and its presentation was exemplary. She continually adjusted the unit to suit individual and class needs FSP175.

Supervisors also referred to other longer term planning and preparation activities such as developing a teaching program or to 'programming.'

### Planning for student outcomes

The development of outcomes-based curriculum in New South Wales has provided the impetus for a more transparent approach to planning for student learning outcomes. The capacity of student and beginning teachers to identify and plan for student outcomes was identified in 16.6 per cent of reports. The relationship between planning and student outcomes was considered from three perspectives. The first perspective involved the recognition of a relationship between the lesson planning and the outcomes achieved by students. The second perspective involved comment on outcomes explicitly identified within the lesson plan. The third perspective concerned the need to evaluate lesson planning in terms of student outcomes achieved, for example:

His lesson preparation has shown a development and the need for continued evaluation in terms of student outcomes MBSH562.

### Planning for individual needs

The capacity to plan for the needs of the full range of students for whom teachers are responsible was addressed by supervisors (13.0 per cent) from a number of perspectives. The predominant or underlying hypothesis was a concern to address in planning the individual learning needs of students, however, these needs were articulated in a number of ways. For some supervisors the capacity to address the needs of students with learning difficulties was important. For others, the issue concerned the ability to address the needs of the full range of students in the class, for example:

Miss XXXX's planning showed a desire to address students at their different understanding levels; attempting to extend more able students and motivate those who struggle FStSMs199.

### ***Most reported aspect of Preparation and planning***

Planning of lessons was the aspect of 'preparation and planning' with the highest frequency of comment by supervisors, however, a greater proportion of secondary supervisors (52.3 per cent) noted it than primary supervisors (30.3 per cent). Similar differences existed between the rate of comment of supervisors of student teachers (28.8 per cent) and beginning teachers (50.3 per cent).

Supervisors commented on lesson planning from a range of perspectives. Some identified with the thinking and contemplation undertaken by the student and beginning teachers, for example:

A considered and thoughtful approach to lesson plans and execution was always evident FStSH194.

Others commented upon the organisation and recording of the planning artefacts:

YYYY lessons have been carefully thought out, recorded satisfactorily in his 'Teachers' Diary' and followed through MBSH551.

For some supervisors the lesson notes provided a catalyst for discussion between the supervisor and teacher.

Miss XXXX displayed evidence of preparation in the delivery of her lessons. She has become more aware of the need to provide written documentation prior to the time of implementation in order to enhance the success of teaching/learning tasks FStP95.

Lesson plans were seen as a critical indicator of student and beginning teachers' stages of development and potential success or failure as a teacher. Where student and beginning teachers were seen to be at risk the quality of their lesson planning was seen to be a critical element. For example:

Mr YYYY is aware that he must pitch his lesson delivery to the level of the students. Whilst this problem may be attributable to unfamiliarity with the subject material, it must become a focus of his planning and delivery MSStH260.

Lesson plans are essential elements of student and beginning teachers' work. They provide a predefined structure and content for the lesson allowing teachers to define the goals and proposed learning outcomes, to pre-select activities, materials and resources and to establish conditions to better control other aspects of the lesson, such as, student teacher and student-student interactions. The written plan also provides a basis for supervisors to discuss the form, content and outcomes of lessons with student and beginning teachers. For supervisors, poor planning is symptomatic of underlying problems in student and beginning teachers' attitude and their appreciation of the teaching task.

### **Thinking about and improving on practice**

The second element of the teaching learning cycle relates to the critical analysis and reflection that teachers undertake during the lesson and subsequent to it. These aspects of professionalism address a teacher's capacity to review, revise and improve on their practices as well as their capacity to analyse the extent of learning that has occurred. The analysis of learning is fundamental both to gauging teacher effectiveness and to planning for future learning. Thinking about and improving on practice is described under four headings:

- Reflecting on teaching
- Reflecting on learning
- Building on experience
- Involvement in professional development.

### ***Overview of aspects of Thinking about and improving on practice***

#### Reflecting on teaching

Comments related to reflecting on teaching were identified in 20.3 per cent of reports. Although there is considerable rhetoric in the professional literature and discourse about the importance of teachers reflecting on their experience as a means of analysing and reviewing practice, supervisors commented only in general terms about this aspect of teaching. For example:

Miss XXXX was constructively reflective of her own teaching practice and always willing to listen and implement ideas FSIP1.

More commonly, supervisors referred to evaluation or self-evaluation, seeing it as supporting review and improvement in practice.

### Reflecting on learning

The relationship between student learning and teaching effectiveness was the subject of comment in 8.6 per cent of reports. The need for reflection on the learning outcomes of students is highlighted by the following comment:

Critical evaluation of student progress is ongoing, and for XXXX this has involved a steep learning curve as she comes to understand the reality of outcomes being met or not met, by individual students FBP391.

For some supervisors evaluation of learning was dependent upon formal assessment and analysis of assessment records. For others, the critical skill for student and beginning teachers was the capacity to diagnose the extent of student learning and where necessary to propose appropriate strategies to remediate any deficiencies.

### Building on experience

The corollary of any process to reflect on teaching or learning is the consequent need for action from the teacher to remedy or improve practice where required. The relationship between evaluation and improvement was commented on by 8.6 per cent of supervisors. Generally, supervisors commented on improvements in practice that resulted from evaluation or assessment of their own teaching and students' learning. The following is typical of such comments:

Classroom skills showed positive development throughout her practicum and her evaluations were honest and resulted in improvements in the following lessons FSTP84.

### Involvement in Professional development

Professional development was the aspect of 'thinking about and improving on practice' most frequently noted in the reports with 21.8 per cent of supervisors providing comment on it. Supervisors identified a wide range of professional development activity in which student and beginning teachers were engaged. These include formal university and TAFE courses, a range of systemic programs and school and professional teaching organisation activities. The following quote is typical:

She is interested in further professional development and has attended a Regional Science Teachers' Conference and meetings of the local Science Teachers' Association FBSMs508.

***Most reported aspect of Thinking about and improving on practice***

Professional development was included in the area of 'Thinking about and improving practice' because of its potential to challenge teachers to think about and improve their practice. It was an area that was equally valued by primary and secondary supervisors (21.2 per cent and 22.2 per cent respectively). However, only a very small proportion of supervisors of student teachers (1.5 per cent) commented, compared with supervisors of beginning teachers (38.7 per cent). These data are understandable given the differences in the teaching assignments. Schools have no responsibility to provide professional development for student teachers. Supervisors commented on a range of formal and informal professional development activities in which student and beginning teachers engage.

Formal activities include courses leading to either a TAFE or university qualification.

I wish to commend XXXX initiative in completing an additional TAFE course in welding FBSMs465.

She has begun a University course to become an accredited tutor in the teaching of reading FBSH559.

They also include a range of system and school-based activities.

XXXX has attended staff development courses on ESL (as a member of the ESL Committee) in school workshops for new teachers and a vacation seminar on the new HSC Visual Art syllabus FBS0602.

She has participated in several Training and Development courses this year FBSH539.

He has attended inservice workshops with the Performing Arts unit in "Design" and "Script Writing" MSISC166.

Informal activities valued by teachers include participation in staff development days, and the provision of demonstration lessons.

YYYY has led a discussion group of beginning teachers during a staff development day MBP426.

XXXX is involved in the DSP Targeted Project, where she has presented demonstration lessons competently to staff at Stage 2 level. She participates in all School Development Days and has attended the District's T&D for Beginning

Teachers whilst at the same time is working towards her MEd degree<sup>FBP389.</sup>

Supervisors valued the range of professional development activities in which student and beginning teachers engage. Professional development is seen to contribute to teacher improvement providing opportunities to extend skills and knowledge and to learn new strategies for teaching and supporting student learning.

### **Discussion**

The 'teaching and learning cycle' is an important aspect of teachers' work. The reports identify that detailed and thoughtful planning and preparation set the stage for effective teaching. Reflection and critical analysis of teaching practice and student outcomes provide indicators for improving teaching practice and student learning.

Preparation and preparedness were seen by supervisors as important indicators of a young teacher's competence and professionalism, establishing a basis for their practice within the classroom or other teaching environments. Further, the extent of their preparation was seen by supervisors as being related to their success. Conversely, lack of preparation was seen as an impediment to success:

The major difficulty was her lack of preparation<sup>FStP152.</sup>

Lesson plans were identified in the reports as important elements of the preparation and planning process. While there were many comments about lesson plans in the reports, there was no discussion of a preferred form or structure for the plan. Nor was there any commentary about the importance of lesson planning to other aspects of teaching such as, effective delivery of content, management of student-teacher and student-student interactions. Nonetheless, supervisors valued lesson plans as concrete materials that provide a basis for supervisors to discuss the form, content and outcomes of lessons with student and beginning teachers.

Supervisors also commented upon student and beginning teachers' capacity to plan longer and more coherent units of work to develop themes, and explore concepts and issues. The capacity to develop a unit of work or a program of work requires different skills from those utilised in the development of a lesson plan. These include the ability to develop a logical structure for the unit of work, to sequence lessons or activities, to judge the time required to cover the program of work, and to develop effective evaluation and assessment tools to measure the learning outcomes of students.



Although some supervisors made reference to outcomes in the context of planning to achieve outcomes, in general, they did not make reference to the identification of outcomes within planning document. In relation to this aspect of teaching they did not capitalise on opportunities to comment on student and beginning teachers' understanding of the central role played by outcomes in providing a rationale and direction for the planning of lessons or units of work and consequently the selection of activities and resources to be used.

Planning to meet students' individual needs was also an important priority for comment by supervisors. Comments in relation to meeting student needs were expressed in terms of addressing the range of student abilities and developmental stages within the classroom, the intellectual and social development of students, and the socio-cultural backgrounds of students. Despite the prevalence of supervisor comments on these issues within reports, the commentary did not provide insight into strategies for addressing individual student needs within planning.

As noted above, planning and preparation for learning are reliant on a cycle of evaluation and critical analysis for their continued success. Supervisors identified two major foci for the evaluation and analysis of teaching effectiveness. The first focus concerned reflection on and evaluation of the teaching event. The second focus was related to the evaluation of the extent of learning that occurred as a consequence of the teaching. While reflection on teaching will assist student and beginning teachers to analyse the effect of their own actions, including, for example, their capacity to engage students in learning, the fundamental issue is whether the intended learning 'outcomes were met or not.'

Supervisors also commented upon the student and beginning teachers' capacity to respond to their evaluation of teaching and learning by changing where needed. To adapt and change practice is, after all, the *raison d'être* for reflecting on teaching and learning. The reports did not, however, identify specific strategies that might be adopted by teachers seeking to change their practice as a consequence of reflecting on their experience and on student learning. For some student and beginning teachers, new and different strategies will be self-evident, for others, such strategies may only be learned through support and professional development.

The involvement of student and beginning teachers in a range of formal and informal professional development settings was valued by supervisors. Engagement in professional development has two potential outcomes. The first potential outcome being increased knowledge and skills of members of a profession. The second potential outcome is an increasing propensity to challenge, evaluate and review teaching practice as a consequence of broader knowledge and skills. Although professional development was commented on equally

by primary and secondary supervisors, there was significant difference between the level of comment of student and beginning teachers. That few supervisors of student teachers commented, reflects the lack of opportunity of student teachers to engage in professional development as a consequence of the temporary nature of their appointment to the school.

Some aspects of teaching identified in the 'Teaching and learning cycle,' such as lesson planning, appear to be relatively highly valued by supervisors. The reason for this is not self-evident in the reports. One possibility is that they provide an identifiable opportunity, or in some cases artefacts, for supervisors to engage teachers. A lesson plan or a written evaluation of a lesson is a much more concrete piece evidence to consider, than their own observations of a lesson. Lesson plans and lesson evaluations also provide a framework for analysing the effectiveness of a lesson. The more limited comments related to reflection on learning would tend to affirm this assertion, as learning outcomes are often not immediately evident to the teacher let alone the supervisor.

## **PROFESSIONAL CHARACTERISTICS AND RELATIONSHIPS**

The fourth theme identified in the reports concerns comment on professional characteristics and relationships. This theme involves discussion of comments about teachers themselves. The first aspect, 'personal characteristics' lists dispositions identified by supervisors as being related to successful teaching. The second aspect, 'professional relationships' discusses the range of interpersonal relationships in which student and beginning teachers engage. These include their capacity to work with supervisors and mentors as well as their relationships with their peers, parents and community members.

### **Personal characteristics**

A number of personal characteristics of student and beginning teachers was identified by supervisors with the inference that these characteristics were relevant to their success or otherwise as teachers. Characteristics that were identified include:

- Professionalism
- Confidence
- Enthusiasm
- Initiative
- Commitment

- Maturity
- Holding high expectations of students
- Organisation
- Punctuality
- Grooming.

### ***Overview of aspects of Personal characteristics***

#### Professionalism

Professionalism was identified as an important personal characteristic of student and beginning teachers by 34.6 per cent of supervisors. While supervisors commented specifically about the professionalism of the student or beginning teacher, others commented on the professional demeanour, attitude or manner of the student or beginning teacher, for example.

Miss XXXX approached her teaching tasks conscientiously and conducted herself in a friendly and professional manner FStSMs162.

Some supervisors elaborated on professionalism commenting on professional ethics or ethical behaviour, the professionalism of the teachers' speech or language, their dress, and professional standards.

#### Confidence

The confidence of the student and beginning teachers studied was noted in 19.6 per cent of reports. Confidence was seen as an important characteristic of teachers beginning their careers. Many supervisors commented directly about the confidence of student and beginning teachers, for example: YYYYY continues to mature professionally as his confidence in the educational setting grows MBSC529

However, others commented indirectly using such expressions as "easy going and open attitude" and "teaching style is open and relaxed."

#### Enthusiasm

Enthusiasm was the characteristic of student and beginning teachers most commented on by supervisors (46.5 per cent). An enthusiasm for teaching was highly valued by supervisors. Comments about enthusiasm in the reports focused on the attitude and disposition of the teachers. Comments such as the following were typical:

XXXX has a very positive and enthusiastic attitude to teaching<sub>FSIP74.</sub>

### Initiative

Comments about initiative were noted in 21.3 per cent of reports. Supervisors commented on the use of initiative in a range of contexts. These include its use in lesson planning, selecting and developing teaching resources, teaching and in taking on responsibility at a faculty or whole school level. While many supervisors referred specifically to initiative in their comments, others wrote in terms of the teacher being “resourceful and self reliant,” for example:

She is resourceful and self-reliant displaying a willingness to learn and to take on added responsibility<sub>FBP295.</sub>

Whereas initiative was seen to be an ingredient of success, lack of initiative was seen to be an impediment.

### Commitment

The commitment of student and beginning teachers was commented on by 41.4 per cent of supervisors. Comments about the teachers’ commitment to teaching such as the following quote were common in the reports.

XXXX has demonstrated a caring attitude toward the students and a genuine commitment to teaching<sub>FSIP39.</sub>

Commitment was also used to describe teachers’ approach to specific aspects of their work, for example, in involvement in extracurricular activities. Commitment was also described in terms of “dedication,” being “diligent” and undertaking duties in a “conscientious” manner.

### Maturity

The maturity of the student and beginning teachers who were the subject of the reports was commented on by 12.6 per cent of supervisors. In general, the comments of supervisors appear to be a response to their judgement of the responsibility and reliability of the teacher. Comments such as the following quote were typical of these:

Miss XXXX is of mature character and is a good role model for our students<sub>FSISMs159</sub>

However, the following comment indicated that maturity was also used by some supervisors in the context of the teachers’ developing skills

YYYY has a mature and professional manner and he has gained the respect of his peers MBSH581.

### Hold high expectations

Holding high expectations of students was discussed by supervisors in 9.0 per cent of reports. Some supervisors commented explicitly in relation to teacher expectations, for example:

She sets clear expectations and ensures these are met FBSH537.

Other supervisors referred indirectly to teachers' expectations using such terms as "maintaining high standards," providing "a challenging classroom," and students are "constantly challenged."

### Organisation

Teachers' organisational skills were discussed in 15.4 per cent of reports. Being well-organised was valued by supervisors with organisation being relevant to classroom, faculty and school level activities. The following quote demonstrates the range of organisational contexts:

Her organisational skills are excellent both in the classroom and at faculty level FBSH577.

Comments in the reports indicate that 'organisation' has two aspects: the first concerns the teachers' personal organisation, the second being related to their capacity to organise activities and events.

### Punctuality

The punctuality of student and beginning teachers was a subject considered in 12.0 per cent of reports. Supervisors commented on punctuality in general terms and in relation to getting to class on time, attending meetings, performing duties such as playground duty, and administrative responsibilities. The following is a typical comment:

She is punctual in performing all duties and prompt in the presentation of all documentation FBP323.

### Well-groomed

Appearance and dress were commented on by 4.7 per cent of supervisors. Those supervisors who commented on this characteristic of student and beginning teachers appear to value a

specific standard of dress for teachers as being representative of a professional attitude. In a number of reports comments about dress and appearance appear in the same sentence as comments about professionalism, for example:

YYYY is punctual, well dressed and highly professional MBP404.

### ***Most reported aspect of Personal characteristics***

Enthusiasm was the characteristic of teachers most commonly reported by supervisors. However, while, the proportion of supervisors primary and secondary teachers commenting on it were of the same order (44.3 per cent and 49.1 per cent, respectively), a greater proportion of supervisors of beginning teachers (55.2 per cent) commented on it than supervisors of student teachers (36.1 per cent).

Supervisors valued an enthusiastic attitude towards teaching for its positive effect on students and staff. The following comments demonstrate supervisors' positive response to teachers' enthusiasm for their role:

The children and I have enjoyed her enthusiasm and friendly manner FStP407.

XXXX an enthusiastic, outgoing, happy teacher, who imparts her cheerfulness and a sense of well being to the students in her class and her colleagues FBP281.

The infectious nature of teachers' enthusiasm and its effect on student interest and engagement in learning is largely inferred in supervisors' comments. However, enthusiasm was seen to be related to teaching, generally, as well to the subjects being taught, for example:

YYYY is a confident teacher and has shown great enthusiasm for teaching MSIP403.

She has good broad-based Science knowledge and skills, and great enthusiasm for her subject FStSMs224.

Conversely, supervisors were clear that lack of enthusiasm was a negative factor impacting on the success of teachers. The following quote makes this clear:

Miss XXXX would benefit from a far more enthusiastic approach toward teaching FBP92.

Although relatively ill-defined in terms of its impact on teaching and learning, enthusiasm is seen by supervisors as a necessary characteristic of an effective teacher.

### **Professional relationships**

'Professional relationships' is concerned with the relationship between the student and beginning teacher, and their supervisor, their peers, parents and the community. Their relationship with students was considered separately under 'management of students' as rapport with students is an essential aspect of managing students.

Five aspects of 'professional relationships' were identified from the reports.

- Accepts cooperating teacher's advice
- Works in a team with cooperating and other teachers
- School-wide involvement
- Relationship with parents and the community
- Implementation of policies.

#### ***Overview of aspects of Professional relationships***

##### Accepts cooperating teacher's advice

Almost half (48.0 per cent) of all supervisors referred to student and beginning teachers' willingness to accept criticism, guidance and advice from their cooperating teacher and peers. A willingness to seek and implement advice from more experienced staff members was valued by supervisors. Comments such as the following were common in the reports:

She has willingly accepted advice and has used these suggestions in following lessons FSTP139.

##### Working in a team with cooperating and other teachers

Working in a team was the aspect of professional relationships most frequently commented on by supervisors (58.3 per cent). Supervisors discussed this aspect of student and beginning teachers' work in general and in specific terms. Participation as a team member involved faculty and wider school contexts. The following comment exemplifies the importance supervisors attached to team membership:

XXXX has demonstrated her skills to be an effective staff team member. This has been shown at a faculty and whole school level. XXXX actively participates in faculty discussions, and has established solid professional relationships with colleagues FBSMs550.

#### School-wide involvement

The involvement of student and beginning teachers in school-wide activities was commented on by 54.3 per cent of supervisors. Involvement in a range of activities outside of the teachers' immediate area of responsibility, such as grade excursions, 'Education Week' activities is a manifestation of the student or beginning teachers' overall enthusiasm and their commitment to the school and to their profession. Supervisors commonly set out a range of activities demonstrating the extent of school-wide participation, for example:

Mr YYYY has proved to be exceptional in organisation and assistance on days when we've had other schools visit, visiting artists or we have gone on excursions, assisting above and beyond the duties of a student teacher MSIP107.

#### Relationship with parents and the community

Despite the importance attached to the partnership between teachers and parents in the education of young people in the literature and in policy documentation only 28.2 per cent of supervisors commented on the partnership between teachers and parents in the education of young people. Many supervisors addressed the issue generally, using such terms as "excellent rapport with ... parents," but others identified contexts for the relationship with parents and the community.

These contexts included communication with parents, involvement of parents in pastoral care issues and liaison with community support agencies. The role of the teacher in developing positive perceptions of the community towards the school was also an issue, for example:

She has shown that while holding the interests of the student at heart she can simultaneously consider the perceptions of the community towards the school and the role played by the staff of the school in influencing these perceptions FBSMs481.

#### Implementation of policies

The steps taken by student and beginning teachers to develop faculty and school-wide perspectives through familiarising themselves with and implementing the policies, routines and procedures of the faculty or school was an aspect of teaching commented on by 16.4 per cent of supervisors. For example:



Her attention to school, routines, policies, times and duties has been commendable<sup>FBP287.</sup>

### ***Most reported aspect of Professional relationships***

Working in a team with cooperating and other teachers was the aspect of professional relationships with the highest frequency of response. Although similar proportions of primary (53.6 per cent) and secondary supervisors (63.8 per cent) commented, approximately three times as many supervisors of beginning teachers (83.8 per cent) commented than supervisors of student teachers (27.7 per cent).

Many supervisors commented in general terms on the cooperation and teamwork of the student and beginning teachers, using language such as:

XXXX has worked harmoniously as a member of the PD/H/PE faculty team<sup>FBSP587.</sup>

and

XXXX works cooperatively with others<sup>FBP392.</sup>

While similar numbers of primary and secondary supervisors commented there was an apparent difference in the context for their comment. Secondary supervisors commented on cooperation and teamwork at both the faculty and school level, but they gave priority to cooperation at the faculty level. Primary supervisors commented in respect to the school staff or a designated team, e.g., “the junior primary team.”

The reports provide some insight into the contexts in which teachers can cooperate and work as a member of a team. One context was through involvement in staff meetings and staff discussions.

In faculty meetings, she presents equally confident contributions and willingly lends assistance working harmoniously as a member of staff.<sup>FBSH573.</sup>

For student teachers, involvement in team teaching and in the sharing of ideas, materials and resources were cited as examples of cooperation and teamwork, for example:

Her willingness to seek advice, learn, experiment, share her expertise and work in a team has allowed us to gain great benefits from this period<sup>FSIP127.</sup>

In some circumstances, beginning teachers were involved in working closely with support and other staff, such as reported in this quote:

She has developed strong links with the other special education staff, leading and assisting projects affecting both classes. XXXX has designed and implemented individual education programs for her students involving parents, other teaching staff and support staff<sub>FBSsp538</sub>

### **Discussion**

This fourth theme considered the attributes of student and beginning teachers and the relationships perceived as contributing to their successful commencement of their teaching career. The first area described, that of personal characteristics, considers a range of attributes of teachers that could be seen as contributing to their success. These are professionalism, confidence, enthusiasm, initiative, commitment, maturity, holding high expectations of students, organisation, and punctuality and grooming.

Several of these (being professional, enthusiastic, and committed to teaching) are concerned with teachers' disposition towards their profession. To this extent they are attitudinal in nature, but highly valued by supervisors. They signify the student or beginning teachers' desire to be a teacher and to take the profession of teaching seriously. They are also important signals to school students. No student wants to be taught by a teacher who is not interested in them or in what is being taught.

The issues of confidence and maturity were also discussed in the reports. These issues relate to the readiness of teachers to undertake their role. Lack of confidence can be a significant impediment to teachers faced with challenges to their authority. Similarly, immaturity can signify lack of readiness to accept the legal and ethical responsibility that comes with the role.

Initiative is also an important skill for teachers, as the role involves working for much of the time as the sole professional in the classroom. Teachers need to be able to show initiative, they need to be able to use their professional judgement to determine a suitable course of action to underpin the learning of students. They need also to be able to use their initiative to adapt and change whenever the circumstances dictate.

Holding high expectations of students is an important professional value for teachers. Learning concerns the constant expansion of knowledge and the development of skills, and teachers need to be committed to supporting students achieve to the best of their ability. Teachers

need also to set and hold high expectations for students' personal growth and behaviour. This latter aspect was addressed only indirectly in the reports by supervisors.

Organisational skill is another personal characteristic identified by supervisors. Being a teacher carries with it a significant responsibility for the management of students, the teaching that occurs in the classroom, the assessment of learning and reporting to students and their parents, and extracurricular activities such as sport and excursions. Being organised is an essential pre-requisite for success in all aspects of a teacher's work.

Other characteristics valued by supervisors include, punctuality and grooming. These were often cited together with professionalism. Being punctual and well-groomed are obviously seen by these supervisors to contribute to an image of the teacher as a professional.

The second area considered under this theme is that of professional relationships. Being able to establish and maintain good relationships with other teachers, parents and community members is an important skill for student and beginning teachers.

More than half of all supervisors commented on the relationship between the student or beginning teachers and their supervisors and cooperating teachers, their relationship with other teachers in the school and their school-wide involvement. Supervisors expect student and beginning teachers to be open to advice from their supervisors and peers in order to continue their development as professional teachers. Conversely, an unwillingness to take and use advice in their practice is seen by supervisors as devaluing their experience, wisdom and knowledge of their practice.

There is a wide range of contexts in which teachers are able to work in a team with their cooperating teacher and peers. These include team teaching, as well as working collaboratively and cooperatively on a range of planning and evaluation activities at the faculty, grade or school level. Apart for the obvious benefits of working to undertake mutually beneficial tasks, teachers need also to be able to model for their students the group work approaches that they advocate in the class, and that are the norm in the working environment.

Involvement in school-wide activities demonstrates three perspectives on teachers' work. The first is their willingness to take on additional responsibilities outside of their designated teaching responsibility, the second, is that they see themselves as being part of a larger organisation. Third, they see their contribution to student learning as occurring in a wider whole-school context.

Although all teachers need to be able to develop positive and mutually beneficial relationships with parents and the community, there were noteworthy differences between the proportion of

primary (40.6 per cent) and secondary (14.0 per cent) supervisors reporting on this aspect of teachers' work. These differences are largely cultural, with primary teachers seeing themselves as being jointly responsible with parents for the education of a child. On the one hand, secondary schools share the responsibility for the education of each child amongst a number of teachers. This dispersed responsibility means that secondary teachers are less aware and less responsive to parents. On the other hand, secondary students are older and expected to take greater personal responsibility for their own learning.

The last aspect of personal relationships concerns the predisposition of student and beginning teachers to learn and implement the procedures, policies and routines of the school, or faculty. Two perspectives on this aspect of teaching are evident from the range of comments. One perspective is that the policies, routines and procedures have been established to support teachers, so that adherence to them is good practice. Another perspective concerns the extent to which the student and beginning teachers see themselves as being part of a larger organisation.

The commentary above provides insights into those characteristics and relationships of student and beginning teachers valued by supervisors. While in themselves the characteristics and relationships are unremarkable for their contribution to a teacher's success, their absence provides recipes for failure.

## **CONCLUSIONS**

The supervisors' reports studied provided a rich source of comment and hence qualitative data considering wide-ranging aspects of teachers' work. The analysis supports conclusions in three areas. The first concerns the extent and adequacy of analysis to provide a detailed description of the knowledge, skills, characteristics, relationships, and teaching practices of student and beginning teachers. The second concerns the relationship between the descriptions of teaching derived from the reports to the theoretical framework of standards which was the subject of the investigations in Study 1. The third is the apparent difference in value attached by supervisors to different aspects of teaching.

In relation to the adequacy of the analysis to provide a comprehensive description of student and beginning teachers' knowledge, skills, practices and characteristics, the analysis identified fifty-four aspects of teaching in eight areas which were related to four broad themes. While the analysis provides important perspectives on the fifty-four aspects of teaching it did not support detailed analysis of these. The comments provided by supervisors, singularly and collectively,

did not provide insights, other than in a superficial way to important aspects of teachers' work such as, for example, being able to cater for individual differences amongst students in the classroom. Nor, for example, did the reports provide advice in relation to specific pedagogical content knowledge (Shulman, 1987).

Notwithstanding these comments, the analysis provides clear pointers to those aspects of teaching and teachers valued by supervisors, and therefore, to be developed in student and beginning teachers. In addition to the differences in the proportion of supervisors reporting on different aspects of teaching, there were apparent differences in the proportion of primary and secondary supervisors and the proportions of student and beginning teacher supervisors commenting on different aspects of teaching. The statistical significance of these differences and the differences in overall response of supervisors to the particular areas of teaching are investigated in Chapter 7.

The second area in which conclusions are possible concerns the apparent differences in value attached by supervisors to the different aspects and areas of teaching. There were noteworthy differences between the proportion of supervisors commenting on the different aspects of teaching, both within and across areas. These differences were apparent within each of the eight areas of teaching as well as between areas. Supervisors commented more readily on aspects of teaching relating to student management, preparation and planning, personal characteristics and professional relationships than those relating to knowledge of content and how students learn, teaching skill, managing learning, and thinking about and improving on practice. These differences suggest that in order to comment in more detail on these latter aspects of teaching, supervisors need to be much more familiar with the subjects of the reports and their teaching practices.

There are two major implications of these conclusions for the development and application of professional teaching standards. Although an analysis of the content of such reports is helpful in informing the development of professional teaching standards, it is an insufficient basis for their articulation. The analysis could be characterised as providing a singular focus on practice that is not balanced or informed by theory or research on effective teaching practice or theory about how students learn. If professional standards are to provide a basis for improving the quality of teaching, then they need to reflect both theory and practice.

A further implication of the analysis for the application of standards is that the comments in the reports predominantly reflect a 'behaviourist' response to the reporting criteria in Appendices 2 and 3. Despite the fact that the 'integrated model' (Hager & Becket, 1995) has been proposed as the most credible model for the development of professional teaching standards, it is not

clear how the application of such standards would 'look-like' in practice. While teachers generally express views that are consistent with an integrated model of competence, that is, any assessment of competence against standards should be responsive to the range of socio-cultural contexts in which teachers work, such perspectives are not evident from these reports.

Further investigation of the data derived for this analysis follows in Chapter 7. This analysis investigates differences amongst the responses of supervisors.

## **CHAPTER 7**

### **DIFFERENCES AMONGST SUPERVISORS' COMMENTS**

While subscribing to the view that our beliefs construct our experiences, it is necessary to recognise that individually we may not be the best people to clearly enunciate our beliefs and perspectives since some of these may lurk beyond ready articulation

(Munby, 1982, p.217)

#### **INTRODUCTION**

The previous chapter used qualitative research methods to analyse reports prepared by supervising teachers in order to identify the knowledge, understandings, skills, and characteristics expected of student and beginning teachers. This chapter uses quantitative methods to further investigate the qualitative data arising from the analysis of the reports. The basis of this quantitative analysis is output data provided by the NUD\*IST software. "Coding tables" (Qualitative Solutions and Research Pty Ltd, 1997) for each tree node were exported to Excel files to provide a matrix indicating the occurrence of a comment in a report linked to each sibling node.

For each report, the occurrence of a comment related to a sibling node is indicated in the matrix by a '1,' the occurrence of conflicting comments by a '-1' and the absence of a comment by a "0." The Excel files compiled for each node were aggregated into a single file for analysis. Prior to analysis by Rasch all conflicting scores were resolved.

The outcome of this exercise was the compilation of a table or spreadsheet indicating the aspects of teaching identified in each report.

The Rasch analysis of these '0' and '1' scores using the *QUEST* software allowed an 'aspect of teaching score' and a 'report score,' to be determined from item and case estimates respectively. To simplify the language throughout the discussion, the 'aspect of teaching score' is referred to as the 'aspect score.' The aspect scores and report scores provide more robust interval measures than the frequencies reported in the previous chapter. Another advantage of using of the Rasch estimates is that both scores are reported on a single logit scale which allows a comparison to be made between 'aspect scores' and the 'report scores.'

The availability of an interval score for each of these measures also provides a basis for quantitative analysis of differences amongst supervisors' comments in relation to each of the aspects of teaching identified in the NUD\*IST analysis and the extent of comment in reports relating to particular student teacher groups. The empirical techniques used to analyse differences within the reports were ANOVA and Differential Item Functioning analysis. Specifically, this chapter investigates:

- the validity of the construct and the reliability of estimates derived from the Rasch analysis, including ordering of estimates
- aspects of teaching that supervisors more readily or less readily comment upon
- differences in the extent and form of comment supervisors make in relation to particular groups of teachers.

These three investigations provide the organising framework for the presentation and discussion of results.

### **CONSTRUCT VALIDITY AND RELIABILITY OF ESTIMATES.**

As with the Rasch analysis, described in Chapters 4 and 5, the NUD\*IST data described above, were submitted to the *QUEST* software (Adams & Khoo, 1996) to provide a range of Rasch statistics (Appendix 10). 'Aspect scores' derived from item estimates provide a measure of the extent or amount of comment in relation to a particular aspect of teaching. 'Report scores,' or case estimates quantify, in interval terms, the number of aspects of teaching commented upon within each report.

Prior to proceeding with the analysis of the aspect scores and report scores, some key questions need to be addressed. These concern whether a statistically valid construct exists, and hence, whether the aspect scores are reliably separated along an 'aspects of teaching' continuum.

#### **Construct validity**

The fit statistics for the Rasch analysis of the NUD\*IST data are displayed in Table 7.1. The item estimate of 0.98 produced by *QUEST* is well above the accepted lower limit of 0.7 (Wright & Masters, 1982). In addition, the infit mean square of 1.00 and infit *t* of -0.24 indicate that the



data conform to the Rasch model, and support the existence of a valid construct. The data are therefore suitable for further analysis.

**Table 7.1: Rasch analysis *Aspects of teaching* – Summary of estimates**

Estimates (Thresholds)				(N = 602 L = 54 Probability Level= .50) QUEST			
<b>Summary of item estimates</b>				<b>Summary of case estimates</b>			
Mean	0.00			Mean	-1.87		
SD	1.15			SD	0.78		
SD (adjusted)	1.14			SD (adjusted)	0.66		
Reliability of estimate	0.98			Reliability of estimate	0.71		
<b>Fit Statistics</b>				<b>Fit Statistics</b>			
Infit Mean Square	Outfit Mean Square			Infit Mean Square	Outfit Mean Square		
Mean	1.00	Mean	1.05	Mean	1.00	Mean	0.09
SD	0.06	SD	0.24	SD	0.15	SD	0.59
<b>Infit t</b>				<b>Outfit t</b>			
Mean	-0.24	Mean	0.09	Mean	0.00	Mean	0.09
SD	1.42	SD	1.58	SD	0.77	SD	0.83
0 items with zero scores				0 cases with zero scores			
0 items with perfect scores				4 cases with perfect scores			

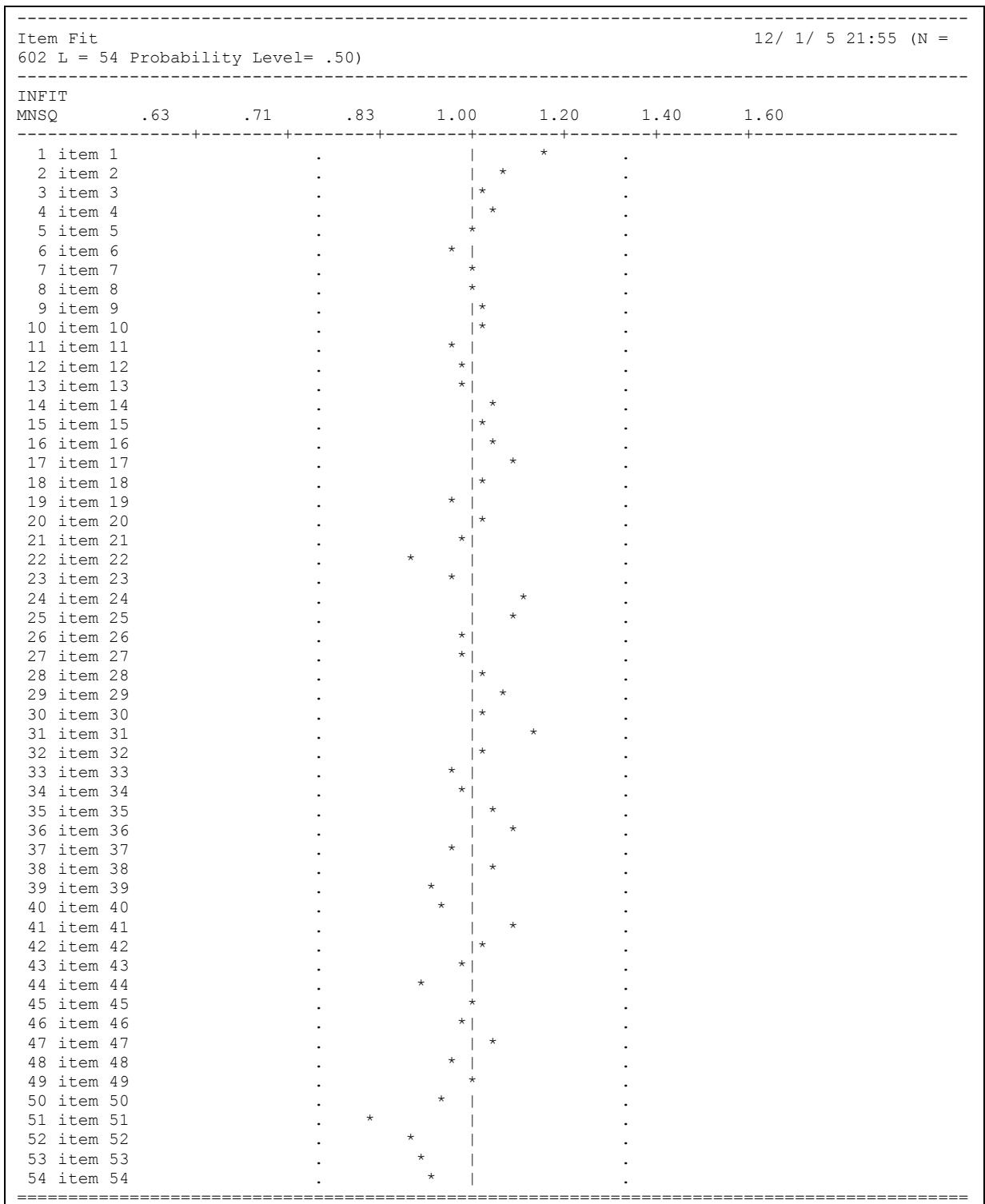
The construct or latent trait inferred by Rasch is concerned with the aspects of teaching identified within supervisors' reports. The construct could be defined as the 'knowledge, understandings, skills and characteristics required of student and beginning teachers.'

The low mean case estimate of -1.87 compared with the mean item estimate of 0.00, is consistent with observations made during the NUD\*IST analysis that a large number of reports contained few comments about the student and beginning teachers who were the subject of the reports.

Further, the Item Fit Map calculated by *QUEST* (Figure 7.1) shows all aspects of teaching plot within the parallel lines delineating the bounds of acceptable item fit. As there are no statistical reversals amongst the aspects of teaching identified by the NUD\*IST analysis, it can be assumed that each aspect of teaching fits the statistical construct.

### Ordering of aspects of teaching

The existence of a valid construct means that item estimates can be separated or ordered along a continuum of item estimates or aspect scores. Scores for each aspect of teaching calculated by the *QUEST* software using the Tau function.



**FIGURE 7.1: Item Fit Map – Aspects of teaching identified in NUD\*IST analysis of student and beginning teacher reports**

Aspect scores are provided in Table 7.2. The numbering of teaching themes and areas correspond to those used in Table 6.1. While the analysis reports aspect scores (item estimates) these need to be interpreted counter-intuitively.

**Table 7.2: Rasch estimates Aspect scores**

Theme	Area	Aspect number	Aspect of Teaching	Aspect Score
a	1	1	Knowledge and understanding of content	0.10
a	1	2	Breadth of knowledge	0.80
a	1	3	Integrating ideas or themes within a unit	1.82
a	1	4	Specialised knowledge	0.56
a	1	5	Content appropriate to students	0.02
a	1	6	Knowledge of curriculum and syllabuses	0.40
a	1	7	Articulate a philosophy of learning	1.22
a	2	8	Questioning techniques	1.32
a	2	9	Oral communication skills	0.23
a	2	10	Handwriting and blackboard skills	2.23
a	2	11	Interpersonal skills	1.43
a	2	12	Supervision skills	2.52
a	2	13	Technological skills	0.75
b	3	14	Management of time	1.09
b	3	15	Management of lesson transitions	2.32
b	3	16	Logical structure to the lesson	0.92
b	3	17	Flexibility in delivery	-0.06
b	3	18	Use of a range of teaching strategies	-1.43
b	3	19	Use of resources	0.22
b	3	20	Catering for individual differences	-1.57
b	3	21	Motivation of students	-1.07
b	3	22	Following-up	1.32
b	3	23	Appropriate classroom environment	-0.70
b	3	24	Assessment and evaluation of learning	-0.74
b	3	25	Experience teaching a variety of classes	-0.17
b	4	26	Rapport with students	-2.58
b	4	27	Use a variety of techniques	0.06
b	4	28	Establish rules	-0.69
b	4	29	Use positive reinforcement	0.40
b	4	30	Manage disruptive students	0.28
c	5	31	General planning and preparation	-0.10
c	5	32	Plan lessons	-1.41
c	5	33	Plan units of work	-1.00
c	5	34	Plan for outcomes	-0.08
c	5	35	Plan for individual needs	0.22
c	6	36	Reflecting on teaching	-0.34
c	6	37	Reflecting on learning	0.69
c	6	38	Building on experience	0.62
c	6	39	Involvement in professional development	-0.44
d	7	40	Professionalism	-1.13
d	7	41	Confidence	-0.30
d	7	42	Enthusiasm	-1.68
d	7	43	Initiative	-0.41
d	7	44	Commitment	-1.45
d	7	45	Maturity	0.25
d	7	46	Holding high expectations of students	0.64
d	7	47	Organisation	0.01
d	7	48	Punctuality	0.31
d	7	49	Grooming	1.36
d	8	50	Accepts cooperating teacher's advice	-1.66
d	8	51	Works in a team	-2.21
d	8	52	School-wide involvement	-2.03
d	8	53	Relationship with parents & community	-0.81
d	8	54	Implementation of policies	-0.07

In the language of test result analysis, high item difficulty scores indicate aspects of teaching that supervisors found 'harder' to comment upon, that is, aspects of teaching with fewer comments. Low item difficulty scores indicate aspects of teaching that supervisors found 'easier' to comment upon, that is, aspects of teaching with higher levels of comment.

The five aspects of teaching with the lowest aspect scores, that is, those that supervisors commented more readily upon were *Rapport with students*, *Works in a team*, *School-wide involvement*, *Enthusiasm* and *Accepts cooperating teacher's advice*. Similarly, the five aspects of teaching with the highest aspect scores, that is, aspects of teaching with the least amount of comment were *Supervision skills*, *Management of lesson transitions*, *Handwriting and blackboard skills*, *Integrating ideas and themes within a unit of work*, and *Interpersonal skills*.

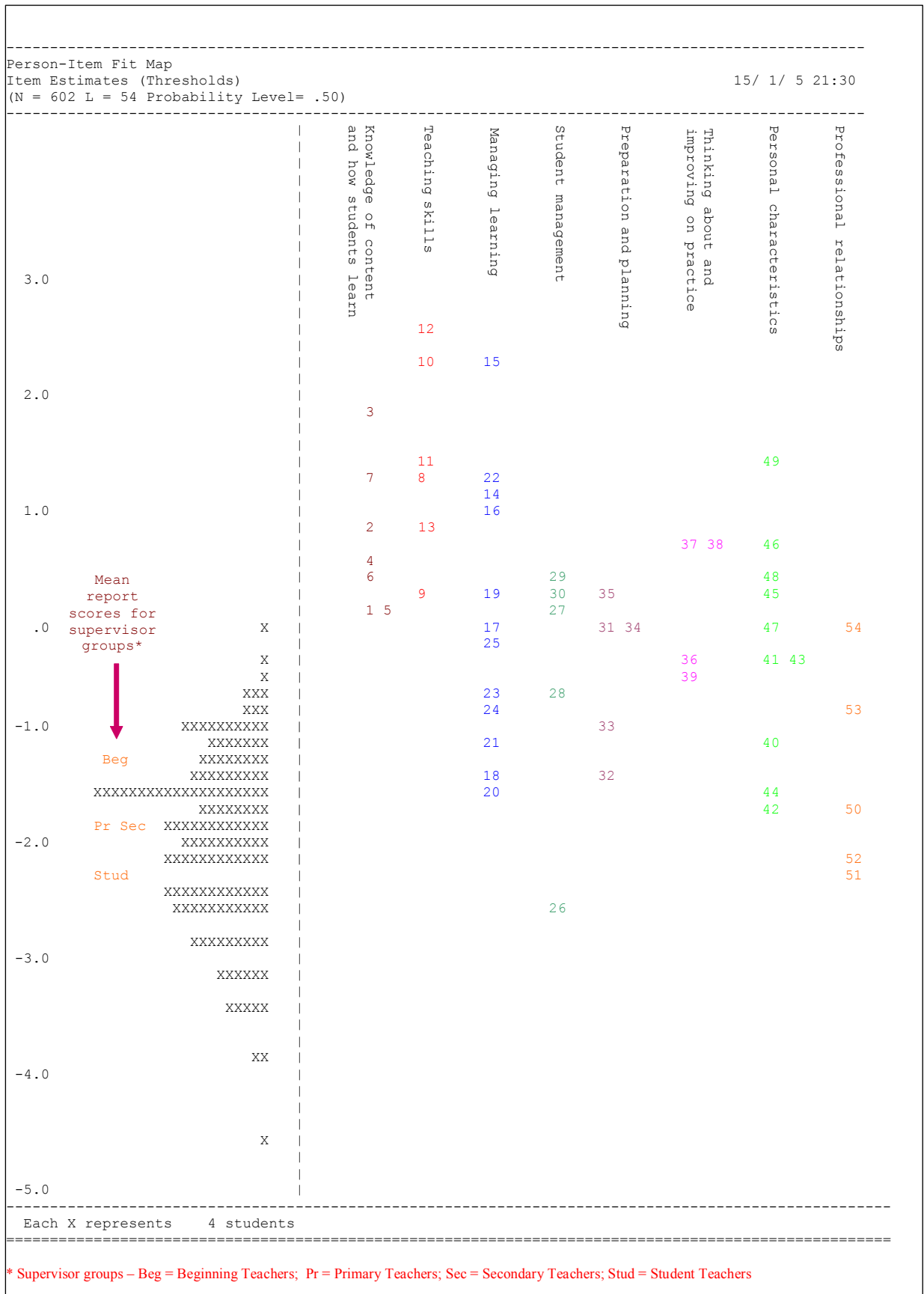
The separation of the aspect scores along a continuum is demonstrated in the modified Report Score-Aspect Score Fit Map (Figure 7.2). The scores for each aspects of teaching have been disaggregated on the Fit Map into the eight teaching areas identified by the NUD\*IST analysis.

This disaggregation indicates the potential for significant differences amongst the mean aspect scores across the eight areas of teaching. Aspects of teaching within the areas of *Professional relationships* and *Preparation and Planning* appear to have lower aspect scores indicating supervisors commented more readily on these aspects of teaching. Aspects of teaching in the areas of *Knowledge of content and how students learn* and *Teaching skills* appear to have high aspect scores indicating supervisors commented less readily in these areas.

There are also apparent differences in the aspect scores across the four teaching themes. Scores for aspects of teaching within the theme *Foundation knowledge and skills* appear to be higher than those for aspects of teaching within the themes of the *Teaching and learning cycle* and *Professional characteristics and relationships*.

The mean report scores for supervisors' reports on primary and secondary teachers and student and beginning teachers were also plotted against the distribution of case estimates on Figure 7.2. These reveal potential differences in mean report scores across the different groups of reports identified in the study. While there are no apparent differences in mean report scores of primary and secondary teachers, report scores for beginning teachers were higher than those for student teachers.

**g1FIGURE 7.2: Report Score – Aspect Score Fit Map: Aspect scores by Teaching**



### area

The significance of the above findings about construct validity and ordering of aspect scores is discussed below. Apparent differences in report scores across groups of reports are investigated more fully in a later section of this chapter.

## DISCUSSION

The use of Rasch to analyse the output of the NUD\*IST analysis represents the application of positivistic or quantitative methodologies to a qualitative study. The Rasch analysis of supervisors' reports on student and beginning teachers could be considered to be a tertiary analysis of the source data, that is, supervisors' reports on the knowledge, understandings skills and attributes of student and beginning teachers. However, it provides both a means of validating the qualitative methodology as well as further data for quantitative analysis.

The Rasch reliability data, discussed in Study 1 enabled inferences about the consistency of teachers' responses to the survey instrument. These inferences concerned the probability that a different sample of teachers would respond in the same way. The validation data reported in this study can also be used to draw inferences about the consistency with which aspects of teaching were identified within the reports.

In this study, there are potentially two perspectives on consistency. The first relates to the consistency with which supervising teachers commented upon the aspects of teaching in the reports. The second, concerns the consistency with which the researcher identified and coded supervisors' comments within the reports. In this analysis, the latter perspective is what is being measured. The Rasch item reliability index of 0.98 calculated by *QUEST* infers that the probability that the researcher would code the occurrences of the aspects of teaching identified within the reports differently is no more than 2 per cent.

Notwithstanding the fact that another researcher may have proceeded from a different epistemological perspective and identified a different set of nodes, Rasch analysis of the occurrences of aspects of teaching identified within the framework of teaching themes and areas of teaching presented in this study provides an additional perspective to the trustworthiness of the researchers' analysis.

Where they can be generated, Rasch statistics have the potential to provide objective criteria to be considered alongside qualitative elements of credibility, transferability dependability and

confirmability identified by (Guba & Lincoln, 1989). Item and case reliability estimates support conclusions about the consistency of coding.

The valid separation of aspect and report scores on a continuum provides significant potential for analysis of patterns of comment across the aspects of teaching and across the different groups of supervisors. However, the reasons for such patterns have not been investigated in this study.

There are many reasons why supervisors might choose to comment or not to comment on particular aspects of teaching. It may be that the aspect of teaching was not evident in the student or beginning teacher's practice. It may be that the supervisor did not have the expertise to identify the aspect of teaching, or did not see it as relevant to the teaching context.

Nonetheless, the potential to measure amounts of comment and to quantify differences in patterns of comment presents opportunities for further research beyond this study. Such work could involve focused-interviews with supervisors to determine the reasons for their comment or lack of comment. This research would be instructive in learning more about the report writing processes adopted by supervising teachers.

As noted above, the separation of aspect scores on a continuum determines an order amongst the aspect scores. Figure 7.2 provides a diagrammatic representation of the patterns amongst aspect scores across the teaching themes and areas of teaching. Analysis of differences in these patterns provides the substance of the next section of this chapter. Differences in the pattern of supervisors' comment about specific aspects of teaching are investigated by testing hypotheses about differences in the mean aspect score of themes and areas of teaching.

### **ASPECTS OF TEACHING THAT SUPERVISORS FIND EASIER OR MORE DIFFICULT TO COMMENT UPON**

The valid separation of aspect scores along a continuum discussed in the previous section allows an order to be determined amongst aspects of teaching. While some generalisations were made about this order, further analysis is possible in relation to the four themes and eight aspects of teaching identified as part of the NUD\*IST analysis.

### Differences in aspect scores across the four teaching themes

Descriptive statistics relating to aspect scores for the four teaching themes were calculated and presented in summary in Table 7.3. The statistical significance of the apparent difference between the mean aspect scores was tested through a one-way ANOVA using the SPSS statistical package.

**Table 7.3: Summary Statistics: Aspect scores by Teaching theme**

Teaching theme	<i>n</i> *	Mean Aspect score	Std Deviation
Foundation knowledge and skills	13	1.031	.808
Classroom and student management	17	-.141	1.198
The teaching and learning cycle	9	-.204	.693
Professional characteristics and relationships	15	-.612	1.058
TOTAL	54	0.000	1.153

\* Number of aspects of teaching

Assumptions of population normality and homogeneity of variance underpinning the ANOVA were tested prior to the analysis. Normality of the sample was assumed as the Rasch estimates or aspect scores are normally distributed. This highlights one advantage of using Rasch estimates instead of the original frequency scores. The Levene test for homogeneity of variances is not statistically significant ( $p=0.276$ ) so that population variances for each group can be assumed to be approximately equal.

A one-way ANOVA was used to test the null hypothesis  $H_0$ : *There is no statistically significant difference between the mean aspect scores for each teaching theme.*

The significance level of the F-statistic ( $p=0.001$ ) calculated by SPSS rejects the null hypothesis. Post hoc comparisons using Tuckey's HSD test were used to determine the source of the apparent differences. These tests show the mean aspect score for the theme *Foundation knowledge and skills* is significantly different at an alpha level of 0.05 to those of each of the other teaching themes: *Classroom and student management* ( $p=0.013$ ); *Teaching and learning cycle* ( $p=0.032$ ); and *Professional characteristics and relationships* ( $p<0.01$ ).



### Differences in the aspect scores across the eight areas of teaching

A summary of descriptive statistics for aspect scores in each of the eight areas of teaching is presented in Table 7.4. A one-way ANOVA was used to investigate the statistical significance of the apparent differences in mean aspect scores across the eight areas.

As with the previous analysis assumptions underpinning the ANOVA model were examined prior to the analysis. Once again, population normality was assumed as Rasch estimates are normally distributed. As the Levene test of homogeneity of variance was not statistically significant ( $p=0.556$ ) it can be assumed that the standard deviations for each area of teaching are approximately equal.

The one-way ANOVA was used to test the null hypothesis  $H_0$ : *There is no statistically significant difference between the mean aspect scores for the areas of teaching.*

**Table 7.4: Summary Statistics: Aspect scores by Areas of teaching**

Areas of Teaching	$n^*$	Mean	Std. Deviation
1. Knowledge of content and how students learn	7	0.7029	0.64119
2 Teaching skills	6	1.4133	0.86498
3 Managing learning	12	0.0108	1.20345
4 Student management	5	-0.5060	1.23433
5 Preparation and planning	5	-0.4740	0.69454
6 Thinking about and improving on practice	4	0.1325	0.60539
7 Personal characteristics	10	-0.2400	0.96043
8 Professional relationships	5	-1.3560	0.89832
TOTAL	54	-0.0004	1.15317

\* Number of aspects of teaching

The F-test comparing mean aspect scores indicates a statistically significant difference ( $p=0.001$ ) between the mean aspect scores of the eight areas of teaching. A post hoc analysis using the Tuckey HSD multiple comparison test was undertaken in order to determine the source of these differences.

This analysis found statistically significant differences between the mean aspect scores of:

- teaching areas 1 and 8 ( $p=0.014$ )
- teaching areas 2 and 4 ( $p=0.038$ )
- teaching areas 2 and 5 ( $p=0.043$ )
- teaching areas 2 and 7 ( $p=0.035$ )
- teaching areas 2 and 8 ( $p=0.001$ ).

These results and their implications are considered in the discussion that follows.

## DISCUSSION

The use of Rasch item estimates to provide interval measures or score for each aspect of teaching has provided a basis for investigating the outcomes of the NUD\*IST analysis from a quantitative perspective. Given the form of this study, that is, an analysis of a large number of written supervisors' reports, it is useful to have an answer to the question, "Which aspects of teaching do supervisors emphasise?"

While some conclusions are possible from analysis of the aspect scores set out Table 7.2, the information is too disaggregated to draw firm conclusions or to make clear generalisations about broader differences and patterns of comment in relation to the themes and areas of teaching. The investigation of differences in aspect scores across teaching themes and areas sheds further light on those aspects of teaching emphasised by supervisors.

The first observation from Table 7.3 arises from the apparent order or hierarchy of mean weights of comment across the themes. Supervisors appeared to comment upon the themes of teaching in the following order from more readily to least readily: *Professional characteristics and relationships*; *Teaching learning cycle*; *Classroom and student management*; and *Foundation knowledge and skills*. However, the comparison of means undertaken through an ANOVA indicates that only the teaching theme of *Foundation knowledge and skills* was significantly different from the other three.

Analysis of differences amongst the areas of teaching provides a different perspective (See Table 7.4). Supervisors provided significantly less comment on aspects of teaching in *Knowledge of content and how students learn* than for *Professional relationships*. They also provided significantly less comment for *Teaching skills* than for *Preparation and planning*, *Student management* and *Personal Characteristics and Professional relationships*.

Clearly, supervisors commented more readily upon some aspects of teaching than others. They commented less readily on aspects of teaching related to knowledge of content and how students learn, and the generic teaching skills of student and beginning teachers. The readiness with which supervisors comment on such aspects of teaching will be dependent to some extent on the opportunities they have had to observe the teaching of the student or beginning teacher.

Supervisors, however, commented more readily on aspects of teaching concerned with the management of students. There are several possible explanations for this emphasis. One is the primary importance that supervisors attach to student and beginning teachers' capacity to manage student behaviour. Another is the conspicuous evidence that is available to supervisors to make judgements about the capacity of student and beginning teachers to manage students.

Preparation and planning is another area to receive emphasis. A possible reason for this is that supervisors are able to base their judgements and comments on concrete evidence or artefacts of the teachers' work such as lesson plans, unit plans, teaching programs and day books. Overall, the results indicate that supervisors comment more readily on aspects of teaching that do not require extensive classroom observation, or a high degree of professional judgement as to the knowledge and skills required for effective teaching.

The next section continues the analysis of the Rasch output, focusing on analysis of differences in emphases amongst supervisor groups.

### **DIFFERENCES IN THE EXTENT AND FORM OF COMMENT OF SPECIFIC GROUPS OF SUPERVISORS**

This section is concerned with investigating differences in the extent and form of comment amongst specific groups of supervisors. The specific groups of supervisors are identified in terms of the subjects of their reports, that is, the gender of the teachers reported upon, the subject taught by the teacher in the case of secondary teachers, the school stage, that is, primary or secondary teachers, and teaching stage which differentiates student teachers from beginning teachers.

As noted previously, the application of Rasch to the NUD\*IST data allowed a report score (case estimate) to be determined for each report. These scores provide a basis for determining the significance of differences in the extent of comment between groups of teachers.

Differences in the form of comment were investigated using the *QUEST Compare* function to investigate the extent of Differential Item Functioning. The methodology for this analysis was described in Chapter 5. These two analytic questions underpin the description of results in this section.

### Differences in the extent of comment of specific groups of supervisors

Descriptive statistics are presented for the independent variables comprising groups of supervisors identified in Tables 3.1 and 3.2 and dependent variables the report scores or Rasch case estimates calculated from the NUD\*IST data in Table 7.5.

**Table 7.5: Summary Statistics: Report scores by Supervisor group**

Supervisor Groups	<i>n</i>	Mean	Std. Deviation
<i>Gender</i>			
• Female	461	-1.87	0.762
• Male	139	-1.88	0.831
<i>Secondary Subject Specialisation</i>			
• Mathematics Science and Technology	95	-1.93	0.817
• Humanities	120	-1.84	0.741
• Creative and Performing Arts	36	-1.83	0.815
• PDHPE	18	-1.38	0.462
• Special Education	8	-1.41	0.680
<i>School stages</i>			
• Primary teachers	323	-1.91	0.784
• Secondary teachers	278	-1.83	0.771
<i>Teaching stages</i>			
• Student teachers	273	-2.42	0.664
• Beginning teachers	328	-1.41	0.530
<i>Total</i>	601	-1.870	0.778

Where appropriate Univariate analysis was undertaken to test the null hypothesis  $H_0$ : *There is no statistically significant difference between the mean report scores for each of the different supervisor groups.*

### **Gender**

The descriptive statistics presented indicate almost identical mean report scores for female or male teachers. This result was not unexpected but is an important indicator that there was no bias in relation to the gender of the subjects in the reports prepared by supervisors.

### **Secondary subject areas**

A Univariate analysis was undertaken to test the null hypothesis that there was no difference in the mean report scores of groups identified on the basis of secondary subject specialisation. The required assumption of population normality was assumed, given that Rasch estimates are normally distributed. The Levene's test ( $H_0$ : *The error variance of the dependent variable is equal across groups*) indicates that the necessary assumption of homogeneity of variance was not violated ( $p=0.25$ ).

The Univariate analysis identified a statistically significant difference amongst the means of the subject specialisation groups ( $p=0.04$ ). Post hoc analysis indicated that there was a statistically significant difference between the mean report scores for the Mathematics, Science and Technology (Ms) group of teachers and the Personal Development Health and Physical Education (Pd) group of teachers ( $p=0.042$ ).

### **School stages**

A Univariate analysis was undertaken of primary and secondary teacher results. Assumptions underpinning the analysis were met, with Rasch scores being normally distributed and homogeneity of variance of results being confirmed by the Levene statistic ( $p=0.34$ ). The analysis showed that there was no statistically significant difference between the mean report scores of primary and secondary teachers ( $p=0.23$ ).

### **Teaching stages**

The assumption of homogeneity of variance underpinning the univariate analysis of differences between the mean report scores for primary and secondary teachers was not met – Levene statistic ( $p=0.03$ ). However, the univariate analysis showed a statistically significant difference between the mean report scores of student and beginning teachers ( $p<0.01$ ).

***Interactive effects***

There were no statistically significant interactive effects operating between teaching contexts and teaching stages. The next section reports on the outcomes of the analysis of Differential Item Functioning undertaken to investigate differences in the form of reporting across the groups.

**Differences in the form of comment of different groups of supervisors**

Differences in the form of comment were investigated using the *QUEST Compare* function (Adams & Khoo, 1996). This analysis was used to determine the extent of Differential Item Functioning of specific items or, in this case, aspects of teaching in relation to dichotomous groups of supervisors.

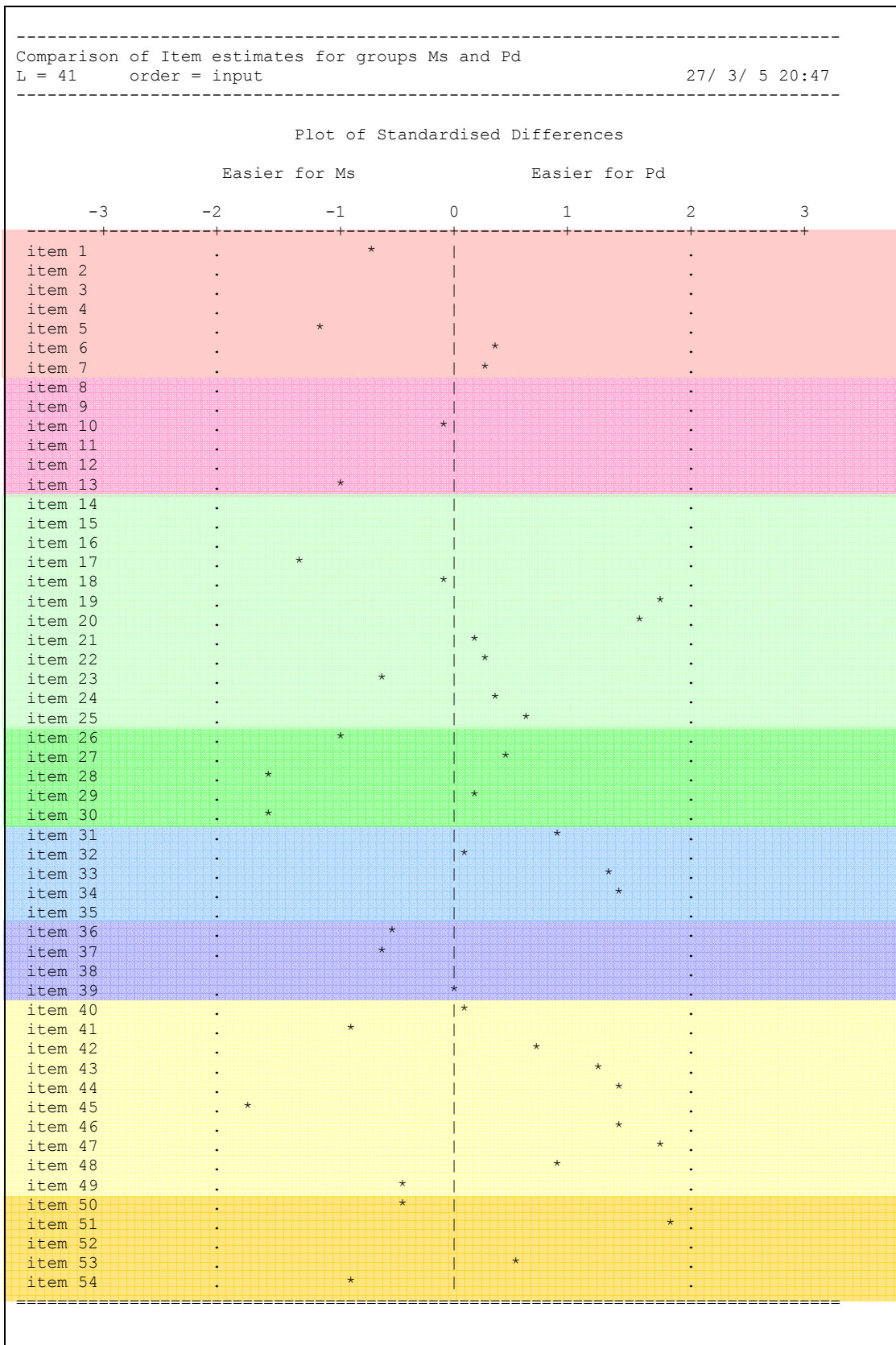
Three series of analyses were undertaken. The first concerned the analysis of Differential Item Functioning amongst the reports on secondary student and beginning teachers defined by their subject specialisation. Specifically, this analysis involved the Ms and Pd subject-based groups which were found in the previous analysis to have significantly different mean report scores.

The second involved a series of investigations of Differential Item Functioning with respect to groups defined by teaching stage, that is student and beginning teacher groups. This analysis was undertaken to identify the aspects of teaching contributing to the statistically significant difference in mean report score identified by the univariate analysis.

The third series of investigations involved analysis of Differential Item Functioning amongst primary and secondary teachers. This investigation was undertaken despite the lack of a statistically significant difference in the mean report scores of the primary and secondary teacher groups. These analyses were carried out to test the commonly held view that primary and secondary teachers value different aspects of teaching practice.

***Subject differences***

An analysis of Differential Item Functioning was carried out between the Ms and Pd subject groups identified in Table 7.5. The analysis identified forty-one aspects of teaching which functioned differentially, seventeen being favoured by the Ms group (Mathematics, Science and Technology teachers) and twenty-three by the Pd group (Personal Development Health and Physical Education teachers). However, the extent of differential functioning was not statistically significant for any aspect of teaching (see Figure 7.3).



**Figure 7.3: Differential Item Functioning: Comparison of Aspect scores: Ms and Pd teacher groups**

### ***Teaching Stages***

The analysis of Differential Item Functioning across teaching stages was concerned with identifying those aspects of teaching more readily commented upon by the respective student and beginning teacher supervisor groups. Three analyses were undertaken in the series. The first concerned a comparison between the comments of supervisors of all student and beginning teachers. The other analyses involved subsets of these groups, namely, student and beginning primary teachers, and student and beginning secondary teachers.

In order to compare the results of each analysis, the outcomes of the three analyses were combined by superimposing the standardised differences for each of the two subgroups on the plot for all student and beginning teachers. The results of this mapping are presented in Figure 7.4. Aspects of teaching where the extent of Differential Item Functioning was statistically significant ( $p < 0.05$ ) plotted outside of the parallel lines, that is they had standardised differences less than -2.0 and greater than +2.0.

#### Differences overall

Overall, twenty-nine aspects of teaching displayed statistically significant Differential Item Functioning ( $p < 0.05$ ), with supervisors of student teachers commenting more readily on 17 aspects of teaching, and supervisors of beginning teachers commenting more readily on 12 aspects of teaching. In general, supervisors of student teachers commented more readily than supervisors of beginning teachers on aspects of teaching in five-of-the-eight teaching areas. Supervisors of beginning teachers commented more readily on aspects of teaching in two of the eight areas (see Table 7.6).

#### Primary student and beginning teachers

The number of aspects of teaching displaying statistically significant Differential Item Functioning for this analysis was the same as for the overall group. However, there were slight differences between the patterns of differential functioning for the primary student and primary beginning teacher subgroups and the overall student and beginning teacher groups. With two exceptions, *Oral communication skills* and *Confidence*, all of the aspects of teaching identified in Table 7.6 were identified more readily by supervisors of primary student teachers.



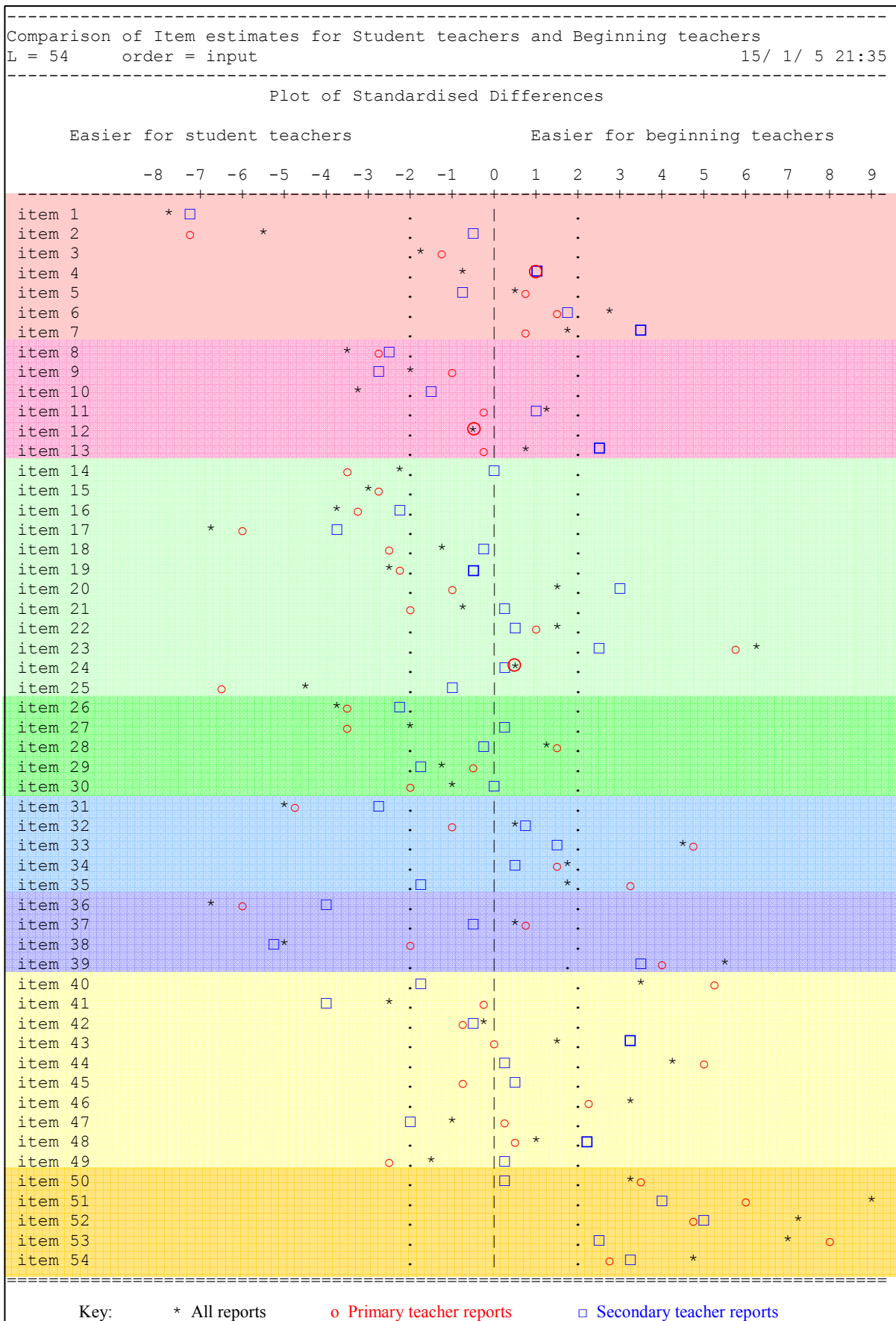


Figure 7.4: Differential Item Functioning: Comparison of Aspects scores: Teaching stages

They commented, however, more readily upon two others: *Use of a range of teaching strategies* and *Grooming*. There were two aspects of teaching that were perceived differently by primary beginning teachers and beginning teachers overall. These were *Articulate a philosophy of learning* which was commented upon more readily by beginning teachers overall and *Plan for individual needs* which was more strongly commented upon by primary beginning teachers.

#### Secondary student and beginning teachers

There were, however, fewer aspects of teaching that acted differentially with respect to secondary student and beginning teachers. Eleven aspects of teaching were more readily identified by supervisors of secondary student teachers and eleven by secondary beginning teachers.

In comparison with the aspects of teaching identified in Table 7.6 as acting differentially across all student and beginning teachers, aspects of teaching not acting differentially for secondary student teachers were *Breadth of knowledge*, *Handwriting and blackboard skills*, *Management of time*, *Management of lesson transition*, *Use of resources*, *Experience teaching a variety of classes* and *Use of a variety of techniques*. However, secondary student teachers commented more readily upon *Organisation* than did secondary beginning teachers.

In the same way, a number of aspects of teaching acted differentially for all beginning teachers but not for secondary beginning teachers. These were *Knowledge of curriculum and syllabuses*, *Plan units of work*, *Professionalism*, *Holding high expectations of students* and *Accepts cooperating teachers advice*. Aspects of teaching that acted differentially for secondary beginning teachers but not for all beginning teachers were *Technological skills*, *Catering for individual differences*, *Initiative* and *Punctuality*.

#### Comparison between groups

Similarities in the pattern of plots of standardised differences for all student and beginning teachers and those for the primary and secondary subgroups were tested using the SPSS package to calculate the correlation coefficients of the three pairs. The results are displayed in Table 7.7.

Statistically significant positive correlations coefficients ( $p < 0.001$ ) were identified between the standardised differences of all three pairs. The strongest correlations were between those for all teachers, and both the beginning teachers and the primary and secondary subgroups. A somewhat weaker, but still statistically significant correlation ( $r = 0.595$ ) was identified between the primary and secondary teacher subgroups.

**Table 7.6: Aspects of teaching commented upon more readily by supervisors of student and beginning teachers**

Student Teachers	Beginning Teachers
<p><b>Knowledge of content and how students learn</b></p> <ul style="list-style-type: none"> <li>• Knowledge and understanding of content</li> <li>• Breadth of knowledge</li> </ul> <p><b>Teaching skills</b></p> <ul style="list-style-type: none"> <li>• Questioning techniques</li> <li>• Oral communication skills</li> <li>• Handwriting and blackboard skills</li> </ul> <p><b>Managing learning</b></p> <ul style="list-style-type: none"> <li>• Management of time</li> <li>• Management of lesson transitions</li> <li>• Logical structure to the lesson</li> <li>• Flexibility in delivery</li> <li>• Use of resources</li> <li>• Experience teaching a variety of classes</li> </ul> <p><b>Student management</b></p> <ul style="list-style-type: none"> <li>• Rapport with students</li> <li>• Use a variety of techniques</li> <li>• Preparation and planning</li> <li>• General planning and preparation</li> </ul> <p><b>Thinking about and improving on practice</b></p> <ul style="list-style-type: none"> <li>• Reflecting on teaching</li> <li>• Building on experience.</li> <li>• Personal characteristics</li> <li>• Confidence</li> </ul> <p><b>Professional relationships</b></p>	<ul style="list-style-type: none"> <li>• Knowledge of curriculum and syllabuses</li> </ul> <ul style="list-style-type: none"> <li>• Appropriate classroom environment</li> </ul> <ul style="list-style-type: none"> <li>• Plan units of work</li> </ul> <ul style="list-style-type: none"> <li>• Involvement in professional development</li> </ul> <ul style="list-style-type: none"> <li>• Professionalism</li> <li>• Commitment</li> <li>• Holding high expectations of students</li> </ul> <ul style="list-style-type: none"> <li>• Accepts cooperating teacher's advice</li> <li>• Works in a team</li> <li>• School-wide involvement</li> <li>• Relationship with parents &amp; community</li> <li>• Implementation of policies</li> </ul>

**Table 7.7: Correlation coefficients standardised differences:  
Student and beginning teacher supervisor groups**

		<i>Student/Beginning</i>	<i>Primary</i>	<i>Secondary</i>
<i>Student/ Beginning</i>	<i>Pearson Correlation</i>	1	.946 **	.835 **
	<i>Sig. (2-tailed)</i>	.	.000	.000
	<i>n</i>	54	52	50
<i>Primary</i>	<i>Pearson Correlation</i>	.946 **	1	.595 **
	<i>Sig. (2-tailed)</i>	.000	.	.000
	<i>n</i>	52	52	48
<i>Secondary</i>	<i>Pearson Correlation</i>	.835 **	.595 **	1
	<i>Sig. (2-tailed)</i>	.000	.000	.
	<i>n</i>	50	48	50

\*\* . Correlation is significant at the 0.01 level (2-tailed).

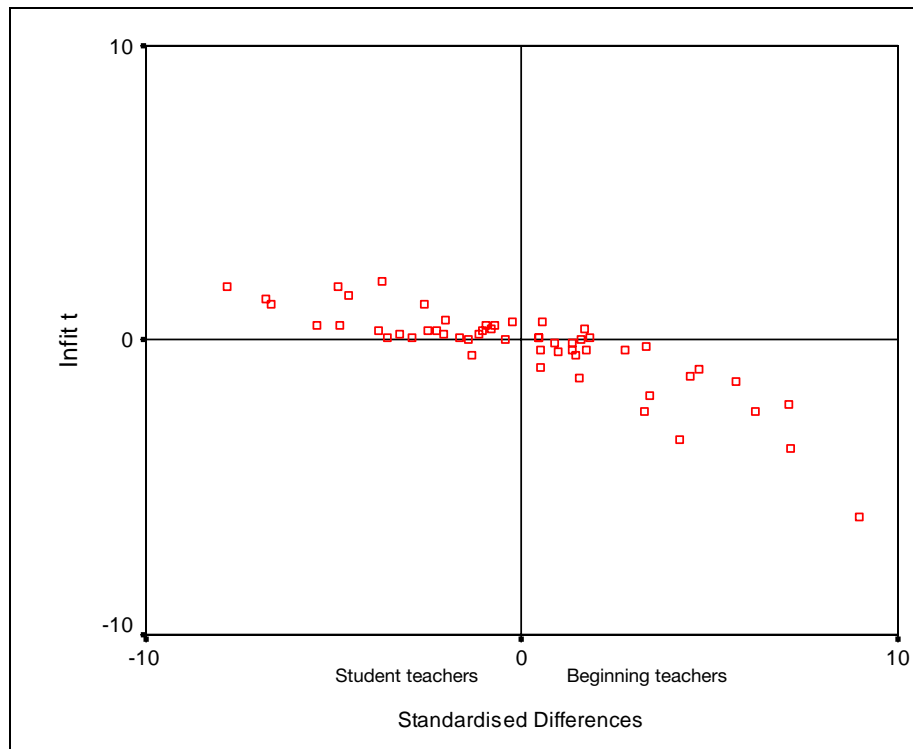
### The relationship between Item Misfit and Differential Item Functioning

The extent of statistically significant Differential Item Functioning evident in the analyses above is indicative of considerable variation in item estimates from the predicted or probabilistic model. This variation or misfit of items is commonly quantified through the use of Infit  $t$  statistics (Bond & Fox, 2001, p.209). In order to investigate potential relationships between the extent of item misfit and Differential Item Functioning of the student and beginning teacher groups and item infit  $t$  statistics, were plotted against the standardised differences calculated by the *Compare* function of *QUEST*.

A strong linear relationship was identified between the infit  $t$  scores and the standardised differences for the student and beginning teacher groups (Figures 7.5). This relationship was confirmed through correlation analysis ( $r=0.837$ ,  $p<0.000$ ). This suggests a systematic relationship between the misfit of items and the extent of Differential Item Functioning. The basis of this relationship and possible causal factors are considered in the Discussion at the end of this section. A similar analysis of differential item function in relation to the primary and secondary teachers follows.

### **School stages**

As with the previous analysis, three analyses of Differential Item Functioning were undertaken across primary and secondary teacher groups. The first involved the NUD\*IST outcomes of the reports of all primary and secondary teachers. The second and third analyses involved,



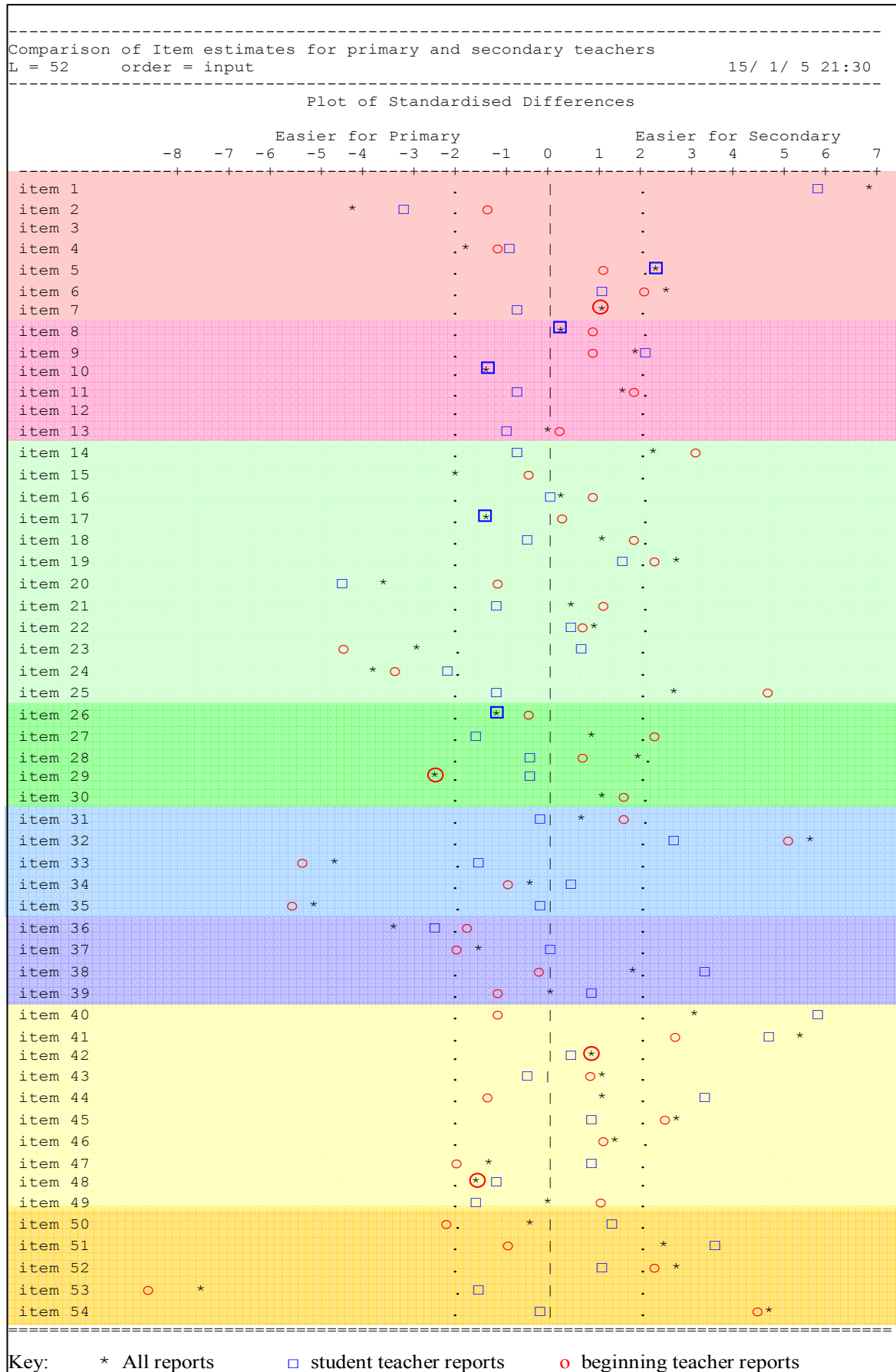
**Figure 7.5: Plot comparing infit  $t$  statistics with standardised differences: Student teachers-Beginning teachers**

As with the previous analysis, the three plots of standardised differences were combined in a single graph (Figure 7.6). The results are described under four headings: Differences overall, Primary and secondary student teachers, Primary and secondary beginning teachers, and Comparison between groups.

#### Differences overall

There were twenty-four aspects of teaching that displayed statistically significant ( $p < 0.05$ ) differential functioning. These are displayed in Table 7.8.

Primary teachers commented more readily on eleven aspects of teaching while secondary teachers commented more readily upon thirteen aspects of teaching. Areas of teaching with significant number of aspects of teaching that functioned differentially included *Knowledge of content and how students learn*, *Managing learning*, *Preparation and planning*, *Professional characteristics* and *Professional relationships*. No aspects of teaching in the area of *Teaching skills* acted differentially.



**Figure 7.6: Differential Item Functioning: Comparison of aspect scores:  
Teaching contexts**

**Table 7.8: Aspects of Teaching commented upon more readily by supervisors of primary and secondary teachers**

Primary Teachers	Secondary Teachers
<p><b>Knowledge of content and how students learn</b></p> <ul style="list-style-type: none"> <li>Breadth of knowledge</li> </ul> <p><b>Teaching skills</b></p> <p><b>Managing learning</b></p> <ul style="list-style-type: none"> <li>Management of lesson transitions</li> <li>Catering for individual differences</li> <li>Appropriate classroom environment</li> <li>Assessment and evaluation of learning</li> </ul> <p><b>Student management</b></p> <ul style="list-style-type: none"> <li>Use of positive reinforcement</li> </ul> <p><b>Preparation and planning</b></p> <ul style="list-style-type: none"> <li>Plan units of work</li> <li>Plan for individual needs</li> </ul> <p><b>Thinking about and improving on practice</b></p> <ul style="list-style-type: none"> <li>Reflecting on teaching</li> </ul> <p><b>Personal characteristics</b></p> <ul style="list-style-type: none"> <li>Confidence</li> </ul> <p>Professional relationships</p> <ul style="list-style-type: none"> <li>Relationship with parents &amp; community</li> </ul>	<ul style="list-style-type: none"> <li>Knowledge and understanding of content</li> <li>Content appropriate to students</li> <li>Knowledge of curriculum and syllabuses</li> </ul> <ul style="list-style-type: none"> <li>Management of time</li> <li>Use of resources</li> <li>Experience teaching a variety of classes</li> </ul> <ul style="list-style-type: none"> <li>Plan lessons</li> </ul> <ul style="list-style-type: none"> <li>Professionalism</li> <li>Confidence</li> <li>Maturity</li> </ul> <ul style="list-style-type: none"> <li>Works in a team</li> <li>School-wide involvement</li> <li>Implementation of policies</li> </ul>

#### Primary and secondary student teachers

Thirteen aspects of teaching functioned differentially across the primary student teacher and secondary student teacher subgroups. Of these, four were more readily commented upon by primary student teachers. They included *Breadth of knowledge*, *Catering for individual differences*, *Assessment and evaluation of learning* and *Reflecting on teaching*. These were also commented upon by all primary teachers.

Nine aspects of teaching were more readily commented upon by secondary student teachers. These were *Knowledge and understanding of content*, *Content appropriate to students*, *Plan*

*lessons, Professionalism, Confidence, Works in a team, Oral communication skills, Building on experience and Commitment.* With the exception of the last three aspects of teaching all others were also treated differentially by secondary supervisors in the previous analysis of overall results.

#### Primary and secondary beginning teachers

Nineteen aspects of teaching displayed Differential Item Functioning for the primary beginning teacher and secondary beginning teacher subgroups. Nine aspects of teaching were more readily identified by primary beginning teachers. These were *Appropriate classroom environment, Assessment and evaluation of learning, Use positive reinforcement, Plan units of work, Plan for individual needs, Relationships with parents and the community, Reflecting on learning, Organisation,* and *Accepts cooperating teacher's advice.* The first six of these were also identified by primary teachers in the analysis of all reports.

Ten aspects of teaching were identified by secondary beginning teachers. These were Knowledge of curriculum and syllabuses, Management of time, Use of resources, Experience teaching a variety of classes, Use of a variety of techniques, Plan lessons, Confidence, Maturity, School-wide involvement and Implementation of policies. The only aspect of teaching that was identified as not acting differentially with respect to all secondary teachers reports was Use a variety of techniques.

#### Comparison between groups

Correlation coefficients were calculated using the SPSS to determine the extent to which the standardised differences calculated for the primary and secondary student teacher, and primary and secondary beginning teacher subgroups replicated those for the overall primary and secondary groups. The results of this analysis are presented in Table 7.9.

A statistically significant correlation coefficient ( $p < 0.00$ ) was found between the standardised differences calculated for each of the student and beginning teacher subgroups and the overall primary and secondary group. The correlation between the standardised differences of the student and beginning teacher subgroups was low and not statistically significant. This result contrasts with that of the previous analysis of correlations between primary and secondary teacher groups, where there was a statistically significant correlation between the student and beginning primary teacher and student and beginning secondary teacher subgroups.

These results together with those of the other investigations into differences in the extent and form of comment of groups of supervising teachers are discussed in the following section.



**TABLE 7.9: Correlation coefficients standardised differences:  
Primary and secondary supervisor groups**

		PRIMARY/ SECONDARY	Student	Beginning
PRIMARY/ SECONDARY	Pearson Correlation	1	.695 **	.868 **
	Sig. (2-tailed)	.	.000	.000
	N	52	50	50
Student	Pearson Correlation	.695 **	1	.218
	Sig. (2-tailed)	.000	.	.137
	N	50	50	48
Beginning	Pearson Correlation	.868 **	.218	1
	Sig. (2-tailed)	.000	.137	.
	N	50	48	50

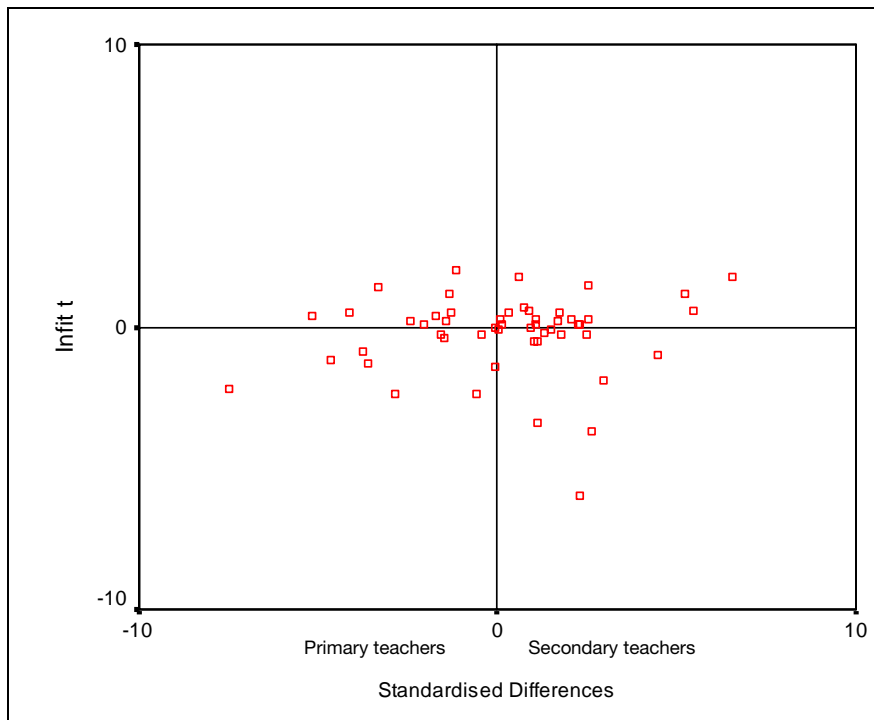
\*\* Correlation is significant at the 0.01 level (2-tailed).

#### The relationship between Item Misfit and Differential Item Functioning

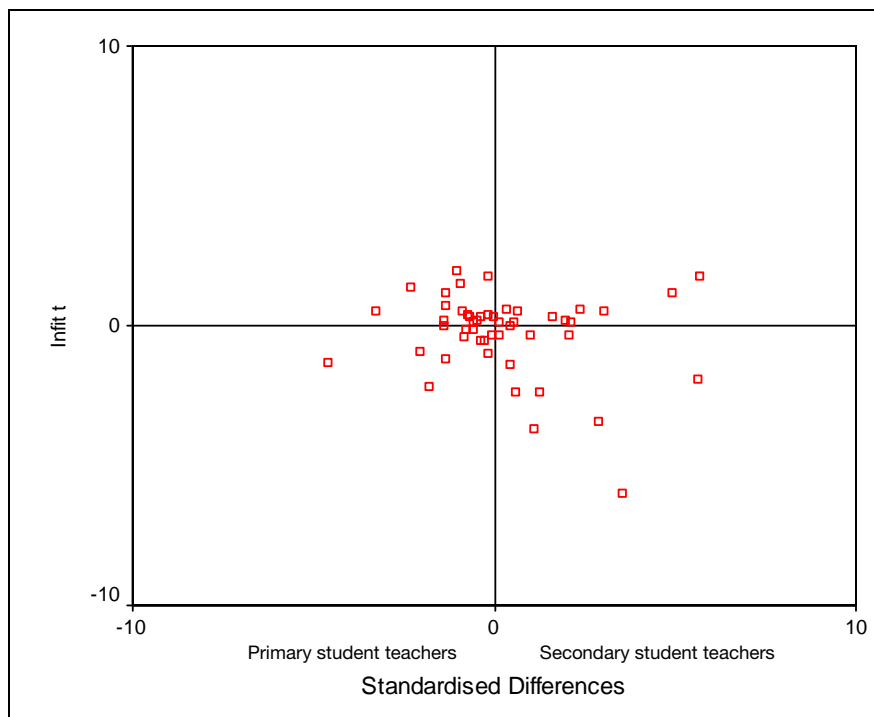
As with the investigation of differences amongst reports for students and beginning teachers, the relationship between item misfit and Differential Item Functioning between primary and secondary teacher reports was examined by plotting *infit t* against standardised differences for the primary and secondary groups (see Figure 7.7).

Compared with student and beginning teachers, the relationship between *infit t* scores and the standardised differences of the primary and secondary groups was non-systematic. The correlation between *infit t* and standardised differences for this group was close to '0' and insignificant. This suggests that factors such as differences in the reporting criteria and processes may affect the consistency of the reports.

To investigate possible influences of differences in reporting criteria further, *infit t* scores were plotted against standardised differences of the primary and secondary student teachers groups (Figure 7.8). These groups also have different guidelines for reporting (see Appendix 2). The relationship between item misfit (*infit t*) and standardised differences is non-systematic and non-significant, although some inferences are possible. The majority of aspects of teaching or items commented upon more readily by supervisors of primary student teachers show greater variation than that predicted by the model.



**Figure 7.7: Plot comparing infit  $t$  statistics with standardised differences: Primary - Secondary teachers**



**Figure 7.8: Plot comparing infit  $t$  statistics with standardised differences: Primary student teachers - Secondary student teachers**

Although some aspects of teaching reported on more readily by supervisors of secondary student teachers show greater variation than predicted, others show considerable less variation than predicted. Aspects of teaching showing less variation than predicted by the model include *Professionalism*, *Commitment* and *Working in a Team*. The implications of these findings are considered below.

### **Discussion**

The application of Rasch to the output of the NUD\*IST analysis significantly enhanced the type and range of investigations open to the researcher. The numeric values or interval scores developed for each report allowed comparisons to be made between the amount of comment made by supervisors of different groups of teachers with regard to their subject specialisation, their teaching context (primary or secondary) and their stage of development (student or beginning teachers).

The identification of a statistically significant relationship between the subject specialisation of the student and beginning teachers (see Table 7.5) and the number of aspects of teaching commented upon in the reports written by supervisors presents a potential issue for the application of generic forms of professional standards. Clearly, the sample sizes available in this study limited the extent of analysis of differences amongst reports grouped by subject specialisation. However, the results obtained flag the need to investigate the issue further. Clearly, generic standards must be capable of being applied to the assessment of all teachers regardless of their subject specialisation.

The finding of a statistically significant difference between the mean report scores of supervisors of student and beginning teachers was not surprising. The finding confirms the observations made while undertaking the initial coding of the reports. There are a number of possible reasons for such differences. These include difference in the advice provided to supervisors of student and beginning teachers. They may also represent more limited opportunities for student teachers to experience and demonstrate teaching practices across the breadth of aspects of teaching identified in the reports, or they may be a reflection of the professional maturity and experience of those writing the reports. The responsibility for writing and approving certification reports on beginning teachers in government schools in NSW is vested in the school principal but may be delegated to other school executives. There are no such limitations on the allocation of responsibility for supervision of student teachers. Those charged with supervising student teachers are drawn from the full-range of experience of teachers in non-executive positions.

The finding of no statistically significant difference in the mean report scores of primary and secondary supervisors represents a finding within a relatively untested aspect of supervisory reporting practices. While it provides some reassurance about the relative capacities of primary and secondary supervisors to comment on student and beginning teachers on the basis of relatively generic criteria, it does not support any conclusions to be drawn about the depth of comment, that is, the level of analysis of practice. Nor does the finding support conclusions about the potential extent of comment. Immediate questions for future research that arise from this finding are “would supervising teachers report on a greater range of aspects of teaching if for example, the forms were longer?” and “would supervising teachers more critically analyse teaching practice if there was a requirement to analyse and report on teaching built into a reporting pro forma?”

The second area of investigation in this section relates to potential differences in the form of comment between the primary and secondary, and student and beginning teacher groups. Differential Item Functioning analysis using the *QUEST Compare* function found no statistically significant difference in pattern of reporting against aspects of teaching by supervisors of the Mathematics, Science and Technology teachers and PDHPE teachers. Although this result should be treated with caution because of the limited sample size, it affirms views about the validity of using generic standards to assess and report on teachers from a range of teaching specialisations.

However, there was a revealing picture of differences between the aspects of teaching more readily commented on by one or other of the student-beginning teacher and primary-secondary groups studied. Surprisingly, despite their more limited comment overall and, generally more limited opportunity for observation over an extended period of time, supervisors of student teachers reported more readily on more aspects of teaching than did supervisors of beginning teachers (see Figure 7.4 and Table 7.6). In general, supervisors of student teachers commented more readily on aspects of teaching in the areas of *Teaching skills*, *Managing learning*, *Student management* and *Thinking about and improving on practice*. Supervisors of beginning teachers commented more readily upon aspects of teaching from the areas of *Personal characteristics* and *Professional relationships*.

This is not to say that supervisors of student or beginning teachers did not comment on a specific aspect of teaching, but that one or other group of supervisors commented to a significantly greater extent. An examination of correlation coefficients provides an added level of confidence in conclusions to be drawn about the comments of supervisors of student and beginning teachers. Statistically significant correlations were found between the standardised differences of the student and beginning teacher reports overall and the standardised

differences calculated for the primary student and primary beginning teacher reports, as well as the secondary student and secondary beginning teacher reports.

The differences in the form of reports prepared by supervisors of student and secondary teachers are indicative of differences in the extent of in-class observation undertaken by their supervisors. Such differences should not be surprising. There is a range of possible reasons why supervisors of student teachers conduct more in-class observation than supervisors of beginning teachers. Not the least being that the supervising teacher is released from their teaching duties by the student teacher to undertake the in-class supervision and observation. Supervision of beginning teachers is, generally, an added responsibility for school executives undertaken at infrequent intervals.

There is also a greater need for close in-class supervision of student teachers because of the relatively untested nature of their capacity to teach and to maintain order in the classroom. Further, the supervisors of student teachers retain the legal responsibility for what happens in the student teachers' classroom. Beginning teachers, however, are expected to be able to teach independently as they have the professional responsibility for student learning as well as a legal 'duty-of-care' for their students.

Notwithstanding these possible reasons, the fact that supervisors are potentially determining the competence of beginning teachers without adequate reference to classroom practices is a concern. These findings are consistent with those of Thompson (1999) who found that supervisors of beginning teachers base judgements on competence on personal views about what constitutes competence, rather than on some uniform and systematic determination of competence.

Although there was no statistically significant difference between the mean report scores for the primary and secondary report groups, there were statistically significant differences in the form of comment (see Figure 7.6 and Table 7.8). With the exception of aspects of teaching in the areas of *Professional characteristics* and *Professional relationships*, which were commented upon more readily by secondary supervisors, there were no strong trends of preferential response in the other areas of teaching.

Secondary supervisors were concerned with *Knowledge and understanding of content* whereas primary supervisors were interested in the *Breadth of knowledge*. In relation to managing learning, secondary supervisors reported more readily on *Management of time*, *Use of resources* and *Experience teaching a variety of classes*. Primary supervisors reported more readily on *Management of lesson transitions*, *Catering for individual differences*, *Appropriate classroom environment* and *Assessment and evaluation of learning*.

Secondary supervisors were more likely to comment on *Plan lessons*, while primary supervisors were more likely to comment upon *Plan units of work* and *Plan for individual needs*. Notably while secondary teachers commented more readily on relationships with the supervising teacher and peers, that is, within school relationships, primary supervisors commented more readily on *Relationships with parents and the community*.

The differences in the reports for student and beginning teachers appear to reflect differences in the working relationships between supervisor and teacher or constraints within which the different groups of supervisors work. However, the differences between primary and secondary teachers' reports appear to reflect differences in their teaching context.

A consistent pattern of differential item functioning was also found across primary and secondary teacher reports overall and those of the student and beginning teacher subgroups. Statistically significant correlations were found between standardised differences for all primary and secondary teacher reports and for reports on primary and secondary student teachers and for primary and secondary beginning teachers.

There was not a statistically significant correlation, however, between the standardised differences of the reports on primary student and beginning and reports on secondary primary and secondary teachers. This result contrasted with the statistically significant correlation found between the primary student and beginning teacher, and secondary student and beginning teacher subgroups.

The presence and absence of statistically significant correlations between the standardised differences of these groups confirms the results of the Univariate analysis performed to compare the mean report scores of the groups. The potential for a Type I error arising from the Univariate analysis as a consequence of failure to meet the assumptions of the Univariate model (Levene's test of homogeneity of variance,  $p > 0.05$ ) appears therefore not to be an issue.

Subsequent comparison of the Differential Item Functioning and item misfit identified a strong relationship between item infit  $t$  scores and the standardised differences of the student and beginning teacher groups. This relationship suggests the differences (Differential Item Functioning) between the reports written for student and beginning teacher groups is systematic and related to the overall misfit of the items (see Figure 7.5).

The graph shows when the infit  $t$  is positive, the standardised differences are negative and vice versa. This means that for the majority of those aspects of teaching more readily commented on by supervisors of student teachers (negative standardised differences), the misfit is greater than predicted by the model (positive infit  $t$ ) and for the majority of aspects of teaching more

readily commented upon by supervisors of beginning teachers (positive standardised differences) the misfit is less than that predicted by the model (negative infit  $t$ ).

There is less misfit and therefore less variation in those areas of teaching beginning teachers respond more readily to, such as *Professional characteristics* and *Professional relationships*. It can, therefore, be concluded that supervisors' of beginning teachers respond more consistently to the aspects of teaching identified in these areas.

Alternatively, there is more misfit and therefore more variation associated with aspects of teaching more readily commented upon by supervisors of student teachers, that is, in areas of *Teaching skills*, *Managing learning* and *Student management*. This suggests that although supervisors of student teachers comment more readily than supervisors of beginning teachers in these areas, they do so less consistently.

The absence of a similar relationship between item infit  $t$  scores and standardised differences for the primary and secondary reports indicates that the differences in supervisors' comments in relation to these two groups are unpredictable and more erratic. The subsequent analysis undertaken in relation to variation amongst primary student teacher and secondary student teacher reports also found no systematic pattern of variation.

There are two possible reasons for the strength of the relationship between misfit and standardised differences for the student and beginning teacher groups. The first lies in the different reporting guidelines provided to supervisors of student and beginning teachers (See Appendix 2). However, although different reporting guidelines were also provided to primary student teachers and secondary student teachers, there were no systematic differences in the relationship between item misfit and Differential Item Functioning.

The second and more plausible reason lies in the NSW Department of Education and Training's process for compiling and approving the reports on beginning teachers. All reports are subject to an approval process by District Superintendents. This process has the potential to standardise the form and content of reports. Although the potential impact of differences in the guidelines and processes for approving reports were largely ignored in the design of Study 2, the Rasch analysis has been sensitive to them.

The analysis of the relationship between infit  $t$  and standardised differences provides a methodology for investigating potential differences in the variation of responses amongst different groups of subjects. This form of analysis represents an extension of the applications of Rasch statistics (Bond, 2005, pers. comm.). It reinforces the capability of the Rasch model to measure subtle underlying differences and patterns in data.

## CONCLUSIONS

The application of Rasch analysis to the NUD\*IST 'coding table' data has provided a quantitative dimension to the qualitative analysis of the reports on student and beginning teachers undertaken in Chapter 6. In particular, the Rasch item and case reliability of estimates data (0.98 and 0.71) indicate a valid separation of aspect scores and report scores along a continuum. They also provide additional measures to assist in judging the 'trustworthiness' of the analysis. Aspect scores and report scores derived by the Rasch analysis provide the basis for the investigations undertaken in the chapter.

Clearly, there is statistically significant variation in the extent to which supervisors have written about the various aspects of teaching identified in this study (see Figure 7.2). They more readily comment on aspects of teaching related to *Professional characteristics* than to those related to *Knowledge of content and how students learn*. Similarly, they commented less on *Teaching skills* than on *Student management, Preparation and planning, Professional characteristics* and *Professional relationships*.

Subsequent analysis of patterns in the extent and form of reporting by different groups of supervisors was instructive. Within the reports sampled, the amount of comments provided by secondary supervisors in different subject specialisations was significantly different for the Ms and Pd groups. However, Differential Item Functioning analysis did not identify any elements of the standards where the extent of differential functioning across these groups was statistically significant.

Reports prepared by supervisors of beginning teachers provide significantly more commentary than those prepared for student teachers. However, while they write more, they comment less on aspects of teaching related to *Teaching skills* and the *Managing learning* than do supervisors of student teachers.

Reports on primary and secondary teachers do not differ in the extent of comment, but their focus is different. Primary supervisors are more concerned with *Breadth of knowledge, Plan units of work, Plan for individual needs Catering for individual differences, Appropriate classroom environment, Assessment and evaluation of learning* and *Relationships with parents and the community*.

While secondary supervisors were more likely to comment on aspects of teaching relating to *Professional characteristics* and *Professional relationship* they also commented more readily on aspects of teaching in other areas. These were *Knowledge of content and how students learn*,



*Plan lessons, Management of time, Use of resources, and Experience teaching a variety of classes.*

For groups determined by teaching context or stage of development, differential functioning analysis identified significant differences in the pattern of comment. However, the extent of Differential Item Functioning amongst these groups was consistent with that identified amongst the discrete subgroups of student and beginning teachers, and primary and secondary teachers.

Comparisons between infit  $t$  and standardised difference statistics revealed a statistically significant relationship between item misfit and standardised differences for the student and beginning teacher groups (Figure 7.5). This suggests that the differences between these groups were both statistically significant and systematic. Given that there was no observable systematic pattern in the variation in the comments of either of the primary and secondary teachers groups (Figure 7.7) or the primary student teacher and secondary student teacher groups (Figure 7.8), the most likely cause of the differences in the consistency of student and beginning teacher reports is the processes established by the Department of Education and Training for the approval of principals' reports. It seems most likely that these processes have the potential to standardise the form and content of the report.

The results of the infit  $t$  and standardised difference comparison for student and beginning teachers confirm and explain the lack of homogeneity of variance between these groups identified in the ANOVA analysis by the Levene statistic.

The results of the analyses in this chapter flag a number of issues for policy makers. Clearly, judgements of teaching competence that pay little heed to the effectiveness of teachers' classroom practice are questionable. Consequently, policy makers need to ensure adequate consideration of classroom practice occurs during the assessment of competence, and that this aspect of teachers' work is a focus of any determination of competence. Professional standards such as those used in Study 1 have a clear role in this area for their potential to articulate the breadth of professional expectations of teachers.

The potential for standardisation of the content of reports arising from the Department of Education and Training's processes for approval of reports is also an issue. These processes focus on addressing administrative imperatives to ensure the production of a report of a certain kind, rather than professional imperatives to report accurately on the knowledge skills and attributes of the teachers being assessed.

The results also raise a number of questions for future research. Differences in the extent to which supervisors comment on specific aspects of teaching and differences in the way groups of supervisors comment point towards the need for further research into identifying the causes of such difference. While a number of structural and contextual reasons have been advanced above, these do not explain adequately why individual supervisors choose or choose not to comment on specific aspects of teaching. Although answers to such questions are beyond this study, they should be investigated in the future through a carefully designed study that may include further survey work linked to a series of focused interviews.

## CHAPTER 8

### CONCLUSIONS

It ain't so much the things we don't know that get us into trouble.

It's the things we know just ain't so.

(Artemus Ward cited in Stedman, 1996, p.1)

### INTRODUCTION

This thesis was designed to investigate two broad research themes related to the development and application of professional teaching standards. Study 1 involved an investigation of teachers' perceptions of a set of theoretical standards from the perspectives of *achievability*, *preparedness* and *development priority*. The homogeneity of teachers' perceptions was also investigated. Study 2 entailed a description of student and beginning teachers' practices derived from reports written by supervising teachers. The homogeneity of the teaching practices described in the reports on different groups of student and beginning teachers was also analysed.

The outcomes of these studies raise a number of implications for the development and application of professional teaching standards and for the certification of teaching competence. They also provide a basis for comparing teachers' descriptions of practice with a set of theoretical standards.

Further, the methodology of the study demonstrated the potential for future research of the application of quantitative research methodologies (Rasch) to the outcomes of qualitative (NUD\*IST) studies. The application of Rasch measurement theory to the outcomes of NUD\*IST studies expands the range of Rasch applications and significantly enhances the potential outcomes of such studies, by allowing a range of comparative analyses.

This Chapter is structured around four sections. The first comprises a discussion of the constraints and limitations which provide some important caveats to interpreting the findings of the research. The second sets out and discusses the main results and findings of the thesis. The third sets out directions for future research. The fourth offers some concluding comments

## CONSTRAINTS AND LIMITATIONS ON THE RESEARCH

There were a number of constraints and limitations on the possible outcomes of this investigation. The design itself imposed two constraints.

The first constraint being that, at the time the research was undertaken, no professional teaching standards in NSW were endorsed for implementation by the teaching profession or employers of teachers. Any examination of professional teaching standards or teachers' perceptions of professional standards in NSW needed, therefore, to be framed against theoretically derived standards that were unfamiliar to teachers.

The theoretical standards used in this study were developed by a small group of senior educational bureaucrats. As a consequence, their development did not have the benefit of the advice of practising teachers arising from the collaborative and consultative processes, characteristic of many of the examples of standards discussed in Chapters 1 and 2.

For that reason conclusions about teachers' perceptions of specific elements of the theoretical standards used in this study, may need to be moderated by teachers' judgements about their applicability to the New South Wales' teaching context. For example, any elements of the standards judged by teachers in New South Wales to have little relevance or applicability to teaching would have a low *development-priority*.

Second, the use of supervisors' reports on student and beginning teachers as descriptors of teaching practices was also a constraint. Despite the fact that such reports contain authentic descriptions of teaching practice, they represent observations by a third party rather than direct observation of teachers and their practice by the researcher. This realisation constrained the analysis of the reports. It was clear early in the analysis that the reports were mediated by four factors:

- the practices, that is, the knowledge, understandings, skills, and attributes of the student and beginning teachers
- the assessment criteria and form of report provided to the supervising teachers
- the processes for development and approval of the reports
- the professional values, interests and experience of the supervising teachers.

The processes for development of the reports differ across groups of supervisors. For example, some supervisors of beginning teachers have only limited opportunity to observe the

teaching within the classroom, because of time limitations imposed by other responsibilities or structural issues such as conflicting timetables.

The influence of professional values, interests and experience of the supervising teacher was identified by Thompson (1999) as being significant in his study of the assessment practices of principals. Principals were found to use a range of criteria arising from their own value systems to determine professional competence.

What was also apparent was that there were many practices of the student and beginning teachers being assessed that were 'not reported.' The absence of comments on particular aspects of the student or beginning teacher's practice could not be assumed to mean that the student or beginning teacher did not demonstrate that knowledge, understanding, skill, capacity or attribute. The reports could be assumed to represent, only, a proxy for direct observation of the teaching practice of student and beginning teachers.

The analysis of a relatively large number of reports overcame this constraint in part. The attainment of data redundancy during the analysis indicated identification of the full range of competences expressed in the reports.

There were also limitations on the potential outcomes of both studies as a consequence of size of the samples investigated. While the sample sizes used were sufficient for the major purpose of each study, the potential to disaggregate the data into smaller subsets was limited. For example, although the number of reports analysed in Study 2 was sufficient to achieve data redundancy, there were too few reports in subgroups based on subject specialisation to investigate this issue to the depth that it merits.

Regardless of these constraints and limitations a number of significant results and findings arise from the research.

## **DISCUSSION OF FINDINGS**

The findings of the research are discussed under three headings. These are:

- Teachers' perceptions of the theoretical professional teaching standards;
- Supervisors' documentation of student and beginning teachers' practice; and
- Comparing teachers' perceptions with practice.

### **Teachers' perceptions of the theoretical professional teaching standards**

Research questions 1 and 2 provided a focus for the investigation of teachers' perceptions of the theoretical standards presented in Chapter 2. The investigation of these questions and their outcomes were the substance of Chapters 4 and 5. A number of conclusions are evident from the discussion and presentations of findings relating to these investigations.

The first is a consequence of the methodology. There appears to be considerable merit in evaluating professional standards both as theoretical and statistical constructs. In this study, Rasch modeling of teachers' perceptions of the standards provided a range of statistics for determining the reliability and validity of the overall standards construct and individual elements of the standards. Statistical misfit of elements of the standards is an indicator that the elements may be inconsistent with the underlying theoretical construct. Further, the investigation of a range of perceptions enabled triangulation of results from the Rasch analyses to confirm elements of the standards inconsistent with the theoretical construct.

For example, element 7.4: *Enhance the professional status of teachers within the community* which did not fit any of the statistical constructs determined from teachers' perceptions of *achievability*, *preparedness* and *development-priority* appears also to be inconsistent with the theoretical construct. There are two possible reasons for this lack of fit. On the one hand, teachers may believe that acting ethically and demonstrating the highest standards of personal behaviour (see appendix 2) will have little influence over their status and standing in the community. On the other, they may see this element of the standards as not being relevant to beginning teachers.

Moreover, the factor analysis of teachers' *achievability* rankings identified a statistically valid alternative framework for organising the standards. The result confirms that the articulation of professional teaching standards is a complex field and that elements of the standards can be grouped under a range of categories and still be useful and viable. However, factor analysis of teachers' perceptions of standards may provide a methodology for developing or evaluating the organising frameworks of professional standards.

The second conclusion arises from the finding that teachers' perceptions of the elements of the standards are variable. There is considerable variation between teachers' perceptions of the *achievability*, *preparedness* and *development-priority* of individual elements of the standards. Perceptions of *preparedness* were significantly lower than perceptions of *achievability* or *development-priority*. This in itself is significant. It suggests, in the context of this set of standards, that teachers are not confident that current programs of initial teacher education adequately prepare young people for teaching, at least. However, this broad finding is

consistent with feedback from the consultations of the Ramsey Review of Teacher Education in NSW (Ramsey, 2000).

Overall, teachers' *achievability* and *preparedness* perceptions were strongly correlated. Their *achievability* and *development-priority* perceptions were correlated to a lesser extent. It could be expected that the greatest *development-priority* would be assigned to those elements of the standards for which beginning teachers were least prepared. Such an inverse relationship between *preparedness* and *development-priority* could not be sustained with the data collected.

These findings differ from those of Dickson (2000) who investigated soccer officials' perceptions of 'importance,' 'preparedness' and 'improvement-priority' in relation to a set of competences for soccer referees. A relationship between the perspectives such as that identified by Dickson, 'importance' - 'preparedness' = 'improvement-priority,' was not apparent between the perspectives of *achievability*, *preparedness* and *development-priority* in this study.

There are several possible reasons for the absence of a similar relationship. First, the elements of the standards are not of equal complexity and, consequently, there is substantial variation in teachers' perceptions of them. For example, element 5.1: *Establish classroom management strategies that support student learning* implies the need to apply more complex knowledge and skills than does element 2.4: *Maintain the currency of their content knowledge*.

Second, the more extensive training of teachers and greater diversity of teaching contexts and experiences means that teachers bring a greater range of perspectives including preconceived views to their judgements of the elements of the standards than do their soccer counterparts. Consequently, their perceptions may be influenced or biased by their own training and experiences.

The third conclusion possible from the analyses concerns teachers' perceptions of particular domains and elements of the standards. Statistically significant differences were found amongst teachers perceptions of elements of the standards in terms of their *preparedness* and *development-priority*. Beginning teachers were seen to be less prepared for elements of the standards in domain 7. *Leadership in communities of learning* than they were for elements in domain 2. *Knowledge and understanding of what is taught and the disciplines upon which teaching is based* and domain 5. *Managing safe, secure and productive learning environments*. Elements in domain 7 also had a lower *development-priority* than elements in domains 1. *Commitment to students and their development*; 3. *Expert in the 'art and science' of teaching*; 4. *Assessing and reporting the learning outcomes of students*; and 5. *Managing safe, secure and productive learning environments*. Similarly, elements in domain 2. *Knowledge and*

*understanding of what is taught and the disciplines upon which teaching is based* were judged to have a lower development priority than elements in domains 3 and 5.

The low rankings afforded to elements in domain 7 suggest that teachers surveyed did not see leadership as being relevant to beginning teachers. The question therefore arises at what career stage is leadership development relevant? Low *development-priority* rankings afforded to elements in domain 2 suggest that teachers do see further development of subject content knowledge beyond that provided in initial or pre-service preparation as being necessary.

The fourth conclusion arising from these investigations concerns differences amongst the perceptions of groups of teachers. More generally, heterogeneity of teachers' perceptions of standards identified, both in the emphasis attributed to specific areas of practice and the differences amongst the perceptions of different groups of teachers suggests the need for policy makers to ensure that the processes for developing standards recognise the diversity of perceptions and views. While on the one hand it is important to reach agreement about the content and structure of the standards, it is just as important to ensure that all sectors of the profession contribute to this process.

Factors, such as age, teaching experience, supervisory and mentoring responsibilities and position in school, effect teachers' perceptions of elements of the standards. No statistically significant differences were found between the perceptions of primary and secondary teachers.

Significantly, those teachers commonly expected to accept responsibility for supervising beginning teachers, are less confident of beginning teachers' capacity to meet the standards than their younger less experienced or older more experienced colleagues. For example, head teachers, assistant principals and other middle managers assigned significantly lower *achievability* ratings to the standards than school principals and lower *preparedness* ratings than classroom teachers. Similar results were found for teachers aged between 30 and 40 years, or with 6 or more years teaching experience.

This may be a reflection of more realistic perceptions of student and beginning teachers' capacity tempered by supervisory experiences. There are two potential implications of the differences in perceptions. The first is the critical need to involve teachers at all levels of the profession, especially middle managers, in the processes of developing standards. The second implication is the importance of educating teachers with supervisory responsibility in strategies that support beginning teachers to achieve the standards.

Three elements of the standards were identified where there was systematic variation in the *preparedness* and *development-priority* perceptions of groups of teachers. These elements



were element 2.1, 7.1 and 7.2. While the variation in relation to element 7.2: *Demonstrate educational leadership* was expected, given the range of views about the relevance of leadership to beginning teachers, the divergent views about element 2.1 *Demonstrate their knowledge, skills, understanding and values of the subject(s) they teach* and element 7.1: *Seek to create learning communities* were not.

Whether the less positive perceptions of older and more experienced teachers than their younger less experienced colleagues in relation to 2.1 reflect reality or perceptions about the efficacy of current teacher preparation programs is not clear. However, regardless of whether it is perception or reality, more needs to be done to affirm the quality of current subject content preparation. The variation in perceptions of element 7.1 needs also to be addressed so that all teachers see the value in working collaboratively as part of a team to further the education of their students.

There is a fourth conclusion, although it is not entirely self-evident from these results. Teachers' perceptions of standards appear to be influenced by their own changing experiences, roles and circumstances, and professional teaching standards need to be open to review and revision in order to respond to changes in teachers' roles and in the contexts in which they work.

### **Supervisors' documentation of student and beginning teachers' practice**

This section is concerned with findings of the investigations arising from research questions 3 and 4. NUD\*IST analysis of supervisors' reports on student and beginning teachers (Study 2) identified fifty-four aspects of teaching practice. These aspects were arranged by the researcher into eight areas of teaching within four themes. This analysis has specific relevance to the articulation of professional teaching standards as it identified a range of practices described by teachers.

In general, the aspects of teaching identified within the reports are described in behavioural terms. Their primary focus is describing how student and beginning teachers are able to apply their knowledge, skills, and capacities. However, despite the widespread practices identified, the analysis provided only limited insight into the complexity of the teaching practices identified and was inadequate as a stimulus for in-depth description of the practices associated with each aspect of teaching. For example, while many reports referred to student and beginning teachers' capacity to *cater for individual differences* they did not articulate how they achieved this objective.

Although the form of the report was raised earlier as a possible limitation to the description of teaching practices, there are other factors and issues that may impinge on the quality or depth of the analysis. These include:

- the institutionalisation of impressionistic rather than evidence-based reporting practices. Supervisors are not expected or required to comment in terms of specific evidence or practices, rather they tend to follow existing reporting traditions by providing broad general comments.
- giving priority in reporting to fulfilling administrative requirements rather than to meeting their professional obligation to provide the student or beginning teacher with an accurate and comprehensive account of their teaching practices. The existence of almost identical reports, amongst the reports on beginning teachers sampled, suggests that some supervisors use a standard format for reporting to which they make only minor adjustments. In these cases the administrative requirement to provide a report overrides the supervisor's professional obligation to the student and beginning teachers.

A clear consequence of this administrative imperative is the institutionalisation of the 'form' of the reports written for the certification of beginning teachers. Patently, the main purpose of the report is to justify the decision to recommend or not to recommend the award of a Teaching Certificate. In these circumstances, detailed documentation is only important when a decision is taken not to award a Teaching Certificate.

- lack of supervisor experience or expertise in analysing and commenting on teaching practice. In order to recognise and describe in-depth the teaching practices identified, supervisors need to have the sufficient experience, knowledge and understanding, particularly, of any conceptual basis for the practice. The fact that principals were found in Thompson's (1999) study to hold seven different conceptions of beginning teacher competence suggests that these conceptions were not well founded in theory or knowledge of practice.
- the absence of a common language for reporting on teaching practice. In the absence of agreed professional teaching standards, supervisors are obliged to revert to reporting in terms of their own experiences and understandings of what constitutes effective practice for student and beginning teachers.
- structural issues related to the opportunity to observe practice. Supervisors of student teachers are released from teaching by the student teacher when he or she is teaching and are therefore able to observe almost all lessons taught. Supervisors of beginning teachers are required to schedule time to observe teaching in the classroom. For some supervisors this may not be possible because of conflicting timetables. For others, it may simply be not

a priority. The implications of insufficient observation of teaching are discussed later in this section.

The second part of the investigation of supervisors' reports on student and beginning teachers report involved the application of measurement theory to the outcomes of the NUD\*IST analysis. The use of Rasch modeling to undertake such analysis represents an extension of the applications of Rasch (Bond, 2005, pers. comm.). The ability to apply measurement theory to the outcomes of a NUD\*IST analysis has the potential to enhance significantly the scope and veracity of outcomes such qualitative investigations.

In this study, Rasch was used to generate aspect scores and report scores distributed along an interval scale. The existence of these scores enabled empirical analysis of differences in the amount of comment on specific aspects of teaching and differences in the amount and form of comment by different groups of supervisors. Additionally, the Rasch validity and reliability measures provided an empirical basis for confirming the trustworthiness of the initial NUD\*IST analysis.

In addition to the lack of in-depth analysis of teaching practice within the reports, the Rasch analysis identified a second major concern, that is, the apparent determination of the competence of beginning teachers without sufficient reference to classroom practices. This was apparent from:

- differences in the amount of comment on specific aspects of teaching practice. The amount of comment in the reports overall, on aspects of teaching in the area of *Teaching skills* was significantly less than for aspects of teaching in the areas of *Preparation and planning*, *Personal Characteristics* and *Professional Relationships*.
- the tendency of supervisors of student and beginning teachers to report differentially on specific aspects of teaching. Supervisors of beginning teachers commented less readily upon those areas of teaching that require classroom observation than did supervisors of student teachers. For example, they commented less frequently on aspects of teaching concerned with *Teaching skills* and *Managing learning*. Supervisors of beginning teachers reported predominantly on aspects of teaching within those areas of teaching that could be assessed without classroom observation: *Preparation and planning*, *Personal characteristics* and *Professional relationships*.

This is a significant issue for policymakers and also for those with responsibility for ensuring the reliability and validity of judgements of competence against professional teaching standards. Judgements of competence that are made without adequate reference to the capacity of teachers to manage and teach students effectively in the classroom are problematic.

These results confirm further the institutionalisation of administrative priorities over the professional responsibility of supervisors when undertaking the assessment of student and beginning teachers. Supervisors have a responsibility not only to the student or beginning teacher, but also to the profession to assess and document the evidence of the student or beginning teacher's competence adequately to ensure the validity and reliability of the judgement. Decisions about the readiness of student teachers to teach, or the competence of beginning teachers to remain in the profession, made on the basis of insufficient observation of practice run the risk of endorsing or certifying ineffective or incompetent teachers.

Patently, people whose ability to teach is questionable are able to remain in teaching because their teaching has not been assessed with reference to classroom practices. This is a sign of a profession poorly positioned to take responsibility for the judgements about who should or who should not be allowed to teach.

The sensitivity of the Rasch analysis to identify differences in how supervisors report was further exemplified through the comparison between item misfit and standardised differences. This analysis identified a systematic relationship between item misfit and Differential Item Functioning.

There is more variation than predicted on those aspects of teaching in which supervisors of student teachers report and less variation than for the aspects of teaching in which supervisors of beginning teachers predominantly report. This consistency with which supervisors of beginning teachers report is most likely a consequence of the processes implemented by the Department of Education and Training for the approval of such reports. While these processes are intended to ensure the quality of the reports their possible consequences are standardisation of comments within the reports.

### **Comparing teachers' perceptions with practice**

The theme of the title of the thesis, 'a comparative analysis of teachers' perceptions of professional teaching standards and teaching practices' is explored in this subsection. A comparison between the theoretical standards used in this thesis and the outcomes of the analysis of teachers' practice derived from supervisors' reports is possible at two levels. The first is through a comparison of organising frameworks and the contents of each. The second is a comparison of the model of competence underpinning each of the frameworks.

### **Comparison of elements and frameworks**

To allow a comparison between the frameworks for the theoretical standards and the analysis of teaching practices the domains of the theoretical standards from Study 1 were mapped against the four themes and eight areas of teaching identified in Study 2 (see Table 8.1). This mapping shows that there is not a one-to-one mapping of one schema onto the other.

**Table 8.1: Comparison between the domains of the theoretical standards framework investigated in Study 1 and the areas of teaching identified in Study 2**

<b>Domains of Theoretical Standards Study 1</b>	<b>Areas of Teaching Study 2</b>
<ol style="list-style-type: none"> <li>1. Commitment to students and their development</li> <li>2. Knowledge and understanding of what is taught and the disciplines upon which teaching is based</li> <li>3. Expert in the 'art and science' of teaching</li> <li>4. Assessing and reporting the learning outcomes of students</li> <li>5. Managing safe, secure and productive learning environments</li> <li>6. Reflecting and continuously enhancing their own learning</li> <li>7. Leadership in learning communities</li> </ol>	<p><b><i>Foundation knowledge and skills</i></b></p> <ul style="list-style-type: none"> <li>• Knowledge of content and how students learn</li> <li>• Teaching skills</li> </ul> <p><b><i>Classroom and student management</i></b></p> <ul style="list-style-type: none"> <li>• Managing learning</li> <li>• Student management</li> </ul> <p><b><i>The teaching and learning cycle</i></b></p> <ul style="list-style-type: none"> <li>• Preparation and planning</li> <li>• Thinking about and improving on practice</li> </ul> <p><b><i>Professional characteristics and relationships</i></b></p> <ul style="list-style-type: none"> <li>• Personal characteristics</li> <li>• Professional relationships</li> </ul>

Three areas of teaching practice, *Teaching skills*, *Preparation and planning*, and *Personal characteristics* did not appear to have an equivalent amongst the domains of the theoretical standards. One domain, *1: Commitment to students and their development* did not appear to have an equivalent in description of teaching practice.

Although not presented, a similar mapping of individual aspects of teaching onto the elements of the standards also revealed an uneven fit. Some elements of the standards had no

equivalent amongst the aspects of teaching, and vice versa. For other elements of the standards there was a one-to-many relationship with the aspects of teaching.

On the one hand, the theoretical standards could be said to be deficient to the extent that they do not include aspects of teaching that have 'practical' relevance to teachers. The standards need to include basic teaching skills such as "questioning techniques" and "communication skills" as well as knowledge and skills in planning and preparation. Teachers appear also to place a high value on specific professional characteristics, such as enthusiasm, commitment, and initiative. In some cases the absence of such characteristics was cited as contributing to failure in the classroom.

On the other hand, the lack of a theoretical perspective on how students learn within the descriptions of practice is a major omission from the descriptions of teaching practice. The paucity of comment in supervisors' reports about the application of learning theory or knowledge of student development supports the need for any standards developed for teachers in New South Wales to define better the scope of knowledge and skills requirements for teachers.

While standards should have practical relevance to the day-to-day work of teachers, they should also require teachers to demonstrate theoretical knowledge. It has been argued that it is the absence of such an agreed body of professional knowledge and skills that has prevented teaching being recognised as a profession.

The simple truth is that professional educators have not constituted a canon of essential knowledge or skills analogous to that which exists in law or medicine.

(Hess, 2001 cited in ; Zeichner, 2003, p.503).

One issue deserving of specific comment in respect to the so-called theory-practice conundrum concerns the apparent contradiction between teachers' theoretical understanding and their reporting of practice in relation to teachers' capacity to cater for individual differences. Element 3.5: *Plan for individual student's learning* had the lowest *achievability* ranking of all of the elements of the standards. However, *Catering for individual differences* was ranked sixth out of 54 in terms of the amount of comment from supervisors. Despite the importance supervisors appeared to place on this aspect of teaching in the reports, there was no articulation in the reports of what this meant in practice.

***Comparison of conceptual understanding***

The second area for comparison of the two frameworks is concerned with the model of competence underpinning the frameworks. Four models of competence were discussed in Chapter 2, namely, the Behaviourist model, the Generic model, the Integrated model, and the Cognitive model.

As noted in Chapter 2, the development of the theoretical standards used in this study assumed an integrated model of competence which would bring together perspectives about teaching task, the attributes that the teacher brings to the task, and the contexts in which the teacher demonstrates competence. While this understanding is not explicit from the theoretical standards, the standards assume that any judgement of competence would consider the appropriateness of the knowledge, skills, and capacities teachers bring to a task within the relevant context.

The guidelines provided to supervisors of beginning teachers present a more explicit behavioural focus. Part (B) of each of the student teacher reports presents a traditional checklist. Part (C) which is the subject of this analysis does not require consideration of context, nor do the guidelines suggest the need to present an integrated view of interrelationship between attributes and tasks.

The criteria provided for supervisors of beginning teachers list a similar range of discrete skills, professional relationships and personal attributes as areas for possible comment. They do not suggest how supervisors should arrive at their judgement of competence.

Consequently, behaviourist comments such as “She has taught a variety of classes across all KLA<sub>FSIP71</sub>” and “YYY is punctual, well dressed and highly professional<sub>MBP404</sub>” are common throughout the reports. There is almost no acknowledgement within the reports of the context within which student and beginning teachers are working.

In the absence of any articulation of issues specific to the contexts in which student and beginning teachers work, reports will continue to focus narrowly on behaviourist descriptions of practice. Principals and supervisors of student and beginning teachers expressed concern throughout the Ramsey review that it was more difficult to demonstrate competence in some schools than others.

However, despite these concerns, supervisors do not report on how student and beginning teachers are able to address contextual issues, such as the capacity to address the learning needs of Aboriginal and Torres Strait Islander students. Such analyses would take the

reporting on student and beginning teachers to a new and possibly higher level than was evident in the reports analysed in this study.

In conclusion, the reports provided by supervisors indicate that there is a significant amount of work to be done before the profession is ready and able to work within the parameters of the integrated model of competence. While this thesis has provided insights into teachers' perceptions of standards and their readiness to work with them, it has also raised many questions that need to be answered if standards are to be developed and appropriately applied.

### **FUTURE DIRECTIONS**

In general, the thesis has identified two conflicting issues. There is limited knowledge and understanding amongst teachers about professional standards and models of competence. There is also a lack of research-based knowledge into issues relating to the development and application of standards. These findings are understandable, however, given that work on the implementation of professional standards, in NSW and elsewhere, is in its infancy.

The research undertaken in this thesis lays a foundation for further research in two ways. First, it points to the need for further research in relation to understanding the context within which professional teaching standards are being developed and applied. While the research undertaken identified a range of differences in teachers' perceptions of the theoretical standards and in the way supervisors report on student and beginning teachers, it did not investigate the possible reasons for these differences. Clearly, the scope and methodology of the thesis did not allow investigation of such questions as:

1. What knowledge, understandings, and skills do teachers bring to their perception of the standards?
2. Why do teachers perceive some elements of the standards to have greater or less *achievability, preparedness or development-priority* than other elements?
3. Why do perceptions of different groups of teachers differ?
4. Why do supervisors report on some aspects of teaching and not others?
5. Which aspects of teaching do supervisors value most in coming to judgements of teaching competence?



Further qualitative research through targeted interviews, focus group discussions, open-ended surveys and other techniques for garnering teachers' views on these questions is needed to address these questions.

Second, the successful application of Rasch to numeric data derived from a NUD\*IST analysis provides a precedent for future researchers to undertake similar analyses of such data. While NUD\*IST enables the analysis of text to support theory building, the Rasch analysis of coding table data supports analysis of differences in emphasis within the text, differences in emphasis amongst the subjects studied, and analysis of the variation of emphasis between groups. In addition, Rasch provides a range of empirically derived statistics to determine the reliability and validity of the NUD\*IST analysis, and hence for confirming the trustworthiness of the qualitative analysis.

The imperative to apply qualitative research methods to further investigate the questions above implies the need to adopt research models where there is an assumption of continuous cycle of qualitative research → quantitative research → qualitative research → quantitative research and so on. In this context, qualitative and quantitative research methods are not mutually exclusive but mutually supportive and complementary methodologies working together to build knowledge of the area under study.

### **CONCLUDING COMMENTS**

In the absence of broad agreement about what constitutes effective teaching practice, the articulation of professional teaching standards that have relevance to the work of all teachers is, in itself, not an easy task. The diffuse nature of responsibility for teachers and teaching makes their development all the harder. Nonetheless, attaining professional ownership and responsibility for the development and application of professional teaching standards remains an important and achievable goal.

The two studies that comprise this thesis have approached issues concerned with the development of professional standards from different viewpoints. The first investigated teachers' perceptions of a set of theoretical standards. The second analysed supervisors' reports on student and beginning teachers as a means of developing a description of teaching practice.

From a methodological perspective the investigation of teachers' perceptions of standards undertaken in this study provides direction for policy makers seeking to ensure any future

standards are in alignment with teachers' professional values and perceptions. The investigations clearly identified, from a range of standpoints, elements of the standards that did not reflect or coincide with teachers' current conception of what should be encapsulated within the standards.

The analyses also raised a number of consequential policy issues. The first is lack of confidence in the *preparedness* of beginning teachers to meet the theoretical standards, particularly amongst older, more experienced and promoted teachers. There are a number of policy issues to consider from this finding given that the standards were seen as being achievable by beginning teachers. One conclusion could be that there is a general lack of confidence in the initial preparation of beginning teachers. Another is that there is a lack of clarity about the relative roles of initial teacher preparation and induction in the development of competent professionals. How much can be achieved in initial preparation? Which aspects of beginning teacher development are best left to induction?

The second issue concerns the apparent low priority teachers gave to elements of the standards associated with theoretical knowledge. A possible reason for this, is that teachers may be unfamiliar with or unaware of current research on teaching and learning, and therefore, do not see it as being relevant or applicable to their practice.

The third issue is that teachers lack confidence in the capacity of beginning teachers to plan for individual differences. There is an apparent contradiction in the importance placed on this capacity in supervisors' reports and the low level of *achievability* and *preparedness* afforded it in survey responses. This is an area in which educational research and theory play essential roles by identifying strategies for catering for the individual learning needs of students. Judgements about beginning teachers' capacity in this area may also be tempered by lack of awareness of such research.

The fourth is an apparent lack of attention, amongst those teachers sampled, to quality in the selection and support of mentors and supervisors of beginning teachers. The homogeneity of responses from groups with and without recent mentoring and supervisory experience highlights the need to develop role statements, criteria and materials for the selection and support of mentors and supervisors of student and beginning teachers. While this finding justifies the recent initiatives undertaken in NSW to address these issues, there is a need for continued vigilance in ensuring and supporting the quality of supervisors and mentors of student and beginning teachers.

The analysis of reports on student and beginning teachers, undertaken in Study 2, was seen to provide a necessary but insufficient contribution to the articulation of standards. Necessary,

because the comments in the reports provided a focus on what teachers' value in their practice, but insufficient from a range of viewpoints. First and foremost, as noted earlier, the reports presented only the information that supervisors considered important from their assessment of the student or beginning teachers' performance. The variations amongst the reports were significant, pointing to a lack of consistency and direction.

Although, the Department of Education and Training has implemented a range of strategies to ensure the quality and consistency of certification reports, the strategies are standardising the reports in ways that may not be appropriate. Clearly, the strategies address administrative imperatives to provide a report of a certain form and quality to justify the decision about competence. However, the absence of a common language to describe the work of beginning teachers means that the reports fail to address more cogent professional imperatives. One area of clear failure is in the reporting of classroom practices.

Second, the comments in the reports focused on behaviourist models of competence. Few reports attempted to discuss the range of theoretical knowledge that student and beginning teachers brought to their practice. Equally, there were few reports that considered how the student or beginning teacher addressed the specific contextual issues relevant to the pupils being taught.

Third, the comments were not of sufficient depth to support a comprehensive description of the aspects of teaching identified in the reports. Third, there was insufficient focus, particularly in supervisors' reports on beginning teachers, on what happened in the classroom. As a consequence, it is not clear whether decisions about the competence of beginning teachers adequately consider the beginning teachers capacity to teach. There is no guarantee from these reports that the decisions about competence address the fundamental assumption stated earlier, that 'teaching is primarily concerned with facilitating students' learning.'

Finally, the importance of getting the professional standards for the teaching profession 'right' cannot be understated. Teachers must have confidence in them. They must see them as being relevant to their current practice and to their on-going development. Hopefully, this thesis has made a timely contribution towards ensuring that the voice of teachers in the development of standards is heard and heeded, and to better positioning teaching as a profession able to take responsibility for its own standards of practice.

## REFERENCES

- Abdal-Haqq, I. (1991). Professionalizing teaching: Is there a role for professional development schools? *ERIC Clearing House on Teacher Education*, 91-3, 5.
- Adams, R. J., & Khoo, S.-T. (1996). *Quest: The Interactive Test Analysis System* (Version 2.1 ed.). Camberwell, Vic: Australian Council for Educational Research Ltd.
- Aldridge, B. G., & Strassenburg, A. A. (Eds.). (1995). *Scope, sequence and coordination of secondary science: Vol 3 A high school framework for national science education standards*. Arlington VA: National Science Teachers Association.
- Allen, T. D., & Poteet, M. L. (1999). Developing Effective Mentoring Relationships: Strategies from the Mentor's Viewpoint. *Career Development Quarterly*, 48(1), 59-73.
- American Academy of Actuaries. (1999). *Professionalism*, from <http://www.actuary.org/professi.htm>
- American Association for the Advancement of Science (AAAS). (1993). *Benchmarks for science literacy*. New York: Oxford University Press.
- American Association of Colleges of Teacher Education. (1970). *Recommended standards for teacher education. The accreditation of basic and advanced preparation programs for professional school personnel*. Washington, DC: American Association of Colleges of Teacher Education.
- American National Standards Institute. (1999, 21 April). *Standardization: A management tool for building success*. Retrieved 18 June, 1999, from [http://web.ansi.org/public/std\\_info/std\\_broch/benefit\\_9.html](http://web.ansi.org/public/std_info/std_broch/benefit_9.html)
- Andrich, D. (1980). *Using Latent Trait Measurement Models to Analyse Attitudinal Data: A synthesis of Viewpoints*. Paper presented at the Invitational Conference for the Improvement of Testing in Education and Psychology, 50th Anniversary of the Australian Council for Educational Research, University of Melbourne, Melbourne.
- Aquilina, J. (1997). Ministerial memo: Project to formulate policy in pre-requisite standards, proficiencies or competencies for teachers in NSW schools.
- Arkansas Department of Education. (1999). *Have you considered National Board Certification*. Retrieved 27 March, 2000, from [http://arkedu.state.ar.us/nat\\_.htm](http://arkedu.state.ar.us/nat_.htm)
- Australian Association of Teachers of English. (2002). *STELLA - Standards for Teachers of English Language and Literacy in Australia*.
- Australian College of Educators. (2000, 24-25 April). *Professional Teaching Standards: Issues, Challenges and Opportunities: Outcomes from a national issues forum*.
- Australian College of Educators. (2001). *Teacher Standards, Quality and Professionalism: Towards a Nationally Agreed Framework*. Deakin West ACT.

- Australian College of Educators. (2003). *National Statement from the Teaching Profession on Teaching Standards, Quality and Professionalism*. Canberra.
- Australian Council of Deans of Education. (1998). *Preparing a profession: National standards and guidelines for initial teacher education*. Canberra: DEETYA.
- Australian Council of Professions. (1997). *Definition of a profession*. Retrieved 2 February, 2000, from <http://www.austprofessions.com.au/statements/definition.html>
- Australian Medical Association. (1996). *Position statements: Code of ethics*. Retrieved 29 February, 2000, from <http://domino.ama.com.au/DIE0103/Position.../e7547985ef0be8e64a2564e30025c79d?OpenDocument>
- Australian Medical Association. (1998). *Position statements: Accreditation and standards in general practice*. Retrieved 29 February, 2000, from <http://domino.ama.com.au/DIR0103/Position.../25265765dac3e8af4a2565fd0024c1de?OpenDocument>
- Australian Science Teachers Association. (2002). *National Professional Standards for Highly Accomplished Teachers of Science*. Melbourne: Australian Science Teachers Association.
- Ballou, D., & Podgursky, M. (2000). Reforming teacher preparation and licensing: What is the evidence? *Teachers College Record*, 102(1), 5-27.
- Barcan, A. (1996). Attempts to Reform Australian State Schools, 1979-1996. *Education Research and Perspectives*, 23(1).
- Barcan, A. (1999). School Reform Movements Overseas and their Relevance to Australia. *Education Research and Perspectives*, 26(1).
- Barker, K., Kagan, D., Klemp, R., Roderick, S., & Takenaga-Taga, D. (1997). *Toward a growth model of teacher professionalism*. Retrieved July 20, 2000, from <http://teachnet.org/NTPI/research/network/lafellows.htm>
- Beare, H. (1992). What does it mean to be a profession? A commentary about teacher professionalism. *Unicorn*, 18(4), 65-72.
- Best, C. (2000). *Judging Teachers' Work - The implementation of teaching standards in the USA* (Unpublished Education Fellowship Report): NSW Dept of Education and Training.
- Biddle, B. J. (1997, September). Foolishness, dangerous nonsense, and real correlates of state differences in achievement. *Phi Delta Kappan*, 79.
- Bigelow, B. (1999a). Social studies tests from hell. *Rethinking Schools Online*, 13(3).
- Bigelow, B. (1999b). Standards and multiculturalism. *Rethinking Schools Online*, 13(4).
- Bloland, P. A. (1992). *Qualitative Research in Student Affairs*. *Eric Digest*. Retrieved 7 July, 2002, from [http://www.ed.gov/databases/ERIC\\_Digests/ed347487.html](http://www.ed.gov/databases/ERIC_Digests/ed347487.html)

- Board of Studies. (1999). Securing Their Future: Newsletter. *Board of Studies Newsletter*(14).
- Bond, T. G. (2005).
- Bond, T. G., & Fox, C. M. (2001). *Applying the Rasch Model: Fundamental Measurement in the Human Sciences*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Borg, W., & Gall, M. (1989). *Educational Research: An Introduction* (5th ed.). New York: Longman.
- Boston, K. (1999a). Enhancing the status of the teaching profession. *Unicorn*, 25(1), 7-14.
- Boston, K. (1999b, 15 May). *Looking Backwards Towards Tomorrow - Reflections on the foundation and future of the Australian College of Education*. Paper presented at the Meeting of the Australian College of Education Queensland Chapter, Brisbane.
- Bracht, G., & Glass, G. (1966). The external validity of experiments. *American Educational Research Journal*, 5, 437-474.
- Brock, P. (1999). Ethics and professional teaching standards. In *The professional ethics of teaching: Initial and continuing teacher professional development: Occasional paper: Number 2*. Sydney: Department of Education and Training: Training Development Directorate.
- Brock, P., & Mowbray, B. (1998). *Towards Identifying Professional Teaching Standards for New South Wales Schools*. Sydney: NSW Department of Education and Training.
- Burbules, N., & Densmore, K. (1991). The limits of making teaching a profession. *Education Policy*, 5(1), 44-63.
- Burrow. (1993). National competency standards for the teaching profession: A chance to define the future of schooling or a reaffirmation of the past? In C. Collins (Ed.), *Competencies: The competencies debate in Australian education and training* (pp. 109-115). Canberra: Australian College of Education.
- Burton, A., & Miller, D. (1998). Movement Skills Assessment. In *Human Kinetics*. Champaign, IL.
- Caldwell, B. (1999). *The status of the new professional in schools of the third millennium: Benchmarking against the best in medical practice*. Paper presented at the New Professionalism in Teaching: Teacher Education and Teacher Development in a Changing World, Hong Kong.
- Campbell, J. (1992, August). *The National Curriculum in Primary Schools: A dream at conception - a nightmare at delivery*. Paper presented at the Annual Conference of the British Association for the Advancement of Science, Southampton, England.
- Canadian Information Processing Society. (1997). *Professionalism*. Retrieved July, 2000, from <http://www.cips.ca/professionalism/default.htm>
- Capper, C. A., & Jamison, M. T. (1993). Outcomes-based education reexamined: From structural functionalism to poststructuralism. *Educational Policy*, 7(4), 427-446.

- Case, C. W., Lanier, J. E., & Miskel, C. G. (1986). The Holmes Group Report: Impetus for gaining professional status for teachers. *Journal of Teacher Education*, 37(4), 36-43.
- Chomsky, N. (1968). *Language and Mind*: Harcourt, Brace and World.
- Clements, M. A. (1996). The national curriculum in Australia. *Educational Research and Perspectives*, 23(1), 26.
- Close, D., Miller, J., Titterington, L., & Westwood, D. (1996). National benchmarks and standards in science education: A primer. *Eric Clearinghouse for Science and Mathematics, and Environmental Education Digests*, ED402156, 5.
- Coakes, S. J., & Steed, L. G. (2003). *SPSS Analysis without Anguish Version 11.0 for Windows*. Milton, Qld: John Wiley and Sons Australia Ltd.
- Cohen, L., & Manion, L. (1994). *Research methods in education* (4th ed.). London: Routledge.
- Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Weinfeld, F. D., et al. (1966). *Equality of educational opportunity*. Washington, DC: U.S Government Printing Office.
- Collins, C. (Ed.). (1993). *Competencies: The competencies debate in Australian education and training*. Canberra: Australian College of Education.
- Commission on Student Learning. (1997). *Essential Academic Learning Requirements (EALR) - Benchmark 2*. Washington: Commission on Student Learning.
- Committee on Assessment and Teacher Quality. (2001). *Testing Teacher Candidates: The role of licensure tests in improving teacher quality*. Washington DC: National Academy Press.
- Congress of the United States of America. (1994). *Goals 2000: Educate America Act*. Washington.
- Connecticut State Department of Education. (1999). *Connecticut Competency Instrument*. Hartford: Division of Evaluation and Research.
- Council for Exceptional Children. (1966). *Professional standards for personnel in the education of exceptional children, professional standards project report*. Arlington, VA.
- Council of Chief State School Officers: Interstate School Leaders Consortium. (1996). *Standards for School Leaders*, 1996, from <http://www.ccsso.org/standards.html>
- Darling-Hammond, L. (1986). We need schools able and willing to use Carnegie's "Teachers for the 21st century". *Chronicle of Higher Education*(July).
- Darling-Hammond, L. (1994, February 17). *Standards for teachers. 34th Charles Hunt Memorial Lecture*. Paper presented at the 46th Annual Meeting of the American Association of Colleges for Teacher Education, Chicago IL.
- Darling-Hammond, L. (1998a). Standards for Assessing Teaching Effectiveness Are Key. *Phi Delta Kappan*, 79(5), 471-472.

- Darling-Hammond, L. (1998b). Teacher Learning That Supports Student Learning. *Educational Leadership*, 55(5), 6-11.
- Darling-Hammond, L. (2000a). Reforming teacher preparation and licensing: Debating the evidence. *Teachers College Record*, 102(1), 28-56.
- Darling-Hammond, L. (2000b). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives*, 8(1), 41.
- Darling-Hammond, L. (2001). *The right to learn: A blue print for creating schools that work*: Josey Bass.
- Darling-Hammond, L., & Aness, J. (1994). *Graduation by Portfolio at Central Park East Secondary School. A Series on Authentic Assessment and Accountability*. New York, NY: Teachers College, National Center for Restructuring Education, Schools and Teaching, Columbia Univ.
- Darling-Hammond, L., & Sykes, G. (2003, 17 September,). *Wanted: A National Teacher Supply Policy for Education: The Right Way to Meet The "Highly Qualified Teacher" Challenge*. Retrieved 12 December, 2004, from <http://epaa.asu.edu/epaa/v11n33/v11n33.pdf>
- David Blunkett Secretary of State for Education and Employment. (1998). *Teachers: Meeting the challenge of change*. London: UK Parliament.
- Dawkins. (1988). *Strengthening Australian Schools*. Canberra: Australian Government.
- Deer, C. E. (Ed.). (1993). *Areas of competence for teachers - The NSW scene*. Canberra: The Australian College of Education.
- Deer, C. E., Meyenn, R. J., Taylor, A., & Williams, D. (1995, November 26-30). *Teacher registration and accreditation of teacher education programs: Crucial Issues for the profession and Australia*. Paper presented at the Annual Conference of the Australian Association For Research in Education, Hobart.
- Delaware Department of Education. (1998, January). *Regulations of the Department of Education: 300.3 Delaware professional teaching standards*. Retrieved 27 March, 2000, from [http://www.doe.state.de.us/policy/REGS\\_MANUAL/300file.htm](http://www.doe.state.de.us/policy/REGS_MANUAL/300file.htm)
- Department for Education and Employment. (1995, January). *The National Curriculum for English: Foreword*. Retrieved February 14, 2000, from <http://www.dfes.gov.uk/nc/engindex.html>
- Department for Education and Employment. (1999). *What is the General Teaching Council?* Retrieved June, 2000, from <http://www.dfes.gov.uk/gtcguide/contents.htm>
- Department for Education and Employment. (2000a, 9 February). *Consultation on Standards for the performance threshold*. Retrieved November, 2000, from <http://www.dfes.gov.uk/teachingreforms/rewards/perfthresh/draftperfs/docs/strb.shtml>
- Department for Education and Employment. (2000b). *Teaching reform briefs*. Retrieved May, 2000, from <http://www.dfes.gov.uk/teachingreforms/rbriefs.htm>



- Devlin, S., Dong, J. H. K., & Brown, M. (1993). Selecting a Scale for Measuring Quality. *Marketing Research*, 5(3), 3-27.
- Dickson, S. H. (2000). *A Multi-Faceted Analysis of Performance Criteria: Implications for the Education and Assessment of Elite Soccer Officials in Australia*. Unpublished PhD, University of New England, Armidale.
- Diessner, R. (1997). *The teacher as professional: A normative position*. Lewiston: Lewis-Clark State College.
- Doolittle, P. (1994). Teacher Portfolio Assessment. ERIC/AE Digest. 1993, 4.
- Drew, C., Hardman, M., & Weaver-Hart, A. (1996). *Designing and conducting research - Inquiry in education and social science* (2nd ed.). Boston: Allun and Bacon.
- Elam, S. (1972). *Performance-based teacher education: What is the state of the art?* Washington, DC: AACTE.
- Elliot, J. (1990). Conclusion: Rethinking appraisal. In H. Simons & J. Elliot (Eds.), *Rethinking appraisal and assessment*: Milton Keynes: Open University Press.
- Elmore, R. (1996). Getting to scale with successful educational practices. In S. H. Fuhrman & J. O'Day (Eds.), *Rewards and Reform: Creating Educational Incentives that Work* (pp. 294-329).
- Eltis, K. J. (1995). *Focusing on Learning: Report of the Review of Outcomes and Profiles in New South Wales Schooling*. Sydney: NSW Department of Education and Training Coordination.
- Eltis, K. J., & Mowbray, B. K. (1997). Focusing on Learning in New South Wales. In J. Lokan (Ed.), *Describing Learning: Implementation of Curriculum Profiles in Australian Schools 1986-1996*. Melbourne: ACER Research Monograph.
- EPA: United States Environmental Protection Agency. (1998). *Terms of environment*. Retrieved 7 March, 2000, from <http://www.epa.gov/OCEPAterms/aterms.html>
- Eraut, M. (1994). *Developing Professional Knowledge and Competence*. London: The Falmer Press.
- Eric Review. (1995). Professional Development. *Eric Review*, 3(3).
- Everhart, J. L. (1997). Developing a process measurement assurance program (PMAP). *CAL LAB: The International Journal of Metrology*, 22-28.
- Fernandez, A. (1999). *The changing context of teacher professionalism*. Paper presented at the New Professionalism in Teaching: Teacher Education and Teacher Development in a Changing World Conference, Hong Kong.
- Fetler, M. (1999). High school staff characteristics and mathematics test results. *Education Policy Analysis Archives*, 7(9), 20.
- Figgis, J. (1998, 24-26 February). *Why standards are not the solution to the problem of the status of teaching*. Paper presented at the Professional Standards and the Status of Teaching conference, Freemantle.

- Flavell, J., & Wohlwill, J. (Eds.). (1969). *Formal and functional aspects of cognitive development*: Oxford University Press.
- Foundation for Industrial Modernisation (FIM). (1995). *National skills standards project for advanced high performance manufacturing*. Washington, DC: National Coalition for Advanced Manufacturing.
- Frederick, L. R., & Shaw, E., L., Jr. (1996, November 6-8). *A survey of the use of portfolios in selected public elementary schools*. Paper presented at the Annual Meeting of the Mid-South Educational Research Association, Tuscaloosa, AL.
- Fris. (1975). The professional status of teachers: Some theoretical concerns and Ontario survey. *Canadian Administrator*, 14(5), 1-5.
- Furlong, J., Barton, L., Miles, S., Whiting, C., & Whitty, G. (2000a, 27-29 January). *Challenge and change in initial teacher education: Lessons from the English Experience: Background: Paper one*. Paper presented at the International Symposium 'Review of Teacher Education in New South Wales' Faculty of Education, University of Sydney.
- Furlong, J., Barton, L., Miles, S., Whiting, C., & Whitty, G. (2000b, 27-29 January). *Challenge and change in initial teacher education - lessons from the English experience: Paper two*. Paper presented at the International Symposium 'Review of Teacher Education in New South Wales' Faculty of Education, Sydney University.
- Gale, T., Erben, T., & Danaher, P. (1997, 5-8 July). *Towards a new settlement in Australian teacher education: A review of shifting sensibilities*. Paper presented at the Australian Teacher Education Association Conference, Yeppoon, Queensland.
- Giddens, A. (1994). *Beyond Left and Right*. Oxford: Polity Press.
- Gillborn, D., & Youdell, D. (1998, 13-17, April). *"Raising Standards" & Deepening Inequality: Selection, League Tables, and Reform in Multiethnic Secondary Schools*. Paper presented at the symposium, "Racism and Reform in the United Kingdom: The Market, Selection, and Inequality," held at the Annual Meeting of the American Educational Research Association, San Diego, CA.
- Gitomer, D. H. (1997, March 24-28). *Challenges for scoring performance assessment in the NBPTS system*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago IL.
- Goodson, I. (1999). *Towards a Principled Professionalism*. Paper presented at the New Professionalism in Teaching: Teacher Education and Teacher Development in a Changing World Conference, Hong Kong.
- Gore, J., & Morrison, K. (1999, November). *The perpetuation of a (semi) profession: Challenges in the governance of teacher education*. Paper presented at the Australian Association for Research in Education and New Zealand Association for Research in Education Conference, Melbourne.
- Grant, L., Adamson, G., Craig, A., Marrin, M., & Squire, F. (1998, February 24-26). *The Ontario College of Teachers: Honouring and sustaining the teaching profession in Canada*. Paper presented at the Professional Standards and Status of Teaching Conference, Edith Cowan University, Perth.

- Greenwald, R., Hedges, L., & Laine, R. (1996). The effect of school resources on student achievement. *Review of Educational Research*, 66, 3.
- Gress, J. (1975). *A study of the impact of new standards for teacher education* (Research report). Ohio.
- Grubb, D., & Courtney, A. (1996, March 11-16). *Developmentally appropriate assessment of young children: The role of portfolio assessments*. Paper presented at the 47th Annual Conference of the Southern Early Childhood Association, Little Rock, AR.
- Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communication and Technology Journal*, 29(2), 75-91.
- Guba, E. G., & Lincoln, Y. S. (1989). *Fourth Generation Evaluation*. Newbury Park, CA: Sage.
- Haberman, M. (1986). Licensing teachers: Lessons from other professions. *Phi Delta Kappan*, 67, 719-722.
- Hager, P. (1992, September). *Is there a cogent philosophical argument against competency standards?* Paper presented at the Annual conference of the Philosophy of Education Society of Australasia, Freemantle.
- Hager, P., & Becket, D. (1995). Philosophical underpinnings of the integrated conception of competence. *Educational Philosophy and Theory*, 27(1), 1-24.
- Hakim, C. (1987). *Research design: strategies and choices in the design of social research*. London: Unwin Hyam Inc.
- Hanushek, E. A. (1996). A more complete picture of school resourcing policies. *Review of Educational Research*, 66(3), 397-409.
- Hargreaves, A. (1997). The four ages of professionalism and professional learning. *Unicorn*, 32(2), 86-114.
- Hargreaves, D. (2000). The Production, Mediation and Use of Professional Knowledge Among Teachers and Doctors: A Comparative Analysis. In *Knowledge Management in the Learning Society* (pp. 253). Paris: Centre for Educational Research and Innovation.
- Harrington, D. (1987). *Beyond the four walls: Teacher professionalism in action*. New York: United Federation of Teachers and the Edwin Gould Foundation for Children.
- Hattie, J. (1996). *A Description of the Process for Establishing National Board for Professional Teaching Standards Middle Childhood/Generalist Certification Standards*: Centre for Educational Research and Evaluation, University of Carolina at Greensboro.
- Hay McBer. (2000a). *Consultation on standards for the performance threshold. Raising achievement in our schools: Model of effective teaching. An interim report from Hay McBer on research findings*. London: DfEE.
- Hay McBer. (2000b). *Research into teacher effectiveness - A model of teacher effectiveness. Report by Hay McBer to the Department of Education and Employment*. London: DFEE.

- Hebert, E. A. (1998). Lessons learned about student portfolios. *Phi Delta Kappan*(April 1998).
- Hess, F. (2001). *Tear down this wall: The case for a radical overhaul of teacher certification*. Washington DC: Progressive Policy Institute.
- Hill, P. W., Rowe, K., & Holmes-Smith, P. (1993). *School and teacher effectiveness in Victoria. Key findings from phase 1 of the Victorian Quality Schools Project*. Paper presented at the 7th Annual Meeting of the International Congress for School Effectiveness and Improvement, Melbourne.
- Hipps, J. (1993, April 12-16). *Trustworthiness and authenticity: Alternate ways to judge authentic assessment*. Paper presented at the Annual Meeting of the American Educational Research Association, Atlanta GA.
- Hoepfl, M. C. (1997). Choosing Qualitative Research: A primer for Technology Education Researchers. *Journal of Technology Education*, 9(1), 47-63.
- Holmes Group. (1986). *Tomorrow's teachers: A report of the Holmes Group*. East Lansing, MI: Author.
- Huling, L., & Resta, V. (2001). *Teacher Mentoring as Professional Development*. ERIC Digest. Retrieved 14 April, 2004, from [http://www.eduref.org/plweb/cgi/fastweb?getdoc+eduref+ericdb+1062385+2+wAAA+%28%28mentor%29%26AND%26%28080%26OR%26073%29%26%3Apublication\\_type%29%26AND%26%281998%3C%26Publication\\_Date%26%3C2004%29](http://www.eduref.org/plweb/cgi/fastweb?getdoc+eduref+ericdb+1062385+2+wAAA+%28%28mentor%29%26AND%26%28080%26OR%26073%29%26%3Apublication_type%29%26AND%26%281998%3C%26Publication_Date%26%3C2004%29)
- Hunter, D. (1999). *Defining educational standards and determining their reasonableness - summary of a master's thesis*. University of Regina, Regina.
- Ingvarson, L. (1997). *Teaching Standards: Foundations for professional development reform*. Melbourne: Monash University.
- Ingvarson, L. (1998, 24-26 February). *Professional development in pursuit of professional standards*. Paper presented at the Professional Standards and Status of Teaching Conference, Edith Cowan University, Perth.
- Ingvarson, L. (1999a). The power of professional recognition. *Unicorn*, 25(2), 52-70.
- Ingvarson, L. (1999b). Professional certification: Do we need it? *Unicorn*, 25(2), 5-12.
- Ingvarson, L., & Wright, J. (1999). Science teachers are developing their own standards. *Australian Science Teacher's Journal*, 45(4).
- Institute for the Accreditation of Professional Employer Organizations. (1999). *Accreditation - Standards and procedures*. Retrieved 29 February, 2000, from <http://www.iapeo.org/iapacc.htm>
- Interim Committee for a NSW Institute of Teachers. (2003). *Report of the Interim Committee in the Establishment of a NSW Institute of Teachers*.

- International Standards Organisation. (1997). *Quality Management Principles* (No. ISO/TC176/SC2/WG15/N130).
- International Standards Organisation. (2003). *Annual Report*.
- Interstate New Teacher Assessment and Support Consortium. (1992). *Model standards for beginning teacher licensing and development: A resource for state dialogue*. Retrieved 21 November, 1997, from <http://www.ccsss.org/ccsso.org/corestan.html>
- Jackson, N. (Ed.). (1993). *Competencies. The competencies debate in Australian education and training*. Canberra: The Australian College of Education.
- Jasman, A. (1997, 5-8 July). *Describing the existing knowledge base for university teachers: A competency framework for effective teaching and teacher leadership*. Paper presented at the Refereed Proceedings of the 27th Annual Conference of the Australian Teacher Education Association (ATEA), Yeppoon, Queensland, Australia.
- Jasman, A. (1998a, 29 November — 3 December). *Issues in establishing professional competency-based teaching standards: an analysis of processes used in determining Level 3 Classroom Teachers in Western Australia*. Paper presented at the Annual Conference of the Australian Association for Research in Education, Adelaide.
- Jasman, A. (1998b). *Teacher Career Structure: Revised Draft Competency Standards for Level 3 Classroom teachers* (No. 4): Centre for Curriculum and Professional Development: Murdoch University.
- Jasman, A. (1999a). *Assessing teachers for career progression: the Level 3 Classroom teacher in Western Australia. paper in preparation for special Edition of Unicorn on Professional Certification*.
- Jasman, A. (1999b, November, 1999). *A global issue and local response: the role of experienced classroom teachers in creating collaborative structures*. Paper presented at the New Zealand and Australian Associations for Research in Education, Melbourne.
- Jasman, A. (1999c). *Level 3 Classroom Teachers in Action: Survey report of negotiation and implementation of Level 3 Classroom teachers, roles in 1998*. Perth: Centre for Curriculum and Professional Development, Murdoch University.
- Jasman, A., & Barrera, S. (1998). *Teacher Career Structure: Level 3 Classroom Teachers: Final Report*. Perth: Centre for Curriculum and Professional Development: Murdoch University.
- Jennings, J. F. J. (1999, April 13, 1999). *NAEP: An Invaluable Resource in Need of Improvement*. Retrieved 31 June 1999, 1999, from [http://www.ctredpol.org/policy\\_papers/policy\\_papers.html](http://www.ctredpol.org/policy_papers/policy_papers.html)
- Johnson, P. (1996). *Changing the culture: Engineering education into the future: Review report*. Canberra ACT: The Institution of Engineers, Australia.
- Joint Committee on Professional Standards Boards. (1967). *Guidelines for professional standards boards*. Washington, DC: National Education Association, National Commission on Teacher Education and Professional Standards.

- Joint ILO/UNESCO committee of experts on the application of the recommendation concerning the status of teachers. (1998). *Report* (Fourth Special Session). Paris: International Labour Organization/United Nations Educational, Scientific and Cultural Organization.
- Kelly, J. A. (2000a). Advanced professional certification for teachers: Catalyst for broad band-width educational reform. *Unicorn*, 26(1), 8-20.
- Kelly, J. A. (2000b, 28 February). Raising the standard. *The Australian*, p. 15.
- Kemp, D. (1997). Supporting quality teaching. *Unicorn*, 32(2), 3-10.
- Kennedy, K. J., & Preston, P. (1995, July). *Teacher competencies and initial teacher education*. Paper presented at the Annual Conference of the Australian Teacher Education Association, Australian Catholic University, Sydney.
- Khurusapha The Teachers Council of Thailand. (1997). *Standards on Teaching Profession*. Retrieved March, 2001, from <http://www.moe.go.th/teach1.htm>
- Laird, D. (1998). *Standards, teacher education and the status of teachers*. Paper presented at the Australian Teacher Education Association Conference.
- Leighton, M. S., & Sykes, G. (1992). *The professionalization of teaching: Centrepiece of Kentucky reform*. Charleston W. Va.: State Policy Program: Appalachia Educational Laboratory.
- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Newbury Park: Sage Publications.
- Livingston, S. A., & Zieky, M. (1982). *Passing scores: A manual for setting standards*. Princeton, NJ: Educational Testing Service.
- Longstaff, S. (1996). The role of ethics in professional and commercial relationships. In S. Fisher (Ed.), *The Law of Commercial and Professional Relationships* (pp. 89-120). Sydney: John Libby & Co.
- Louden, W. (2000). Standards for standards: The development of Australian professional standards for teaching. *Australian Journal of Education*, 44(1).
- Lowry, R. (2002). *Concepts and Applications of Inferential Statistics*. Retrieved 1 Nov, 2003, from <http://faculty.vassar.edu/lowry/webtext.html>
- Martineau, S. (1998, March). *Moving towards professionalism*. Retrieved June, 2000, from [http://www.oct.on.ca/english/ps/march\\_1998/moving.htm](http://www.oct.on.ca/english/ps/march_1998/moving.htm)
- Marzano, R. J., & Kendall, J. S. (1997, September). *The fall and rise of standards-based education*. Retrieved 15 June, 1999, from <http://www.mcrel.org/standards/articles/fall-and-rise-printer.a>
- Marzano, R. J., & Kendall, J. S. (1998, 14 January). *Awash in a sea of standards*. Retrieved 5 July, 1999, from <http://www.mcrel.org/standards/articles/awash.asp>
- Mason, G. (1998). Recent Advances in Questionnaire Design for Program Evaluation. *The Canadian Journal of Program Evaluation*, 11(1), 73-94.

- McFee, G. (1992). Triangulation in research: Two confusions. *Educational Research*, 34(3), 215-219.
- McGaw, B. (1996). *Their Future*. Sydney: Department of Training and Education Coordination.
- McGaw, B. (1997). *Shaping Their Future: Recommendations For Reform of The Higher School Certificate*. Sydney: Department of Training and Education Coordination.
- McIntosh, G. (1995). *The Schooling Revolution: Too Much, Too Fast?* Canberra: Department of the Parliamentary Library Background Paper 1, 1995-96 Social Policy Group.
- McIntyre, A. (1984). *After Virtue (2nd edition)*. Notre Dame, In: University of Notre Dame Press.
- Messick, S. (1984). The psychology of educational measurement. *Journal of Educational Measurement*, 21, 215-238.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis. An expanded Source book* (second ed.). Thousand Oaks: Sage Publications.
- Ministerial Advisory Council on the Quality of Teaching (MAQT). (1999). *Identifying the Challenges: Initial and Continuing Teacher Education in the 21st Century*. Sydney: Department of Education and Training.
- Morin, J. A. (1995, July 9-14). *Portfolios: An effective tool used by prospective teachers to encourage self-evaluation and improvement*. Paper presented at the 4th Annual Meeting of the National Evaluation Institute, Kalamazoo, MI.
- Morris, E. (2000). Press release: Hay McBer Report sets out vivid description of teacher effectiveness: DfEE.
- Mortimore, P., & Sammons, P. (1987). New evidence on effective schools. *Educational Leadership*, 45(1), 4-8.
- Mowbray, B., Parker, J., & Squires, D. (1998). *Towards greater professionalism: teacher educators, teaching and the curriculum*. Sydney, Australia: Ministerial Council on the Quality of Teaching.
- Mullinix, B. B. (2002). *Selecting and Retaining Teacher Mentors*. *ERIC Digest*. Retrieved 14 April, 2004, from [http://www.eduref.org/plweb-cgi/fastweb?getdoc+eduref+ericdb+1143165+0+wAAA+%28%28mentor%29%26AND%26%28080%26OR%26073%29%26%3Apublication\\_type%29%26AND%26%281998%3C%26Publication\\_Date%26%3C2004%29](http://www.eduref.org/plweb-cgi/fastweb?getdoc+eduref+ericdb+1143165+0+wAAA+%28%28mentor%29%26AND%26%28080%26OR%26073%29%26%3Apublication_type%29%26AND%26%281998%3C%26Publication_Date%26%3C2004%29)
- Munby, H. (1982). The place of teachers' beliefs in research on teacher thinking and decision making: an alternative methodology. *Instructional Science*, 11, 201-225.
- National Board for Professional Teaching Standards. (1996a). *About the National Board: What teachers should know and be able to do: Introduction*. Retrieved 22 February, 2000, from <http://www.nbpts.org/standards/intro.html>

- National Board for Professional Teaching Standards. (1996b). *An invitation to National Board Certification, Q&A 1996-1997*. Southfield MI: National Board for Professional Teaching Standards.
- National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. Washington DC: US Department of Education.
- National Council for the Accreditation of Teacher Education. (1997). *NCATE Standards*, from <http://www.ncate.org/about/sintro.html>
- National Council for the Accreditation of Teacher Education. (2000). *Program standards for elementary teacher preparation*: NCATE.
- National Council of Teachers of Mathematics. (1989). *Curriculum and Evaluation Standards for School Mathematics*. Reston, VA: National Council of Teachers of Mathematics,.
- National Goals Taskforce. (1999). *Report of the National Goals Taskforce*: Ministerial Council for Education, Employment, Training and Youth Affairs.
- National Project on the Quality of Teaching and Learning. (1996). *National competency framework for beginning teachers*. Leichhardt, Sydney, NSW: Australian Teaching Council.
- National Research Council. (1996). *National science education standards*. Washington, DC: National Academy Press.
- National Training Board. (1991). *Australian Standards Framework (ASF)*.
- National Training Board. (1992). *National competency standards: Policy and guidelines. (Second Edition)*. Canberra: NTB Network.
- New Jersey Department of Education. (Unknown). *How to apply for licensure*. Retrieved 27 March, 2000, from <http://www.state.nj.us/njded/educators/license.1111.htm>
- New South Wales Board of Studies. (1991). *Curriculum outcomes*. Sydney: Author.
- New Zealand Ministry of Education. (1998, March 5). *Interim Professional Standards: Primary School Deputy/Assistant Principals, Primary School Teachers*. Retrieved June 15, 1999, from <http://www.minedu.govt.nz/Schools/ProfessionalStandards/ips.htm>
- Norris, N. (1991). The trouble with competence. *Cambridge Journal of Education*, 21(3), 331-341.
- OECD. (1997). *Education and Working Life*: Organisation for Economic Co-operation and Development, 2, rue Andre-Pascal, 75775 Paris Cedex 16, France.
- OECD. (2000). *Knowledge Management in the Learning Society: Education and Skills*. Paris: Centre for Educational Research and Innovation.
- Olson, L. (1999). In 1st year of tests, states must brace for foul weather. *Education Week on the Web*(February 3).



- Ontario College of Teachers. (1999a). *Staff procedural handbook for pre-service teacher education program accreditation*. Toronto.
- Ontario College of Teachers. (1999b). *Standards of practice for the teaching profession*. Toronto: Ontario College of Teachers.
- Ontario College of Teachers. (2000a, June). *Ethical Standards for the Teaching Profession*. Retrieved 15 June, 2001, from <http://www.oct.ca/en/CollegePublications/PDF/ethics.pdf>
- Ontario College of Teachers. (2000b). *Maintaining, Ensuring and Demonstrating Competency in the Teaching Profession: A response to the request from the Minister for Education: re a Teacher Testing Program*. Toronto.
- Ontario College of Teachers. (2000c). *New members handbook*. Toronto: Ontario of College of Teachers.
- Ontario College of Teachers Implementation Committee. (1995). *The Privilege of Professionalism*. Toronto: Ministry of Education and Training.
- Onwuegbuzie, A. J. (2000, November 8, 2000). *Positivists, Post-Positivists, Post-Structuralists, and Post-Modernists: Why Can't We All get Along? Towards a Framework for Unifying Research Paradigms*. Paper presented at the Annual Meeting of the Association for the Advancement of Educational Research, Ponte Verda, FL.
- Osborne, M., Broadfoot, P., Abbott, D., Croll, P., & Pollard, A. (1991, April 3-7). *The impact of current changes in English primary schools on teacher professionalism*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Pascoe, S. (Ed.). (1997). *Situating Australian developments within international contexts*. Sydney: Department of Training and Education and Coordination.
- Paul, R. W. (1992). *Critical thinking: What every person needs to survive in a rapidly changing world* (2nd ed.). Rohnert Park, CA: Foundation for Critical Thinking.
- Personnel and Employee Relations Directorate. (1997). *Merit Selection Procedures Manual*. Sydney: Department of School Education.
- Peterson, P. L., McCarthy, S. J., & Elmore, R. (1996). Learning from school restructuring. *American Educational Research Journal*, 3(1), 119-154.
- Popham, W. J. (1978). *Criterion-referenced measurement*. Eaglewood Cliffs, NJ: Prentice-Hall.
- Pratte, R., & Rury, J. L. (1991). Teachers, professionalism, and craft. *Teachers College Record*, 93, 59-72.
- Preston, B., & Kennedy, K. (1995). Issues and principles for the application of the Draft National Competency Framework for Beginning Teaching to initial teacher education. *Australian Educational Researcher*, 22(2), 27-62.
- Preston, B., & Walker, J. (1993). Competency-based standards in the profession and higher education: A holistic approach. In C. Collins (Ed.), *Competencies. The Competencies*

- debate in Australian education and training* (pp. 116-130). Canberra: Australian College of Education.
- Public Relations Society of America. (1988). *Code of professional standards for the practice of public relations*. Retrieved 29 February, 2000, from <http://www.prsa.org/profstd.html>
- Purkey, S. C., & Smith, M. S. (1983). Effective schools: A review. *Elementary School Journal*, 83(4), 427-452.
- Qualifications and Certification Agency. (2000). *The Revised National Curriculum for 2000: What has changed?* Retrieved 14 February, 2000, from <http://www.qca.org.uk/changes-to-the-nc/main.htm>
- Qualitative Solutions and Research Pty Ltd. (1997). *QSR NUD.IST 4 User Guide*. Melbourne: Scolar.
- Ralph, E. G. (1994). Enhancing the supervision of beginning teachers: A Canadian initiative. *Training and Teacher Education*, 10(2), 185-203.
- Ramsay, J. (2000). *The Hybrid Course: Competences and Behaviourism in Higher Education*
- Ramsey, G. (1999). Personal communication.
- Ramsey, G. (2000). *Quality Matters. Revitalising teaching: Critical times, critical choices*. Sydney: NSW Department of Education and Training.
- Ravitch, D. (1999). Student performance: The national agenda in education. *Brookings Review*, 17(1), 12-16.
- Reckase, M. D. (1997, March 24-28). *Constructs assessed by portfolios: How do they differ from those assessed by other educational tests*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Rodgers, C. (2002). Defining Reflection: Another Look at John Dewey and Reflective Thinking. *Teachers College Record*, 104(4), 842-866.
- Rothstein, R. (1998, 21 October, 1998). *NAEP gets bad grading on grading*. Retrieved 1 July, 1999, from <http://epn.org/idea/columns/ro981021.htm>
- Rutter, M. (1979). *Fifteen Thousand Hours: Secondary schools and their effects on children*. Cambridge, Mass: Harvard University Press.
- Sachs, J. (1999). The activist professional. *International Journal of Educational Change (Forthcoming)*, 1(1).
- Sanders, J. A. (1994, April 7). *The process of developing national standards that meet ANSI guidelines*. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans LA.
- Saskatchewan Teachers Federation. (1997). *Professionalism - A discussion paper for the Saskatchewan Teaching Profession*. Retrieved October 10, 2000, from <http://www.stf.sk.ca/admin/research/studies/profess.htm>

- Schön, D. A. (1983). *The Reflective Practitioner: How professionals think in action*. San Francisco: Jossey-Bass.
- Schön, D. A. (1987). *Educating the Reflective Practitioner, Towards a new Design for Teaching and Learning in the Professions*. San Francisco: Jossey-Bass.
- Schroder, H. M. (1989). *Managerial Competence: The Key to Excellence*. Iowa: Kendall/Hunt.
- Scribner, S., & Cole, M. (1981). *The Psychology of Literacy*. Harvard, Mass.: Harvard University Press.
- Secretary for State and Education. (1998). *Teachers: meeting the challenge of change: UK Green Paper on Education*. London: DfEE.
- Senate Employment Education and Training References Committee. (1998). *A class act*. Canberra: Senate Printing Unit, Parliament House.
- Shapiro, B. C. (1995). National standards for teachers. *Streamlined Seminar*, 13(4).
- Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, 57, 1-22.
- Shulman, L. S. (2002). MAKING DIFFERENCES: A Table of Learning. *Change*, 34(6), 36-44.
- Sill, D. (1996). *Frequently Asked Questions*. Retrieved 19 November, 1999, from <http://sacam.oren.orn.edu/~dave/benchmark-faq.html>
- Simpson, T. (1997, 5-8 July). *The public perception of teachers: A different projection*. Paper presented at the Refereed Proceedings of the 27th Annual Conference of the Australian Teacher Education Association (ATEA), Yeppoon, Queensland, Australia.
- Smith, M. (1999). *Teacher professionalism initiative welcomed*. Retrieved 20 July, 2000, from <http://www.ts.co.nz/nicksmp/pressrel/99/4-20.html>
- Snow, R. E., & Swanson, J. (1992). Instructional Psychology: Aptitude, Adaptation and Assessment. *Annual Review of Psychology*, 43, 583-626.
- Sockett, H. (1990). Accountability, trust, and ethical codes of practice. In J. I. Goodlad, R. Soder & K. A. Sirotnik (Eds.), *The Moral Dimensions of Teaching* (pp. 224-250). San Francisco: Jossey-Bass.
- Sockett, H. (1993). *The moral base for teacher professionalism*. New York: Teachers College Press.
- Sparkes, D. (1994). Staff development implications of national board certification: An interview with NBPTS's James Smith. *Journal of Staff Development*, 15(1), 58-59.
- Standards Australia. (1998, 16 November 1998). *Standards Australia Frequently Asked Questions: What is a current Standard?* Retrieved 22 July, 1999, from <http://www.standards.org.au/information%2Dsheets/aaaa%2Dfaq/aaaa%2Dstandards%2Daustralia%2Dfaq.htm#TOC7>

- Standards Council of Canada. (1999, 21 June). *Welcome to the SCC.CA*. Retrieved 22 June 1999, from <http://www.scc.ca/steps.html>
- Standards Council of the Teaching Profession. (1997). *Professional standards for teachers and dimensions of teaching*. Retrieved 11 July, 1997, from [http://www.dse.vic.gov.au/sc\\_prec1.htm](http://www.dse.vic.gov.au/sc_prec1.htm)
- Standards Engineering Society. (1999). *Standards setting in a competitive world: SES Annual Conference - Conference Program*. Retrieved 10 June, 1999, from <http://www.ses-standards.org/content/conference.htm>
- Stanley, G. (1993). The psychology of competency-based education. In C. Collins (Ed.), *Competencies. The competencies debate in Australian education and training* (pp. 145-153). Deakin: ACT: Australian College of Education.
- State of Connecticut Department of Education. (1999). *National Board Certification*. Retrieved 27 March, 2000, from <http://www.state.ct.us/sde/cert/nbcert1.htm>
- Statistics Toolbox. (2003). *Kruskalwallis*. Retrieved 1 Nov, 2003, from <http://www.mathworks.com/access/helpdesk/help/toolbox/statskruskalwallis.shtml>
- Stedman, L. C. (1996). Respecting the evidence: The achievement crisis remains real. *Education Policy Analysis Archives*, 4(7), 34.
- Sykes, G., & Plastrik, P. (1993). *Standards setting and educational reform: Trends and Issues Paper Number 8*. Washington, DC: National Council for Accreditation of Teacher Education (NCATE).
- Taskforce on the Review of Teacher Education. (2001). *Report of the Taskforce on the Review of Teacher Education*. Sydney: NSW Government.
- Teacher Quality and Educational Leadership Taskforce. (2003). *A National Framework for Professional Standards for Teaching*. Melbourne: MCEETYA.
- Teacher Training Agency. (1998). *National standards for qualified teacher status*: Teacher Training Agency.
- Teacher Training agency. (Date unknown). *National Standards*. Retrieved 20 April, 2000
- Teacher Training Agency. (Date Unknown). *The Teacher Training Agency*. Retrieved 20 April, 2000
- Tell, C. (1998). Whose curriculum? A conversation with Nicholas Tate. *Educational Leadership*, 56(2).
- Tennessee State Board of Education. (1997). *Framework for evaluation and professional growth*. Nashville: Office of Accountability and Assessment.
- Terwilliger, J. S. (1997). *Portfolios and classroom assessment: Some claims and questions*. U.S.; Minnesota.

- Texas Education Agency. (1972). *Revised 1972 organization, procedures and standards for approval of teacher education programs in Texas*. Austin: Texas Education Agency, Austin. Div. of Teacher Education and Certification.
- The Australian Association of Mathematics Teachers Inc. (2002). *Standards for Excellence in Teaching Mathematics in Australian Schools*. Adelaide.
- The Benchmarking Network. (1999). *Description of Services and Statement of Qualifications: What is Benchmarking*. Retrieved 7 July, 1999, from <http://www.well.com/user/benchmark/Files/General.html>
- The National Commission on Teaching and America's Future. (1996). *What matters most: Teaching for America's future*, from <http://www.tc.columbia.edu/teachcomm/what.html>
- Thompson, R. (1999). *Appraising beginning teachers: Principals' conceptions of competence*. Unpublished PhD Thesis, Queensland University of Technology.
- Tom, A. R. (2000, January 27-28). *Teacher education reform in the United States: Thrusts, assumptions, and implications*. Paper presented at the Symposium: Repositioning Teacher Education, Sydney University.
- Training and Development Directorate. (1999). *Promoting Teacher Professionalism*. Retrieved 20 July, 2000, from <http://www.det.nsw.edu.au/policy/professionalism>
- U.S. Department of Education. (1996). *Standards: What are they? Improving America's School: A Newsletter on Issues in School Reform*(Spring).
- US Department of Education. (1998). *Promising practices: New ways to improve teacher quality*: US Department of Education.
- US Food and Drug Administration. (1999). *How to report Adverse Reactions and other problems with products regulated by FDA*. Retrieved 7 March, 2000, from <http://www.fda.gov/opacom/backgrounders/problem.html>
- Wang, J. (2001). Contexts of Mentoring and Opportunities for Learning To Teach: A Comparative Study of Mentoring Practice. *Teaching and Teacher Education*, 17(1), 51-73.
- Ward, J. G. (1968, March 27-31). *Teachers, professionalism, and teacher training*. Paper presented at the Annual Meeting of the American Educational Research Association, Toronto, Ontario, Canada.
- Welsh, M. (1998). Conceptualisations of quality in federal policy development and program initiatives in the area of school education. *Australian College of Educational Administration*.
- Williams, D., O'Donnell, B., & Sinclair, C. (1997, 5-8 July). *A model for Australia to register teachers, accredit teacher education and provide advanced certification for teachers*. Paper presented at the 27th Annual Conference of the Australian Teacher Education Association (ATEA), Yeppoon, Queensland, Australia, 5-8 July, <http://www.ed.cqu.edu.au/ATEA>.
- Wood, R., & Power, C. (1987). Aspects of the competence-performance distinction: Educational, psychological and measurement issues. *Journal of Curriculum Studies*, 19, 409-424.

- Wright, B. D. (1998). Model selection: Rating Scale or Partial Credit? *Rasch Measurement Transactions*, 12(3), 641-642.
- Wright, B. D., & Linacre, J. M. (1989). Observations are always ordinal; measurements, however, must be interval. *Archives of Physical Medicine and Rehabilitation*, 70, 857-860.
- Wright, B. D., & Masters, G. N. (1982). *Rating Scale Analysis: Rasch Measurement*. Chicago: Mesa Press.
- Yu, R. (1999). *New professionalism: Teaching for employability in the 21st Century*. Paper presented at the New Professionalism in Teaching: Teacher Education and Teacher Development in a Changing World Conference, Hong Kong.
- Zeichner, K. M. (2003). The adequacies and inadequacies of three current strategies to recruit, prepare and retain the best teachers for all students. *Teachers College Record*, 105(3), 490-519.

## **APPENDIX 1**

### **SURVEY INSTRUMENT AND SUPPORTING DOCUMENTATION**

Survey respondents were provided with the following documentation:

- an information sheet,
- instruction sheet
- survey instrument.



**A COMPARATIVE ANALYSIS OF TEACHERS' PERCEPTIONS OF PROFESSIONAL TEACHING STANDARDS AND TEACHING PRACTICES: IMPLICATIONS FOR PROFESSIONAL TEACHING STANDARDS DEVELOPMENT AND TEACHER CERTIFICATION**

***INFORMATION SHEET FOR PARTICIPANTS***

***Doctoral Student:***

Bruce Mowbray, PhD Candidate, NSW Department of Education and Training, Tel: 902) 9561 8139

***Supervisors:***

Professor John Pegg, Director, Centre for Cognition Research in Learning and Teaching, School of Curriculum Studies, UNE, Armidale, NSW. Tel: (02) 6773 5070

Dr. Ted Redden, Head of School, School of Curriculum Studies, UNE, Armidale, NSW.

Tel: (02) 6773 5068

**Background**

*Quality Matters*, the report of the Ramsey Review of Teacher Education in NSW, released in November 2000, recommended that teachers should have the same institutional structures as other recognised professions. A central tenet of recognised professions is the capacity to be self-regulating, with members of the profession assuming direct responsibility for setting and monitoring their own standards of practice. Examples of professional teaching standards are available nationally, and internationally. The shape and form of such standards differ as a consequence of different value judgements about the knowledge, skills, attitudes and values believed necessary for teachers to successfully manage the multiplicity of roles they fulfil within the contexts in which they work. Little attention has been paid by education authorities to alignment of these standards to models of teachers' development.

The attached survey is part of a larger PhD study. More than 600 reports on student and beginning teachers have been analysed already in a preliminary study to identify aspects of teaching practice valued by those responsible for completing the reports. The second part of this study involving this survey is designed to investigate the value teachers place on theoretical models of standard. The survey is based on a synthesis of existing standards developments undertaken by Brock and Mowbray (1998) updated to include more recent developments and specific Department of Education and Training teacher appraisal and certification documentation and, teaching and learning, assessment and reporting support materials.

**What will be required of the teachers if they wish to participate in this study?**

It is envisaged that this research will:

- identify from the reports on practising and certified teachers aspects of teachers' development over the period from the end of their training until their certification
- report on the extent to which expectations of beginning teachers as articulated in the conception of professional standards reflect this development
- report on the profession's view of theoretical constructs of professional standards
- compare and contrast the profession's perceptions (survey) with what is evident from practice (reports).

You are not required to provide any identifying information. The survey should take no more than twenty minutes to complete and individual returns will remain confidential to the researcher. Should you wish to receive a copy of the survey results, please enter your e-mail details on the **separate sheet provided to your Principal**.



Your participation will be limited to these above components and the **data gathering is scheduled for completion by the end of the March 2002**. Please note that should you wish to withdraw from any or all of these activities once consent has been given, you will be allowed to do so without penalty.

***If you agree to participate in this study, what do you need to do?***

Your participation in this study will be indicated by your completion of the Survey attached. **Please forward the completed survey in the prepaid envelope and post**. Please retain this Information Sheet for your records. You have the right to withdraw from the project without penalty and at any time.

***Privacy and confidentiality***

At all times the right of privacy, confidentiality and respect for the participants will be observed. This project has been approved by the Human Research Ethics Committee of the University of New England (Approval No. HEO1/220). Data from this study will be stored for up to 5 years after this study in locked computer files at the University of New England and will be destroyed thereafter. Results from this study may be published in scientific journals, conference papers, educational literature and PhD thesis.

If you have any further questions or concerns about this study, you can contact me on the phone number at the top of the first page of this sheet.

Thank you for agreeing to assist in this research and for your time, and the benefit of your professional expertise. Your participation in this research will assist in the development of professional standards that closely more reflect teachers' understanding of their practice and development.

*Should you have any complaints concerning the manner in which this research is conducted, please contact the Research Ethics Officer at the following address:*

***Research Services***

University of New England

Armidale, NSW 2351.

Telephone: (02) 6773 3449 Facsimile (02) 6773 3543

Email: [Ethics@metz.une.edu.au](mailto:Ethics@metz.une.edu.au)

Yours sincerely,

***Bruce Mowbray***

## TEACHERS' PERCEPTIONS OF THEIR PRACTICE

### SURVEY INSTRUMENT

**Purpose:**

This survey is part of a larger doctoral study comparing teachers' understanding of their practice with theoretical models of professional standards. It is designed to evaluate teachers' perceptions of a theoretical standards model.

**INFORMATION ABOUT THE SURVEY**

This survey requires you to rate your perception of each element of practice in a theoretical standards model.

The elements of practice are arranged under seven broad headings. They are numbered. The dash points are elaborations of how teachers might demonstrate competence within a particular element of practice. They are intended to be comprehensive but not inclusive of all aspects of practice.

There are three rating scales from 1-5, addressing the following questions:

- A: To what extent are these expectations of teachers realisable?
- B: How well prepared are teachers to meet these expectations at the end of their first year of teaching?
- C: What level of priority should be given to teacher development in this/these areas?

**INSTRUCTIONS FOR COMPLETING THE SURVEY:**

Please complete Part A below to provide some background information about yourself before proceeding to the main survey questions in Part B. To complete Part B circle the number of your choice as in the following example.

**EXAMPLE:**

<b>AREAS OF SPECIFIC SKILL, KNOWLEDGE AND UNDERSTANDING</b>	Rate your answer on the scale below: 1 (least) - 5 (greatest)		
	A  To what extent are these expectations of teachers realisable?	B  How well prepared are teachers to meet these expectations at the end of their first year of teaching?	C  What level of priority should be given to teacher development in this/these areas?
Teachers: 1.1 demonstrate high levels of care and commitment to their students	1 2 3 <b>4</b> 5	1 <b>2</b> 3 4 5	1 2 3 4 <b>5</b>
They do this by: <ul style="list-style-type: none"> <li>- building positive relationships</li> <li>- modelling the curiosity, enthusiasm and joy of learning</li> <li>- helping students to appreciate their own identity, to learn more about their cultural heritage, and to build self-esteem</li> <li>- displaying concern for student character, peer relationships and personal aspirations</li> </ul>	<p><i>NOTE: The text adjacent is intended to explain how teachers might demonstrate the particular understandings or skills. It is a guide only and not intended to exclude other ways of demonstrating the particular understandings or skills.</i></p>		

**Part A**

This section asks for some background information about you.

Please place a tick (✓) in the appropriate box

1. Number of years you have been teaching

(Include full-time, part-time or casual teaching or working in an educational environment)

0-1 year  2-6 years  6-20 years  More than 20 years

2. Age

20-25 years  26-30years  31-40 years  41 + years

3. School stage

Primary schools  Secondary schools

4. Position in school

Classroom teacher   
Head Teacher/Executive Teacher/Assistant Principal   
Deputy Principal/Principal

5. Mentoring and supervision responsibilities (during the last two years)

I have mentored or supervised student teachers

I have been responsible for supervising or mentoring beginning teachers

## Part B

### PROFESSIONAL KNOWLEDGE, UNDERSTANDING SKILLS AND VALUES

#### 1. Commitment to students and their development

AREAS OF SPECIFIC SKILL, KNOWLEDGE, UNDERSTANDING AND VALUES	Rate your answer on the scale below: 1 (least) - 5 (greatest)		
	A  To what extent are these expectations of teachers realisable?	B  How well prepared are teachers to meet these expectations at the end of their first year of teaching?	C  What level of priority should be given to teacher development in this/these areas?
Teachers: 1.1 demonstrate high levels of care and commitment to their students	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by - building positive relationships - modelling the curiosity, enthusiasm and joy of learning - helping students to appreciate their own identity, to learn more about their cultural heritage, and to build self-esteem - displaying concern for student character, peer relationships and personal aspirations			
1.2 treat all students justly and equitably, and with an appropriate sense of good humour	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by - recognising and appreciating the range of values held by individuals as well as within families, groups, cultures, and the wider school community - accessing, when needed, the specialised school and community resources that can be engaged for their students' benefit			
1.3 know, critically review, and use as appropriate, a range of educationally sound theories	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: - developing programs for students that incorporate knowledge and understanding of human development and learning theory - addressing learning, cultural, spiritual, and language differences, and family situations			
1.4 recognise that they can enhance students' potential as lifelong and independent learners by enabling them to take responsibility for their own learning	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: - encouraging students to become active, inquisitive and discerning citizens - creating opportunities for students to understand, facilitate and respond to change - reinforcing the rights and responsibilities students have as citizens			

<b>AREAS OF SPECIFIC SKILL, KNOWLEDGE, UNDERSTANDING AND VALUES</b>	Rate your answer on the scale below: 1 (least) - 5 (greatest)		
	A  To what extent are these expectations of teachers realisable?	B  How well prepared are teachers to meet these expectations at the end of their first year of teaching?	C  What level of priority should be given to teacher development in this/these areas?
1.5 respect the dignity and individualism of students	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: <ul style="list-style-type: none"> <li>- creating an environment of respect and understanding</li> <li>- relating positively to all students</li> <li>- valuing the social, cultural and ethnic differences that young people bring to learning</li> <li>- recognising both the rights and responsibilities of the young people they teach</li> <li>- acknowledging the position of trust and confidentiality he or she has</li> <li>- exercising professional integrity and judgement</li> </ul>			
1.6 ensure that their goals for student learning are consistent with those set out in relevant state and nationally agreed objectives such as, for example, the Board of Studies syllabuses and the <i>Common and Agreed National Goals for Schooling in Australia</i> .	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

**2. Knowledge and understanding of what is taught and the disciplines upon which teaching is based**

<b>AREAS OF SPECIFIC SKILL, KNOWLEDGE, UNDERSTANDING AND VALUES</b>	Rate your answer on the scale below: 1 (least) - 5 (greatest)		
	A  To what extent are these expectations of teachers realisable?	B  How well prepared are teachers to meet these expectations at the end of their first year of teaching?	C  What level of priority should be given to teacher development in this/these areas?
Teachers: 2.1 demonstrate their knowledge, skills, understanding and values of the subject(s) they teach	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: - being able to explicate the major concepts and principles underpinning the(se) subject(s) - recognising how the knowledge and skills of the subject are utilised and valued in society - being aware of how the knowledge in their subject area is created and linked to other subjects			
2.2 model the values of the scholar-teacher	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: - acknowledging that beliefs and assumptions about knowledge within subjects and disciplines are often contested and change over time - promoting learning as being fundamental to personal development as wells as broad human endeavours			
2.3 are advocates for the subjects they teach	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: - being enthusiastic about what they teach - acknowledging the roles that the knowledge, skills, understanding and values of the subject(s) they teach play in developing young people socially and intellectually as well rounded citizens			
2.4 maintain the currency of their content knowledge	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: - undertaking further education and training either informal in the workplace or through formal study.			

**3. Expert in the ‘art and science’ of teaching**

<b>AREAS OF SPECIFIC SKILL, KNOWLEDGE, UNDERSTANDING AND VALUES</b>	Rate your answer on the scale below: 1 (least) - 5 (greatest)		
	A  To what extent are these expectations of teachers realisable?	B  How well prepared are teachers to meet these expectations at the end of their first year of teaching?	C  What level of priority should be given to teacher development in this/these areas?
Teachers: 3.1 are able to communicate to others the knowledge, understanding, skills and values of the subjects they teach	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: - demonstrating their knowledge and understanding of subject content pedagogic knowledge - making knowledge accessible to students - providing a range of approaches to understanding the concepts and principles of the learning area - linking learning to everyday life experiences and to prior learning - shaping instruction so that it is helpful to students to learn in a variety of ways			
3.2 create and support learning within their classrooms	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: - holding high expectations of all students while engaging them and maintaining their interest in learning - challenging students while providing opportunities for students to experience success - establishing a clear purpose for learning which is understood by students - fostering the desire to learn about self, others and the world in which they live - recognising the effects of both good and bad teaching on learning			
3.3 manage the learning environments in which they work	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: - managing time for instruction and learning including smooth transitions between lessons - organising tasks and routines for individuals and groups to engage students productively - structuring interaction amongst students so that shared learning, as well as individual learning occurs			

<b>AREAS OF SPECIFIC SKILL, KNOWLEDGE, UNDERSTANDING AND VALUES</b>	Rate your answer on the scale below: 1 (least) - 5 (greatest)		
	A  To what extent are these expectations of teachers realisable?	B  How well prepared are teachers to meet these expectations at the end of their first year of teaching?	C  What level of priority should be given to teacher development in this/these areas?
3.4 are flexible in their approach to teaching	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: <ul style="list-style-type: none"> <li>- using a variety of teaching and learning strategies, activities and resources</li> <li>- using and evaluating information technologies to assist their own teaching and advance the learning of their students</li> <li>- adapting the methods of inquiry, content knowledge and skills required in the curriculum to their teaching environments when feedback indicates this is necessary</li> <li>- attending to the individual literacy and numeracy development needs of their students</li> <li>- showing persistence in seeking approaches and strategies for students having difficulty learning or needing extension</li> <li>- providing opportunities for young people to innovate and take risks</li> </ul>			
3.5 plan for individual student's learning	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: <ul style="list-style-type: none"> <li>- applying knowledge of student backgrounds, experiences and learning styles, including those of indigenous students and others from non-English speaking backgrounds</li> <li>- applying knowledge of how students develop physically, socially and cognitively</li> <li>- responding to students' social, cultural and intellectual differences and special learning needs</li> <li>- adapting teaching practice based on student achievement.</li> </ul>			



**4. Assessing and reporting the learning outcomes of students**

<b>AREAS OF SPECIFIC SKILL, KNOWLEDGE, UNDERSTANDING AND VALUES</b>	Rate your answer on the scale below: 1 (least) - 5 (greatest)		
	A  To what extent are these expectations of teachers realisable?	B  How well prepared are teachers to meet these expectations at the end of their first year of teaching?	C  What level of priority should be given to teacher development in this/these areas?
Teachers: 4.1 understand that the primary purpose of assessment is to provide information on student achievement and progress to inform future teaching and learning	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: - providing clear and direct links to expected learning outcomes - ensuring assessment is fair, valid and reliable			
4.2 integrate student assessment and reporting into teaching and learning	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: - utilising a balanced comprehensive and varied range of assessment strategies, including formal tests, portfolios, performance assessment, self assessment, peer assessment - engaging the learners in the assessment process through cooperative interaction between teachers and students and students themselves - providing students with explicit feedback on their learning - ensuring opportunities to recognise the individual achievement and progress of all students - ensuring time efficient and manageable strategies and timely reporting of achievements			
4.3 convey meaningful and useful information to students and parents	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: - synthesising, and aggregating a range of assessment information to track student achievement against a standards framework - keeping a continuous and comprehensive record of group and individual achievement - making consistent judgments about student learning outcomes - being able to explain clearly the relationship between student performance and learning outcomes to parents.			

**5. Managing safe, secure and productive learning environments**

<b>AREAS OF SPECIFIC SKILL, KNOWLEDGE, UNDERSTANDING AND VALUES</b>	Rate your answer on the scale below: 1 (least) - 5 (greatest)		
	A  To what extent are these expectations of teachers realisable?	B  How well prepared are teachers to meet these expectations at the end of their first year of teaching?	C  What level of priority should be given to teacher development in this/these areas?
Teachers: 5.1 establish classroom management strategies that support student learning	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: <ul style="list-style-type: none"> <li>- creating positive and enriching environments to enhance learning</li> <li>- establishing orderly, friendly learning environments in which students are treated with consistency and fairness</li> <li>- managing the distraction to learning that arise within the classroom and other learning environments</li> <li>- maintaining routines and practices that reinforce student cooperation with one another, mutual respect and helpfulness while promoting social and group responsibilities</li> <li>- establishing high expectations that value and promote the learning of individual students</li> <li>- organising time and space to enrich the learning environment</li> </ul>			
5.2 create safe and secure environments for young people	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: <ul style="list-style-type: none"> <li>- building trust with students, parents and the community</li> <li>- exercising their responsibility for the 'duty-of-care' of their students, including issues of 'child protection' by abiding by all statutory, legal and ethical obligations incumbent on teachers and the mandatory reporting requirements in cases of child abuse</li> <li>- understanding their legal responsibilities extend beyond this duty of care to Occupational Health and Safety and workplace safety legislation</li> </ul>			

**6. Reflecting and continuously enhancing their own learning**

<b>AREAS OF SPECIFIC SKILL, KNOWLEDGE, UNDERSTANDING AND VALUES</b>	Rate your answer on the scale below: 1 (least) - 5 (greatest)		
	A  To what extent are these expectations of teachers realisable?	B  How well prepared are teachers to meet these expectations at the end of their first year of teaching?	C  What level of priority should be given to teacher development in this/these areas?
Teachers: 6.1 continuously reflect on their practice and its effect on student learning	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: <ul style="list-style-type: none"> <li>- evaluating their practice to determine if needs of individuals and groups of students are being met</li> <li>- appraising their teaching in terms of its creativity, innovation and results</li> <li>- modifying and refine teaching practice using a variety of sources and resources.</li> <li>- consulting colleagues and looking for fresh ideas of what might be done to enhance programme effectiveness</li> <li>- responding to feedback from professional supervisor(s), peers, students and their families in an open self-critical manner</li> <li>- maintaining useful records of program and self-evaluation</li> </ul>			
6.2 are lifelong learners	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: <ul style="list-style-type: none"> <li>- engaging in a variety of learning opportunities both individual and collaborative that are integrated into practice for the benefit of student learning</li> <li>- recognising that continuous professional growth is an integral part of teaching</li> <li>- knowing that teaching and professional growth are influenced by personal, social, and educational contexts</li> <li>- understanding that teaching practice is enhanced by many forms of knowledge, ways of knowing, and ways to access that knowledge</li> <li>- recognising that teacher learning is directly related to student learning</li> <li>- acting as role models who demonstrate lifelong learning</li> <li>- drawing on and contributing, where appropriate, to various forms of educational research</li> <li>- reading widely across areas of social cultural or political change</li> </ul>			

<b>AREAS OF SPECIFIC SKILL, KNOWLEDGE, UNDERSTANDING AND VALUES</b>	Rate your answer on the scale below: 1 (least) - 5 (greatest)		
	A  To what extent are these expectations of teachers realisable?	B  How well prepared are teachers to meet these expectations at the end of their first year of teaching?	C  What level of priority should be given to teacher development in this/these areas?
6.3 take responsibility for their own professional growth	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: <ul style="list-style-type: none"> <li>- seeking out opportunities to enhance content knowledge and teaching skills</li> <li>- understanding that professional learning is most effective when it is job-embedded, relevant and supported by others within the educational community</li> <li>- anticipating and planning the kind of learning they will need to respond to a variety of educational contexts.</li> </ul>			

**7. Leadership in communities of learning**

<b>AREAS OF SPECIFIC SKILL, KNOWLEDGE, UNDERSTANDING AND VALUES</b>	Rate your answer on the scale below: 1 (least) - 5 (greatest)		
	A  To what extent are these expectations of teachers realisable?	B How well prepared are teachers to meet these expectations at the end of their first year of teaching?	C What level of priority should be given to teacher development in this/these areas?
Teachers:			
7.1 seek to create learning communities	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: <ul style="list-style-type: none"> <li>- providing opportunities for students to share their learning with their classmates, schoolmates, parents and the community</li> <li>- learning with and from their students, colleagues, and others</li> <li>- inviting parents and members of the community to share their knowledge and skills in supporting classroom and school activities</li> <li>- working collaboratively with other professionals on instructional policy, curriculum development and staff development.</li> </ul>			
7.2 demonstrate educational leadership	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: <ul style="list-style-type: none"> <li>- promoting learning within their classrooms, and the wider school community and beyond</li> <li>- acting both as team members and as team leaders</li> <li>- motivating and inspiring through sharing their vision</li> <li>- being knowledgeable about specialised school and community resources that can be engaged for their students' benefit, and are skilled at employing such resources as needed</li> </ul>			
7.3 sustain learning through their capacity to promote change and innovation	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: <ul style="list-style-type: none"> <li>- engaging others through shared problem-solving and conflict resolution</li> <li>- effecting change through decision-making, initiating change, and evaluating and communicating results</li> </ul>			
7.4 enhance the professional status of teachers within the community	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
They do this by: <ul style="list-style-type: none"> <li>- acting ethically</li> <li>- demonstrating the highest possible standards in their public life and avoiding action that could bring the profession into disrepute.</li> </ul>			

**Please return the completed survey form in envelope provided**

For further information telephone:

Bruce Mowbray  
02 9561 8139

## APPENDIX 2

# UNIVERSITY OF NEW ENGLAND STUDENTTEACHER PRACTICE TEACHING REPORTING PRO-FORMAS



Faculty of Education, Health and Professional Studies

---

---

## ***PRACTICE TEACHING REPORT FORM***

### ***BACHELOR OF TEACHING***

---

---

STUDENT'S SURNAME: \_\_\_\_\_ GIVEN NAMES: \_\_\_\_\_  
SCHOOL: \_\_\_\_\_  
DATE OF *PRACTICUM*: from \_\_\_\_\_ to \_\_\_\_\_  
YEAR LEVEL (class): \_\_\_\_\_  
SUPERVISING TEACHER(S): \_\_\_\_\_

---

---

#### **PART A: OVERALL ASSESSMENT**

---

---

The Stage 1 Practice Teaching Report was given to student , or faxed to the School Experience Office

I certify that this student has completed the period of practice teaching shown above and assess her/him, at this stage of professional development as:

Satisfactory

Unsatisfactory

(please tick one box only to indicate the overall assessment)

Supervising Teacher's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Student's Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(I have read this report)

Principal's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Please make a copy of this report and send the copy to the School Experience Office.  
Give the ORIGINAL to the student teacher.**

STUDENT'S SURNAME: \_\_\_\_\_ GIVEN NAMES: \_\_\_\_\_

**PART B: SPECIFIC SKILLS REPORT**

**1. PLANNING AND EVALUATION**

	E	V	S	A	U	COMMENTS
	S	S	N	S		
a. Suitable written lesson plans						
b. Clear objectives/outcomes						
c. Content and strategies well-prepared						
d. Knowledge of subject matter						
e. Awareness of techniques of student assessment						
f. Evidence of lesson evaluation						
e. Evidence of self evaluation						

**2. CLASSROOM SKILLS**

	E	V	S	A	U	
	S	S	N	S		
a. General classroom management						
b. Demonstrates responsiveness to changing demands of the classroom						
c. Awareness of and response to individual students needs						
d. Confidence in teaching situations						
e. Variety of lesson presentation						
f. Encouraging student participation						
g. Rapport with students						
h. Language, speech and spelling competence						
i. Use of voice						
j. Use of questioning						
k. Ability to explain						
l. Ability to lead discussions						
m. Use of chalkboard/writing						
n. Use of aids, materials						

**3. PROFESSIONAL ATTRIBUTES**

	E	V	S	A	U	
	S	S	N	S		
a. Evidence of collection of observations and resources from general school environment						
b. Reliability and punctuality						
c. Appearance and dress						
d. Initiative						
e. Involvement in school activities						
f. Interpersonal relationships with staff						
g. Willingness to accept advice						
h. Attitude to teaching						

\* Refer to back page for reference when filling in the above.







*Faculty of Education, Health and Professional Studies*

---



---

**GRADUATE DIPLOMA IN EDUCATION  
PRACTICE TEACHING REPORT FORM**

---



---

STUDENT'S SURNAME: \_\_\_\_\_ GIVEN NAME/S: \_\_\_\_\_

SCHOOL: \_\_\_\_\_

DATE OF PRACTICUM: from \_\_\_\_\_ to \_\_\_\_\_

SUPERVISING TEACHER(S): \_\_\_\_\_

PRACTICUM: 1  2  or other

INTERNAL  or EXTERNAL

PRIMARY

OR

SECONDARY SPECIFIC CURRICULUM SUBJECT(S) \_\_\_\_\_

---



---

**PART A: OVERALL ASSESSMENT**

---



---

Interim report was given to student , or faxed to the School Experience Office

I certify that this student has completed the period of practice teaching shown above and assess her/him, at this stage of professional development as:

Satisfactory  Unsatisfactory

Supervising Teacher's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Student's Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(I have read this report)

Principal's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Please make a copy of this report and send the copy to the School Experience Office. Give the ORIGINAL to the student teacher.**

**PART B: SPECIFIC SKILLS REPORT**

The Outcomes in this section correspond to the more detailed Outcome and Indicator statements in the Handbook, please refer to these in completing comments and grading.

**1. TEACHING PRACTICE**

- a. Knows the subject area in terms of content and processes s/he teaches and is able to justify its value
- b. Plans purposeful teaching programs to achieve realistic and specific pupil learning outcomes
- c. Structures learning tasks effectively
- d. Uses an appropriate and varied repertoire of teaching strategies
- e. Demonstrates flexibility and responsiveness within the classroom
- f. Know the purpose, nature and uses of some strategies for assessment
- g. Employs appropriate levels of oral and written language in all communication

COMMENTS

SATISFACTORY       NEEDS IMPROVEMENT

**2. UNDERSTANDING AND RESPONDING TO PUPILS**

- a. Recognises and responds to individual differences among pupils
- b. Develops positive relationships with pupils, which encourage their participation in learning
- c. Is aware of and responsive to situations of potential discrimination


SATISFACTORY       NEEDS IMPROVEMENT

**3. MANAGING PUPIL BEHAVIOUR**

- a. Maintains a classroom atmosphere conducive to learning:
  - i) selects strategies to establish and maintain focus
  - ii) establishes and communicates clear expectations
  - iii) shows an awareness of and responsiveness to the classroom
  - iv) encourages positive student behaviour
  - v) within lessons, employs strategies that involve clear instructions, effective routines, questioning and active involvement
- b. Applies effective sanctions to students who interfere with teaching and learning
- c. Communicates appropriately and effectively with pupils


SATISFACTORY       NEEDS IMPROVEMENT

**4. UNDERSTANDING AND MEETING PROFESSIONAL RESPONSIBILITIES**

- a. Has developed an understanding of the working life of the whole school and has responded appropriately to its demands
- b. Establishes and maintains effective interpersonal relationships with pupils, school personnel and others
- c. Understands the framework of law and regulations which affects teachers work
- d. Strives to improve by personal practice the quality of teaching and learning
- e. Thoughtfully and constructively reflects on own and others' teaching practices
- f. Demonstrates professional and ethical behaviour consistent with teaching.


SATISFACTORY       NEEDS IMPROVEMENT

\* Refer to back page for reference when filling in the above.



---

---

## NOTES TO SUPERVISING TEACHERS

---

---

The points listed below are for your information and guidance in filling in this report.

1. Please refer to the relevant sections of the School Experience Handbook before completing the Report. In particular the Outcome and Indicator statements are linked directly to this report.
2. After completing all sections of this Report, attach a copy of it to the Claim Form and Student Attendance Register and return them to the University immediately after the practicum. Please ensure that the **original form is given to the student teacher and a copy is sent to the School Experience Office.**
3. AN EXPLANATION OF REQUIREMENTS OF PART A, B AND C OF THIS FORM.

**In Part A: OVERALL ASSESSMENT**

**SATISFACTORY:** The student has met the expected standard in most of the Outcome areas described for this stage in their professional development.

**UNSATISFACTORY:** The student is generally weak with some serious deficiencies in meeting the Outcomes of the practicum. The supervising teacher and the Principal or Head of Department believes that the student requires an additional practicum to attempt to establish their competence for teaching or that they have not demonstrated a suitability for teaching.

**If a grade of Unsatisfactory is to be given, the School Principal or the Head of Department, and the Director of School Experience at the University on (02) 6773 3802, 6773 3803, should be consulted prior to awarding the grade. An indication of the possible assessment of Unsatisfactory should have been advised in the Interim Report faxed to the School Experience Office at the mid point of the practicum.**

**In Part B: SPECIFIC SKILLS REPORT**

The Areas of Competence and the associated Outcomes are further described in the Outcome and Indicator statements in the School Experience Handbook and should be referred to in completing this section.

**NOTE:** these statements vary between Practicum I and II.

**In Part C: GENERAL REPORT**

Section for a summarising comment from the supervising teacher, highlighting any issues identified in Part B. Comments are to be made appropriate to the stage of the students professional development. Additional comments from the student teacher and the Principal are appreciated but optional.

A signature from the student teacher and the Principal is required at the conclusion of the report

## **APPENDIX 3**

### **SUGGESTED CRITERIA FOR THE ASSESSMENT OF PROBATIONARY TEACHERS**

#### **DEPARTMENT OF EDUCATION AND TRAINING**

##### **Teaching Skills**

- thoughtful, adequate lesson preparation;
- capacity to cater for students' individual differences;
- acceptable standards of documentation;
- continuing critical evaluation of student progress. Development of sound follow-up techniques;
- use of a variety of appropriate teaching methods;
- ability to create and maintain students' interest and stimulate response;
- capacity for effective classroom management techniques. Generation of student/teacher mutual respect;
- development of a pleasant learning environment.

##### **Interpersonal Relationships**

- cooperation and responsibility in implementing school and subject policies;
- ability to work harmoniously as a member of a team;
- ability to accept and implement advice;
- punctuality – to school, to class and to duties;
- rapport with students, staff and others (including parents);
- cooperation and involvement in school activities.

##### **Professional and Personal Qualities**

- commitment, enthusiasm and general attitude;
- initiative, resourcefulness and self-reliance;
- creativeness and flexibility
- self-criticism and self discipline;
- professional ethics;
- commitment to implementing student welfare and child protection programs.

(Extract from the Teachers Handbook Section 1.2.3.8.  
Department of Education and Training (2001))

## APPENDIX 4

### THEORETICAL STANDARDS FRAMEWORK

#### Domains and elements of the theoretical standards framework

---

1. Commitment to students and their development

Teachers:

- 1.1 demonstrate high levels of care and commitment to their students
  - 1.2 treat all students justly and equitably, and with an appropriate sense of good humour
  - 1.3 know, critically review, and use as appropriate, a range of educationally sound theories
  - 1.4 recognise that they can enhance students' potential as lifelong and independent learners by enabling them to take responsibility for their own learning
  - 1.5 respect the dignity and individualism of students
  - 1.6 ensure that their goals for student learning are consistent with those set out in relevant state and nationally agreed objectives such as, for example, the Board of Studies syllabuses and the Common and Agreed National Goals for Schooling in Australia.
- 

2. Knowledge and understanding of what is taught and the disciplines upon which teaching is based

Teachers:

- 2.1 demonstrate their knowledge, skills, understanding and values of the subject(s) they teach
  - 2.2 model the values of the scholar-teacher
  - 2.3 are advocates for the subjects they teach
  - 2.4 maintain the currency of their content knowledge.
- 

3. Expert in the 'art and science' of teaching

Teachers:

- 3.1 are able to communicate to others the knowledge, understanding, skills and values of the subjects they teach
  - 3.2 create and support learning within their classrooms
  - 3.3 manage the learning environments in which they work
  - 3.4 are flexible in their approach to teaching
  - 3.5 plan for individual student's learning.
- 

4. Assessing and reporting the learning outcomes of students

Teachers:

- 4.1 understand that the primary purpose of assessment is to provide information on student achievement and progress to inform future teaching and learning
  - 4.2 integrate student assessment and reporting into teaching and learning
  - 4.3 convey meaningful and useful information to students and parents.
- 

5. Managing safe, secure and productive learning environments

Teachers:

- 5.1 establish classroom management strategies that support student learning
  - 5.2 create safe and secure environments for young people.
- 

6. Reflecting and continuously enhancing their own learning

Teachers:

- 6.1 continuously reflect on their practice and its effect on student learning
  - 6.2 are lifelong learners
  - 6.3 take responsibility for their own professional growth.
- 

7. Leadership in communities of learning

Teachers:

- 7.1 seek to create learning communities
  - 7.2 demonstrate educational leadership
  - 7.3 sustain learning through their capacity to promote change and innovation
  - 7.4 enhance the professional status of teachers within the community.
- 

After Table 2.4

## APPENDIX 5

### RASCH STATISTICS-ACHIEVABILITY QUESTION

-----  
Item Estimates (Thresholds). 9/12/ 3 21:16  
all on Achievability (N = 354 L = 27 Probability Level= .50).  
-----

Summary of item Estimates  
=====

Mean	.00
SD	.39
SD (adjusted).	.37
Reliability of estimate	.91

Fit Statistics  
=====

Infit Mean Square		Outfit Mean Square	
Mean	1.01	Mean	1.02
SD	.20	SD	.20
Infit t		Outfit t	
Mean	.07	Mean	.16
SD	2.35	SD	1.89

0 items with zero scores  
0 items with perfect scores  
=====

-----  
Case Estimates 9/12/ 3 21:16  
all on Achievability (N = 354 L = 27 Probability Level= .50).  
-----

Summary of case Estimates  
=====

Mean	1.21
SD	1.10
SD (adjusted).	1.07
Reliability of estimate	.93

Fit Statistics  
=====

Infit Mean Square		Outfit Mean Square	
Mean	1.03	Mean	1.02
SD	.50	SD	.50
Infit t		Outfit t	
Mean	-.10	Mean	-.05
SD	1.75	SD	1.42

0 cases with zero scores  
4 cases with perfect scores  
=====



-----  
Item Fit 9/12/ 3 21:16  
all on Achievability (N = 354 L = 27 Probability Level= .50).  
-----

INFIT

MNSQ	.53	.63	.77	1.00	1.30	1.60	1.90
1 item 1			*				.
4 item 4			.	*			.
7 item 7			.	*			.
10 item 10			.	*			.
13 item 13			.	*			.
16 item 16			.			*	.
19 item 19			.		*		.
22 item 22			.		*		.
25 item 25			.		*		.
28 item 28			.			*	.
31 item 31		*	.				.
34 item 34		*	.				.
37 item 37		.	*				.
40 item 40		.	*				.
43 item 43		.	.	*			.
46 item 46		.	.	*			.
49 item 49		.	*				.
52 item 52		.	.	*			.
55 item 55		.	.	*			.
58 item 58		.	.		*		.
61 item 61		.	*				.
64 item 64		.	.		*		.
67 item 67		.	.		*		.
70 item 70		.	.	*			.
73 item 73		.	*				.
76 item 76		.	*				.
79 item 79		.	.				*

=====

Item Estimates (Difficulty and Taus) In input Order 9/12/ 3 21:16  
all on Achievability (N = 354 L = 27 Probability Level= .50)

ITEM NAME	SCORE	MAX  SCR	DIFFCLTY	TAU/S				INFT MNSQ	OUTFT MNSQ	INFT t	OUTFT t
				1	2	3	4				
1 item 1	1062	1412	-.29 .07	-1.36 .09	-.83 .05	.34 .03	1.85 .03	.77	.77	-3.0	-2.4
4 item 4	1007	1408	-.03 .07	-1.36 .09	-.83 .05	.34 .03	1.85 .03	1.01	1.15	.2	1.5
7 item 7	864	1416	.62 .06	-1.36 .09	-.83 .05	.34 .03	1.85 .03	1.00	1.05	.0	.6
10 item 10	993	1412	.05 .07	-1.36 .09	-.83 .05	.34 .03	1.85 .03	.93	1.01	-.9	.2
13 item 13	1074	1408	-.38 .08	-1.36 .09	-.83 .05	.34 .03	1.85 .03	1.04	1.04	.5	.4
16 item 16	991	1412	.06 .07	-1.36 .09	-.83 .05	.34 .03	1.85 .03	1.27	1.30	3.2	2.8
19 item 19	1122	1412	-.63 .08	-1.36 .09	-.83 .05	.34 .03	1.85 .03	1.11	1.11	1.3	1.0
22 item 22	938	1412	.30 .07	-1.36 .09	-.83 .05	.34 .03	1.85 .03	1.09	1.16	1.1	1.7
25 item 25	1146	1408	-.80 .08	-1.36 .09	-.83 .05	.34 .03	1.85 .03	1.11	1.17	1.3	1.5
28 item 28	911	1412	.42 .07	-1.36 .09	-.83 .05	.34 .03	1.85 .03	1.28	1.30	3.4	2.9
31 item 31	1030	1404	-.16 .07	-1.36 .09	-.83 .05	.34 .03	1.85 .03	.80	.77	-2.7	-2.5
34 item 34	1100	1408	-.52 .08	-1.36 .09	-.83 .05	.34 .03	1.85 .03	.76	.75	-3.2	-2.5
37 item 37	1040	1408	-.19 .07	-1.36 .09	-.83 .05	.34 .03	1.85 .03	.84	.81	-2.0	-2.0
40 item 40	1007	1412	-.01 .07	-1.36 .09	-.83 .05	.34 .03	1.85 .03	.86	.88	-1.8	-1.3
43 item 43	863	1416	.63 .06	-1.36 .09	-.83 .05	.34 .03	1.85 .03	1.00	1.03	.0	.4
46 item 46	1051	1392	-.31 .08	-1.36 .09	-.83 .05	.34 .03	1.85 .03	1.01	1.00	.1	.0
49 item 49	996	1392	-.03 .07	-1.36 .09	-.83 .05	.34 .03	1.85 .03	.83	.76	-2.2	-2.6
52 item 52	990	1388	-.02 .07	-1.36 .09	-.83 .05	.34 .03	1.85 .03	.96	.93	-.5	-.7

```

-----
Item Estimates (Difficulty and Taus) In input Order          9/12/ 3 21:16
Achievability (N = 354 L = 27 Probability Level= .50)
-----
ITEM NAME | SCORE   MAX | DIFFCLTY TAU/S          | INFT  OUTFT  INFT  OUTFT
          |         SCR|          1  2  3  4  | MNSQ  MNSQ  t    t55
-----
item 55 | 1032 1400 | -.19 -1.36  -.83 .34  1.85 | .92   .86  -1.1 -1.4
          |         |      .07  .09  .05 .03  .03 |
58 item 58 | 1092 1408 | -.48 -1.36  -.83 .34  1.85 | 1.15  1.07  1.8   .7
          |         |      .08  .09  .05 .03  .03 |
61 item 61 |  952 1392 | .17  -1.36  -.83 .34  1.85 | .86   .85 -1.8 -1.6
          |         |      .07  .09  .05 .03  .03 |
64 item 64 | 1011 1392 | -.11 -1.36  -.83 .34  1.85 | 1.13  1.09  1.5   .9
          |         |      .07  .09  .05 .03  .03 |
67 item 67 |  911 1392 | .35  -1.36  -.83 .34  1.85 | 1.15  1.11  1.9   1.2
          |         |      .07  .09  .05 .03  .03 |
70 item 70 |  865 1400 | .57  -1.36  -.83 .34  1.85 | 1.07  1.16   .9  1.7
          |         |      .07  .09  .05 .03  .03 |
73 item 73 |  904 1392 | .38  -1.36  -.83 .34  1.85 | .90   .99 -1.3  -.1
          |         |      .07  .09  .05 .03  .03 |
76 item 76 |  865 1396 | .56  -1.36  -.83 .34  1.85 | .84   .89 -2.2 -1.2
          |         |      .07  .09  .05 .03  .03 |
79 item 79 |  983 1400 | .05  -1.36  -.83 .34  1.85 | 1.70  1.59  7.4  5.1
          |         |      .07  .09  .05 .03  .03 |
=====
Mean      |         |      .00          | 1.01  1.02   .1   .2
SD        |         |      .39          | .20   .20   2.3  1.9
=====

```

## APPENDIX 6

### RASCH ANALYSIS – PREPAREDNESS QUESTION

-----  
Item Estimates (Thresholds). 9/12/ 3 21:16  
all on Preparedness (N = 354 L = 27 Probability Level= .50).  
-----

Summary of item Estimates  
=====

Mean	.00
SD	.38
SD (adjusted)	.36
Reliability of estimate	.93

Fit Statistics  
=====

Infit Mean Square		Outfit Mean Square	
Mean	1.01	Mean	1.01
SD	.21	SD	.20
Infit t		Outfit t	
Mean	-.01	Mean	.02
SD	2.82	SD	2.23

0 items with zero scores  
0 items with perfect scores  
=====

-----  
Case Estimates 9/12/ 3 21:16  
all on Preparedness (N = 354 L = 27 Probability Level= .50).  
-----

Summary of case Estimates  
=====

Mean	-.07
SD	.91
SD (adjusted).	.88
Reliability of estimate	.93

Fit Statistics  
=====

Infit Mean Square		Outfit Mean Square	
Mean	1.01	Mean	1.01
SD	.53	SD	.52
Infit t		Outfit t	
Mean	-.18	Mean	-.11
SD	1.91	SD	1.51

0 cases with zero scores  
1 cases with perfect scores  
=====

-----  
Item Fit 9/12/ 3 21:16  
all on Preparedness (N = 354 L = 27 Probability Level= .50).  
-----

INFIT

MNSQ	.63	.71	.83	1.00	1.20	1.40	1.60
2 item 2			.	*			.
5 item 5			.		*		.
8 item 8			.			*	.
11 item 11			.		*		.
14 item 14			.	*			.
17 item 17			.		*		.
20 item 20			.	*			.
23 item 23			.	*			.
26 item 26			.		*		.
29 item 29			.				*
32 item 32		*	.				.
35 item 35	*		.				.
38 item 38			.	*			.
41 item 41			.	*			.
44 item 44			.	*			.
47 item 47			.	*			.
50 item 50			.	*			.
53 item 53			.	*			.
56 item 56		*	.				.
59 item 59			.	*			.
62 item 62			.		*		.
65 item 65			.			*	.
68 item 68			.			*	.
71 item 71			.	*			.
74 item 74			.		*		.
77 item 77			.	*			.
80 item 80			.				*

=====

Item Estimates (Difficulty and Taus) In input Order 9/12/ 3 21:16  
all on Preparedness (N = 354 L = 27 Probability Level= .50)

---

ITEM	NAME	SCORE		DIFFCLTY				TAU/S				INFT		OUTFT	
		MAX	SCR	1	2	3	4	MNSQ	MNSQ	t	t				
2	item 2	652	1404	.10	-1.96	-.57	.67	1.87	.98	.99	-.3	-.1			
				.06	.04	.03	.03	.05							
5	item 5	649	1404	.11	-1.96	-.57	.67	1.87	1.03	1.04	.5	.5			
				.06	.04	.03	.03	.05							
8	item 8	579	1412	.42	-1.96	-.57	.67	1.87	1.22	1.23	2.9	2.4			
				.06	.04	.03	.03	.05							
11	item 11	636	1412	.19	-1.96	-.57	.67	1.87	1.06	1.06	.8	.7			
				.06	.04	.03	.03	.05							
14	item 14	741	1400	-.26	-1.96	-.57	.67	1.87	.96	.97	-.6	-.3			
				.06	.04	.03	.03	.05							
17	item 17	705	1404	-.10	-1.96	-.57	.67	1.87	1.15	1.17	2.1	1.9			
				.06	.04	.03	.03	.05							
20	item 20	749	1404	-.29	-1.96	-.57	.67	1.87	.90	.91	-1.4	-1.0			
				.06	.04	.03	.03	.05							
23	item 23	663	1408	.07	-1.96	-.57	.67	1.87	.89	.89	-1.6	-1.2			
				.06	.04	.03	.03	.05							
26	item 26	928	1400	-1.01	-1.96	-.57	.67	1.87	1.12	1.12	1.6	1.3			
				.07	.04	.03	.03	.05							
29	item 29	762	1408	-.33	-1.96	-.57	.67	1.87	1.49	1.50	6.0	4.9			
				.06	.04	.03	.03	.05							
32	item 32	660	1396	.05	-1.96	-.57	.67	1.87	.69	.69	-4.9	-3.8			
				.06	.04	.03	.03	.05							
35	item 35	727	1404	-.20	-1.96	-.57	.67	1.87	.64	.65	-5.8	-4.5			
				.06	.04	.03	.03	.05							
38	item 38	617	1404	.24	-1.96	-.57	.67	1.87	.88	.89	-1.7	-1.2			
				.06	.04	.03	.03	.05							
41	item 41	637	1408	.17	-1.96	-.57	.67	1.87	.86	.86	-2.0	-1.6			
				.06	.04	.03	.03	.05							
44	item 44	521	1412	.66	-1.96	-.57	.67	1.87	.92	.91	-1.2	-1.0			
				.07	.04	.03	.03	.05							
47	item 47	692	1380	-.10	-1.96	-.57	.67	1.87	.95	.94	-.7	-.6			
				.06	.04	.03	.03	.05							
50	item 50	637	1380	.12	-1.96	-.57	.67	1.87	.91	.92	-1.2	-.9			
				.06	.04	.03	.03	.05							
53	item 53	636	1380	.13	-1.96	-.57	.67	1.87	.89	.89	-1.5	1.2			
				.06	.04	.03	.03	.05							

---

-----  
 Item Estimates (Difficulty and Taus) In input Order 9/12/ 3 21:16  
 all on Preparedness (N = 354 L = 27 Probability Level= .50)  
 -----

ITEM NAME	SCORE MAX		DIFFCLTY TAU/S				INFT MNSQ	OUTFT MNSQ	INFT t	OUTFT t	
	SCR		1	2	3	4					
56 item 56	619	1396	.22	-1.96	-.57	.67	1.87	.75	.76	-3.7	-2.9
			.06	.04	.03	.03	.05				
59 item 59	764	1400	-.35	-1.96	-.57	.67	1.87	.96	.96	-.5	-.5
			.06	.04	.03	.03	.05				
62 item 62	714	1380	-.20	-1.96	-.57	.67	1.87	1.10	1.09	1.4	1.0
			.06	.04	.03	.03	.05				
65 item 65	804	1380	-.57	-1.96	-.57	.67	1.87	1.27	1.24	3.5	2.5
			.06	.04	.03	.03	.05				
68 item 68	723	1384	-.23	-1.96	-.57	.67	1.87	1.24	1.24	3.1	2.5
			.06	.04	.03	.03	.05				
71 item 71	579	1388	.37	-1.96	-.57	.67	1.87	.88	.88	-1.7	-1.4
			.07	.04	.03	.03	.05				
74 item 74	502	1392	.70	-1.96	-.57	.67	1.87	1.06	1.06	.9	.7
			.07	.04	.03	.03	.05				
77 item 77	560	1384	.44	-1.96	-.57	.67	1.87	.96	.95	-.5	-.5
			.07	.04	.03	.03	.05				
80 item 80	763	1396	-.36	-1.96	-.57	.67	1.87	1.50	1.49	6.2	4.8
			.06	.04	.03	.03	.05				
=====											
Mean			.00					1.01	1.01	.0	.0
SD			.38					.21	.20	2.8	2.2
=====											

## APPENDIX 7

### RASCH ANALYSIS – DEVELOPMENT-PRIORITY QUESTION

-----  
Item Estimates (Thresholds) 9/12/ 3 21:16  
all on Development-priority (N = 354 L = 27 Probability Level= .50)  
-----

Summary of item Estimates  
=====

Mean	- .01
SD	.35
SD (adjusted)	.32
Reliability of estimate	.86

Fit Statistics  
=====

Infit Mean Square		Outfit Mean Square	
Mean	.99	Mean	.99
SD	.18	SD	.22
Infit t		Outfit t	
Mean	-.19	Mean	-.08
SD	2.08	SD	1.90

0 items with zero scores  
0 items with perfect scores  
=====

-----  
Case Estimates 9/12/ 3 21:16  
all on Development-priority (N = 354 L = 27 Probability Level= .50)  
-----

Summary of case Estimates  
=====

Mean	1.47
SD	.95
SD (adjusted)	.89
Reliability of estimate	.89

Fit Statistics  
=====

Infit Mean Square		Outfit Mean Square	
Mean	1.01	Mean	.99
SD	.49	SD	.46
Infit t		Outfit t	
Mean	-.12	Mean	-.08
SD	1.56	SD	1.24

1 cases with zero scores  
8 cases with perfect scores  
=====



-----  
Item Fit 9/12/ 3 21:16  
all on Development-priority (N = 354 L = 27 Probability Level= .50)  
-----

INFIN	.63	.71	.83	1.00	1.20	1.40	1.60
3 item 3	.	.	.	*	.	.	.
6 item 6	.	.	.	*	.	.	.
9 item 9	.	.	.	.	*	.	.
12 item 12	.	.	.	*	.	.	.
15 item 15	.	.	*	.	.	.	.
18 item 18	.	.	.	.	*	.	.
21 item 21	.	.	.	*	.	.	.
24 item 24	.	.	.	*	.	.	.
27 item 27	.	.	.	.	*	.	.
30 item 30	.	.	.	.	.	*	.
33 item 33	.	.	.	*	.	.	.
36 item 36	.	.	.	*	.	.	.
39 item 39	.	.	.	*	.	.	.
42 item 42	.	.	*	.	.	.	.
45 item 45	.	*	.	.	.	.	.
48 item 48	.	.	.	*	.	.	.
51 item 51	.	*	.	.	.	.	.
54 item 54	.	.	*	.	.	.	.
57 item 57	.	.	.	*	.	.	.
60 item 60	.	.	.	*	.	.	.
63 item 63	.	.	*	.	.	.	.
66 item 66	.	.	.	*	.	.	.
69 item 69	.	.	*	.	.	.	.
72 item 72	.	.	.	*	.	.	.
75 item 75	.	.	.	.	*	.	.
78 item 78	.	*	.	.	.	.	.
81 item 81	.	.	.	.	.	.	*

-----  
 Item Estimates (Difficulty and Taus) In input Order 9/12/ 3 21:16  
 all on Development-priority (N = 354 L = 27 Probability Level= .50)  
 -----

ITEM NAME	SCORE		MAX SCR	DIFFCLTY TAU/S				INFT MNSQ	OUTFT MNSQ	INFT t	OUTFT t
				1	2	3	4				
3 item 3	802	1059		.66 .08	-.86 .13	-.81 .06	.36 .03		.98 1.17	-.2	1.4
6 item 6	1073	1404		.05 .07	-.86 .13	-.81 .06	.36 .03	1.36 .02	.99 1.04	-.1	.4
9 item 9	1042	1412		.21 .07	-.86 .13	-.81 .06	.36 .03	1.36 .02	1.21 1.33	2.5	2.9
12 item 12	1104	1412		-.08 .07	-.86 .13	-.81 .06	.36 .03	1.36 .02	1.00 .92	.0	-.7
15 item 15	1091	1400		-.06 .07	-.86 .13	-.81 .06	.36 .03	1.36 .02	.90 .85	-1.2	-1.4
18 item 18	1065	1408		.09 .07	-.86 .13	-.81 .06	.36 .03	1.36 .02	1.19 1.44	2.2	3.6
21 item 21	1128	1400		-.25 .08	-.86 .13	-.81 .06	.36 .03	1.36 .02	.96 .95	-5	-.4
24 item 24	945	1408		.59 .06	-.86 .13	-.81 .06	.36 .03	1.36 .02	.97 1.05	-.3	.5
27 item 27	1008	1404		.34 .07	-.86 .13	-.81 .06	.36 .03	1.36 .02	1.15 1.28	1.8	2.5
30 item 30	1103	1408		-.09 .07	-.86 .13	-.81 .06	.36 .03	1.36 .02	1.30 1.38	3.3	3.1
33 item 33	1134	1396		-.30 .08	-.86 .13	-.81 .06	.36 .03	1.36 .02	.94 .83	-.7	-1.5
36 item 36	1193	1396		-.68 .09	-.86 .13	-.81 .06	.36 .03	1.36 .02	.98 .90	-.2	-.7
39 item 39	1174	1400		-.53 .08	-.86 .13	-.81 .06	.36 .03	1.36 .02	.96 .89	-.4	-.8
42 item 42	1160	1412		-.38 .08	-.86 .13	-.81 .06	.36 .03	1.36 .02	.82 .82	-2.2	-1.6
45 item 45	1120	1412		-.16 .07	-.86 .13	-.81 .06	.36 .03	1.36 .02	.78 .78	-2.8	-2.1
48 item 48	1082	1388		-.06 .07	-.86 .13	-.81 .06	.36 .03	1.36 .02	.94 .86	-.7	-1.3
51 item 51	1090	1388		-.10 .07	-.86 .13	-.81 .06	.36 .03	1.36 .02	.80 .83	-2.5	-1.6
54 item 54	1082	1380		-.09 .07	-.86 .13	-.81 .06	.36 .03	1.36 .02	.84 .85	-2.0	-1.3

=====

```

-----
Item Estimates (Difficulty and Taus) In input Order          9/12/ 3 21:16
all on Development-Priority (N = 354 L = 27 Probability Level= .50)
-----
ITEM NAME | SCORE  MAX| DIFFCLTY  TAU/S          | INFT  OUTFT  INFT  OUTFT
          |         SCR|           1    2    3    4 | MNSQ  MNSQ   t    t
-----
57  item 57 | 1204 1400 | -.74  -.86  -.81  .36  1.36 | .99   .88   -.1  -.9
          |         |   .09   .13   .06   .03   .02 |
60  item 60 | 1141 1404 | -.31  -.86  -.81  .36  1.36 | .99   .86   -.1 -1.2
          |         |   .08   .13   .06   .03   .02 |
63  item 63 | 1068 1376 | -.04  -.86  -.81  .36  1.36 | .86   .75  -1.8 -2.4
          |         |   .07   .13   .06   .03   .02 |
66  item 66 | 1067 1384 | .00   -.86  -.81  .36  1.36 | .89   .88  -1.3 -1.1
          |         |   .07   .13   .06   .03   .02 |
69  item 69 | 1032 1388 | .17   -.86  -.81  .36  1.36 | .90   .91  -1.3  -.8
          |         |   .07   .13   .06   .03   .02 |
72  item 72 |  953 1392 | .51   -.86  -.81  .36  1.36 | .95   .99   -.6   .0
          |         |   .06   .13   .06   .03   .02 |
75  item 75 |  955 1392 | .50   -.86  -.81  .36  1.36 | 1.03  1.03   .4   .4
          |         |   .06   .13   .06   .03   .02 |
78  item 78 |  961 1392 | .48   -.86  -.81  .36  1.36 | .78   .81  -3.0 -2.0
          |         |   .06   .13   .06   .03   .02 |
81  item 81 | 1017 1392 | .25   -.86  -.81  .36  1.36 | 1.64  1.57   6.7  4.7
          |         |   .07   .13   .06   .03   .02 |
-----
Mean      |         |   .00          | .99   .99   -.2  -.1
SD        |         |   .37          | .18   .22   2.1  1.9
-----

```

## APPENDIX 8

### RASCH ANALYSIS OVERALL CONSTRUCT

-----  
Item Estimates (Thresholds) 10/12/ 3 7:53  
all on OVERALL (N = 354 L = 81 Probability Level= .50)  
-----

Summary of item Estimates  
=====

Mean	.00
SD	.67
SD (adjusted)	.66
Reliability of estimate	.98

Fit Statistics  
=====

Infit Mean Square		Outfit Mean Square	
Mean	.97	Mean	.98
SD	.18	SD	.17
Infit t		Outfit t	
Mean	-.55	Mean	-.39
SD	2.33	SD	1.81

0 items with zero scores  
0 items with perfect scores  
=====

-----  
Case Estimates 10/12/ 3 7:53  
all on OVERALL (N = 354 L = 81 Probability Level= .50)  
-----

Summary of case Estimates  
=====

Mean	.70
SD	.52
SD (adjusted)	.50
Reliability of estimate	.94

Fit Statistics  
=====

Infit Mean Square		Outfit Mean Square	
Mean	.95	Mean	.97
SD	.38	SD	.40
Infit t		Outfit t	
Mean	-.54	Mean	-.31
SD	2.40	SD	1.90

0 cases with zero scores  
0 cases with perfect scores  
=====

Item Fit 10/12/ 3 7:53  
all on OVERALL (N = 354 L = 81 Probability Level= .50)

INFIT								
MNSQ		.53	.63	.77	1.00	1.30	1.60	1.90
1.1a	1 item 1		*	.		.		
1.1b	2 item 2		.	*		.		
1.1c	3 item 3		.	.		*		
1.2a	4 item 4		.	*		.		
1.2b	5 item 5		.	.		*		
1.2c	6 item 6		.	.		*		
1.3a	7 item 7		.	.		*		
1.3b	8 item 8		.	.		*		
1.3c	9 item 9		.	.		*		
1.4a	10 item 10		*	.		.		
1.4b	11 item 11		.	.		*		
1.4c	12 item 12		.	.		*		
1.5a	13 item 13		.	.		*		
1.5b	14 item 14		.	*		.		
1.5c	15 item 15		.	.		*		
1.6a	16 item 16		.	.		*		
1.6b	17 item 17		.	.		*		
1.6c	18 item 18		.	.		*		
2.1a	19 item 19		.	.		*		
2.1b	20 item 20		.	*		.		
2.1c	21 item 21		.	.		*		
2.2a	22 item 22		.	*		.		
2.2b	23 item 23		.	*		.		
2.2c	24 item 24		.	.		*		
2.3a	25 item 25		.	.		*		
2.3b	26 item 26		.	.		*		
2.3c	27 item 27		.	.		*		
2.4a	28 item 28		.	.		*		
2.4b	29 item 29		.	.		*		
2.4c	30 item 30		.	.		*		*
3.1a	31 item 31		.	*		.		
3.1b	32 item 32		*	.		.		
3.1c	33 item 33		.	.		*		
3.2a	34 item 34		.	*		.		
3.2b	35 item 35	*	.	.		.		
3.2c	36 item 36	.	.	.		*		
3.3a	37 item 37	.	.	.		*		
3.3b	38 item 38	.	.	*		.		
3.3c	39 item 39	.	.	.		*		
3.4a	40 item 40	.	.	*		.		
3.4b	41 item 41	.	.	.		*		
3.4c	42 item 42	.	.	.		*		
3.5a	43 item 43	.	.	.		*		
3.5b	44 item 44	.	.	*		.		
3.5c	45 item 45	.	.	.		*		
4.1a	46 item 46	.	.	.		*		
4.1b	47 item 47	.	.	*		.		
4.1c	48 item 48	.	.	.		*		
4.2a	49 item 49	.	.	*		.		
4.2b	50 item 50	.	.	*		.		
4.2c	51 item 51	.	.	.		*		
4.3a	52 item 52	.	.	.		*		
4.3b	53 item 53	.	.	*		.		
4.3c	54 item 54	.	.	.		*		
5.1a	55 item 55	.	.	.		*		
5.1b	56 item 56	*	.	.		.		
5.1c	57 item 57	.	.	.		*		
5.2a	58 item 58	.	.	.		*		
5.2b	59 item 59	.	.	*		.		
5.2c	60 item 60	.	.	.		*		

Item Fit 10/12/ 3 7:53  
all on OVERALL (N = 354 L = 81 Probability Level= .50)

INFINIT		.53	.63	.77	1.00	1.30	1.60	1.90
6.1a	61 item 61			*				
6.1b	62 item 62				*			
6.1c	63 item 63					*		
6.2a	64 item 64					*		
6.2b	65 item 65					*		
6.2c	66 item 66						*	
6.3a	67 item 67					*		
6.3b	68 item 68				*			
6.3c	69 item 69				*			
7.1a	70 item 70				*			
7.1b	71 item 71		*					
7.1c	72 item 72				*			
7.2a	73 item 73			*				
7.2b	74 item 74			*				
7.2c	75 item 75				*			
7.3a	76 item 76		*					
7.3b	77 item 77			*				
7.3c	78 item 78			*				
7.4a	79 item 79						*	
7.4b	80 item 80					*		
7.4c	81 item 81							*

Item Estimates (Difficulty and Taus) In input Order 10/12/ 3 7:53  
 all on all (N = 354 L = 81 Probability Level= .50)

ITEM NAME	SCORE		DIFFCLTY	TAU/S				INFT	OUTFT	INFT	OUTFT
	MAX	SCR		1	2	3	4				
1 item 1	1078	1412	-.41 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	.66	.67	-5.0	-3.9
2 item 2	652	1404	.88 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.79	.82	-3.4	-2.2
3 item 3	1178	1412	-.86 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.08	1.12	.9	1.2
4 item 4	1023	1408	-.22 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	.79	.79	-3.1	-2.4
5 item 5	649	1404	.89 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.86	.89	-2.2	-1.4
6 item 6	1105	1404	-.54 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.08	1.12	1.0	1.2
7 item 7	880	1416	.26 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.87	.88	-2.0	-1.4
8 item 8	579	1412	1.09 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.93	.96	-1.1	-.5
9 item 9	1074	1412	-.39 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.24	1.26	2.9	2.5
10 item 10	1009	1412	-.16 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	.74	.75	-3.8	-2.9
11 item 11	636	1412	.94 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.98	1.00	-.3	.1
12 item 12	1136	1412	-.65 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.11	1.14	1.3	1.4
13 item 13	1090	1408	-.48 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	.87	.85	-1.8	-1.7
14 item 14	741	1400	.63 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.85	.87	-2.3	-1.6
15 item 15	1123	1400	-.63 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.05	1.06	.7	.6
16 item 16	1007	1412	-.15 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.04	1.06	.6	.7
17 item 17	705	1404	.74 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.99	1.00	-.2	.1
18 item 18	1097	1408	-.49 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.19	1.23	2.3	2.3

Item Estimates (Difficulty and Taus) In input Order 10/12/ 3 7:53  
 all on all (N = 354 L = 81 Probability Level= .50)

ITEM NAME	SCORE		DIFFCLTY				TAU/S		INFT MNSQ	OUTFT MNSQ	INFT t	OUTFT t
	MAX	SCR	1	2	3	4						
19 item 19	1138	1412	-.67 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.06	1.01	.8	.2	
20 item 20	749	1404	.62 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.84	.85	-2.5	-1.8	
21 item 21	1160	1400	-.81 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.06	1.00	.7	.0	
22 item 22	954	1412	.03 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	.86	.88	-2.0	-1.3	
23 item 23	663	1408	.86 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.87	.90	-2.1	-1.2	
24 item 24	977	1408	-.05 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.05	1.06	.7	.6	
25 item 25	1162	1408	-.79 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	.97	.94	-.3	-.6	
26 item 26	928	1400	.09 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.02	1.02	.3	.2	
27 item 27	1040	1404	-.28 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.24	1.23	3.0	2.3	
28 item 28	927	1412	.11 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.11	1.11	1.6	1.2	
29 item 29	762	1408	.59 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.15	1.16	2.2	1.8	
30 item 30	1135	1408	-.66 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.44	1.52	4.8	4.6	
31 item 31	1046	1404	-.31 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	.81	.79	-2.7	-2.4	
32 item 32	660	1396	.85 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.73	.74	-4.6	-3.3	
33 item 33	1166	1396	-.85 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.11	1.12	1.3	1.2	
34 item 34	1116	1408	-.58 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	.78	.77	-2.9	-2.6	
35 item 35	727	1404	.68 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.67	.68	-5.7	-4.1	
36 item 36	1225	1396	-1.20 .08	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.17	1.15	1.7	1.3	



Item Estimates (Difficulty and Taus) In input Order 10/12/ 3 7:53  
 all on all (N = 354 L = 81 Probability Level= .50)

ITEM NAME	SCORE	MAX  SCR	DIFFCLTY				TAU/S				INFT MNSQ	OUTFT MNSQ	INFT t	OUTFT t
			1	2	3	4	1	2	3	4				
37 item 37	1056	1408	-.34 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	.92	.88	-1.1	-1.2			
38 item 38	617	1404	.98 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.86	.88	-2.3	-1.4			
39 item 39	1206	1400	-1.06 .08	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.14	1.13	1.6	1.2			
40 item 40	1023	1412	-.21 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	.85	.85	-2.1	-1.7			
41 item 41	637	1408	.93 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.95	.97	-.8	-.3			
42 item 42	1192	1412	-.92 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	.93	.95	-.8	-.5			
43 item 43	879	1416	.26 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.97	.98	-.4	-.2			
44 item 44	521	1412	1.25 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.87	.91	-2.0	-1.1			
45 item 45	1152	1412	-.72 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	.91	.89	-1.2	-1.1			
46 item 46	1067	1392	-.43 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	.91	.89	-1.2	-1.1			
47 item 47	692	1380	.75 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.85	.86	-2.3	-1.7			
48 item 48	1114	1388	-.63 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.04	1.01	.5	.2			
49 item 49	1012	1392	-.22 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	.80	.79	-2.8	-2.5			
50 item 50	637	1380	.89 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.86	.86	-2.3	-1.6			
51 item 51	1122	1388	-.67 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	.94	.90	-.7	-1.0			
52 item 52	1006	1388	-.21 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	.92	.90	-1.1	-1.0			
53 item 53	636	1380	.90 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.84	.84	-2.6	-1.9			
54 item 54	1114	1380	-.66 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.00	.98	.1	-.2			

Item Estimates (Difficulty and Taus) In input Order 10/12/ 3 7:53  
 all on all (N = 354 L = 81 Probability Level= .50)

ITEM NAME	SCORE		DIFFCLTY	TAU/S				INFT	OUTFT	INFT	OUTFT
	MAX	SCR		1	2	3	4				
55 item 55	1048	1400	-.34 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	.94	.92	-.8	-.8
56 item 56	619	1396	.96 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.70	.73	-5.2	-3.5
57 item 57	1236	1400	-1.25 .08	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.14	1.04	1.4	.4
58 item 58	1108	1408	-.55 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.02	.96	.3	-.4
59 item 59	764	1400	.57 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.89	.90	-1.6	-1.1
60 item 60	1173	1404	-.86 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.19	1.16	2.1	1.5
61 item 61	968	1392	-.07 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	.84	.81	-2.4	-2.2
62 item 62	714	1380	.68 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.93	.92	-1.1	-.9
63 item 63	1100	1376	-.62 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.08	1.07	1.0	.8
64 item 64	1027	1392	-.28 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.07	1.01	.9	.2
65 item 65	804	1380	.42 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.05	1.04	.7	.5
66 item 66	1099	1384	-.58 .07	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.15	1.11	1.8	1.1
67 item 67	927	1392	.06 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.10	1.07	1.3	.8
68 item 68	723	1384	.66 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.93	.94	-1.1	-.7
69 item 69	1064	1388	-.42 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.01	.98	.1	-.2
70 item 70	881	1400	.22 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.93	.96	-1.0	-.4
71 item 71	579	1388	1.06 .05	-.94 .05	-.61 .03	.34 .01	1.21 .02	.82	.83	-3.0	-2.1
72 item 72	985	1392	-.12 .06	-.94 .05	-.61 .03	.34 .01	1.21 .02	1.02	1.02	.3	.3

=====

Item Estimates (Difficulty and Taus) In input Order 10/12/ 3 7:53  
 all on all (N = 354 L = 81 Probability Level= .50)

ITEM NAME	SCORE	MAX  SCR	DIFFCLTY				TAU/S				INFT MNSQ	OUTFT MNSQ	INFT t	OUTFT t
			1	2	3	4	1	2	3	4				
73 item 73	920	1392	.09	-.94	-.61	.34	1.21	.88	.92	-1.7	-.9			
			.06	.05	.03	.01	.02							
74 item 74	502	1392	1.28	-.94	-.61	.34	1.21	.90	.92	-1.6	-.9			
			.05	.05	.03	.01	.02							
75 item 75	987	1392	-.13	-.94	-.61	.34	1.21	1.02	1.03	.3	.3			
			.06	.05	.03	.01	.02							
76 item 76	881	1396	.22	-.94	-.61	.34	1.21	.72	.72	-4.4	-3.5			
			.05	.05	.03	.01	.02							
77 item 77	560	1384	1.11	-.94	-.61	.34	1.21	.88	.93	-1.8	-.9			
			.05	.05	.03	.01	.02							
78 item 78	993	1392	-.15	-.94	-.61	.34	1.21	.93	.92	-1.0	-.8			
			.06	.05	.03	.01	.02							
79 item 79	999	1400	-.16	-.94	-.61	.34	1.21	1.36	1.32	4.3	3.2			
			.06	.05	.03	.01	.02							
80 item 80	763	1396	.56	-.94	-.61	.34	1.21	1.11	1.10	1.6	1.2			
			.05	.05	.03	.01	.02							
81 item 81	1049	1392	-.35	-.94	-.61	.34	1.21	1.79	1.78	8.3	6.7			
			.06	.05	.03	.01	.02							
Mean			.00					.97	.98	-.6	-.4			
SD			.67					.18	.17	2.3	1.8			

## APPENDIX 9 COMMENTS FROM REPORTS

### Foundation knowledge and skills

#### *Knowledge of content and how students learn*

##### Knowledge and understanding of subject matter

An area of concern, however, is his lack of knowledge in the Biological area.

This needs to be addressed so that his background knowledge in Biology with particular emphasis on Australian examples is sufficient to adequately teach junior science MSiSMs209

Which achieved effective learning situations involving content such as, where is Australia in relation to the rest of the world, States and Capitals, the Australian Flag, well-known Australian landforms and Australian native animals FStP37

Demonstrate that she has a strong command of subject matter FStP54

Reflected her understanding of subject content FStP88

He has shown a good knowledge of the curriculum in all KLA's and the content required to teach this stage MSiP155

She has a very good knowledge of the subject area - especially with Year 7 and 8 History (Rome and Middle Ages). FStSH173

Miss XXXX's knowledge of mathematics gives her confidence with the content of the courses FStSMs197

Whilst this problem may be attributable to an unfamiliarity with the subject material MSiSH260

Has sound knowledge of her content area FBSH441

In this first year of teaching she has demonstrated a sound knowledge of her subject areas with senior and junior classes FBSH471

Her understanding of the content of what she teaches has been transferred to carefully thought out lessons as the year has developed FBSH510

His command of subject content is most impressive MBSPd566

Breadth of knowledge

Utilises a wide variety of teaching resources in the preparation and presentation of learning experiences across the curriculum<sup>FBP367</sup>

All KLA areas have been incorporated into the classroom program<sup>FBP397</sup>

Has satisfactorily fulfilled the role as English/History teacher and has taught in areas of junior and senior English/History<sup>MBSC463</sup>

He has proven himself adaptable and receptive to a range of different teaching practices not only in his chosen field of music but also in the fields of art, computing studies and concert band management<sup>MBSC480</sup>

She provides a wide range of suitable activities in all Key Learning Areas<sup>FBP325</sup>

XXXX has been innovative in providing more interesting and exciting lessons across the Key Learning Areas<sup>FBP294</sup>

Her ability to teach across disciplines within Science and pitch her teaching to an appropriate level, are also worthy of note<sup>FStSMs217</sup>

He has an impressive knowledge of the History subject area and ... He has also done a very commendable job in managing a 9A English class as part of this practicum - a subject which, in terms of teaching method, is theoretically outside his area of training<sup>MSISH183</sup>

She has also taken the whole class for Science, Health, PE and PD, and Creative and Practical Arts<sup>FStP140</sup>

She has planned and taught lessons in all KLA's for this multi-grade class<sup>FStP115</sup>

Capacity to integrate ideas and themes across and within units of work

Miss XXXX developed a good understanding of the curriculum for Year 4 and 5 and programmed effectively to integrate study across the curriculum<sup>FStP2</sup>

XXXX was successful in planning, teaching and evaluating a 5 week Unit on "Spiders" covering all KLA's but specifically English, Science & Technology, HSIE and Creative & Practical Arts<sup>FStP56</sup>

She has planned exciting units of work, integrated throughout the KLA's<sup>FStP66</sup>

Lessons have been integrated, with attractive and varied displays relating to several KLA areas<sup>FStP122</sup>

XXXX has researched, planned and taught integrated units using the current English and Science and Tech curriculum<sub>FStP132</sub>

She has developed a program, which is interesting, well sequenced, and has an integrated approach across the KLAS<sub>FBP306</sub>

### Specialised knowledge

The staff have all been grateful for the many skills you have brought to SSSS in areas such as Computers, Art and Language<sub>FStP108</sub>

During practicum Miss YYYY has assisted with a whole class technology program, which teaches the children word processing skills using the Macintosh Emate laptop computers<sub>FStP82</sub>

One area in literacy to be further developed would be in the area of Guided Reading to improve her skills in the explicit teaching of reading and reading strategies<sub>FStP84</sub>

The work in her key learning area of Visual Arts in the Colour unit allowed children maximum participation and exposed them to a variety of media, paint, crayon, marbling, tie-dying to mention a few<sub>FStP124</sub>

Technology was also used in lots of work<sub>FStP143</sub>

She was able to demonstrate a good understanding of second language acquisition<sub>FStSH177</sub>

XXXX has coaching certificates in basketball, touch football, cricket, swimming and she is a badged hockey umpire<sub>FBP299</sub>

He has recently completed full Austswim qualifications and the Technology in Teaching and Learning course<sub>MBP330</sub>

Good use is made of a range of resources, including computer and information technologies<sub>FBP349</sub>

XXXX has a background in graphic arts and pottery and has retrained as a Technology and Applied Studies teacher<sub>FBSStMs459</sub>

Utilising his own considerable technology skills, YYYY developed multi-media learning experiences for students, using midi-computer technology<sub>FBSStMs493</sub>

### Ensuring the content knowledge is appropriate to students

Her expectations have been appropriate to grade level<sub>FStP129</sub>

Student needs and interests were addressed with activities reflecting the varying range of abilities within each class MSIP129

Her expectations are of a good standard FSISC201

Her ability to teach across disciplines within Science and pitch her teaching to an appropriate level, are also worthy of note FStSMs217

Miss XXXX has well thought out lesson plans which show a variety of skills and strategies needed for teaching “Beginner” classes FStSMs253

YYYY realistic expectations of each student with whom he works are communicated in a positive, nurturing and supportive way MBP311

She sets clear, achievable goals for students in a multi-age class, while demonstrating an understanding of individual needs FBP349

An appropriate teaching-learning program for the students in her class, which has provided developmentally appropriate units of work based on departmental syllabi FBP447

XXXX sets her students achievable but challenging goals and devotes her efforts to encouraging them to work towards achieving these outcomes FBSMs575

#### Knowledge of curriculum and syllabus requirements

XXX has a sound knowledge of curriculum development FSIP33

She has shown a good understanding of the process of curriculum development and the ability to plan and implement units of work FSIP90

A great understanding of the process of curriculum development and the ability to plan and implement the unit which has provided for continuous teaching and evaluating it formatively and summatively has been evident FSIP126

She has contributed positively to the school through curriculum development FSIP93

A clear knowledge of the requirements of the syllabus in her subject areas FSISH189

Miss XXXX had an excellent knowledge of the curriculum content and was able to use this to plan and develop an appropriate program of work based on the Science Syllabus FStSMs228

Lesson preparation exhibits evidence of organised planning, concise syllabus content FBP312

XXXX program reflects her sound knowledge of current syllabus requirements FBP371

In this first year of teaching she has demonstrated a sound knowledge of her subject areas with senior and junior classes<sub>FBSH471</sub>

She made a significant contribution to the development of a new teaching program for Year 7 and 8 Geography<sub>FBSH541</sub>

### Capacity to articulate a philosophy of learning

Risk taking is encouraged and the classroom reflects her commitment to child-centred learning<sub>FBP291</sub>

Creating more child-centred lessons rather than teacher-centred<sub>FStP79</sub>

Providing a balance between teacher directed and child centred activities<sub>FStP143</sub>

Reflect a working knowledge of individual differences and student learning styles<sub>FBP316</sub>

Resulted in across the school recognition for her enthusiasm, child centred approach to her duties<sub>FBP336</sub>

YYYY programs are pedagogically sound being based upon a clearly articulated philosophy of education<sub>MBSC456</sub>

Continually upgrading her knowledge and educational philosophy<sub>FBSPd515</sub>

YYYY is respected by parents and students because they recognise his total dedication towards teaching and a philosophy that always puts student needs first<sub>FBSPd462</sub>

### ***Teaching Skills***

#### Questioning techniques

Oral and written questioning techniques are being formed and with further development will improve<sub>FStP48</sub>

Use of questioning – Developed well<sub>FStP64</sub>

Questioning techniques are varied and used frequently<sub>FStP120</sub>

Miss XXXX demonstrated good questioning techniques<sub>FStSH167</sub>

She is a clear communicator and is able to use appropriate language and questioning techniques<sub>FStSMs228</sub>

Lessons show the use of clear instructions supported by visual cues, questioning techniques appropriate to individual needs<sub>FBP373</sub>



Her questioning technique involves repetition and rephrasing to ensure that students understand and focus on the task FBP392

She is developing sound questioning techniques to direct her enquiries to a wide range of students in the class. Students are given opportunities to ask questions and participate in discussions FBSH458

YYYY makes good use of questioning and seeks to involve all students in the lesson MBSMs540

A sound questioning technique is employed to gain student cooperation and respect MBSMs564

### Oral communication skills

His approachable personality and communication skills have seen him develop a positive rapport with students and staff alike MBSPd474

XXXX outgoing personality, cheerfulness, professionalism and highly developed communication skills have earned her the respect of the school community FBSH541

He can, at times, use overly-colloquial language and must develop a more authoritative tone in managing student behaviour in an assertive way MBSMs461

He has good communication skills with both parents and students MBP402

She communicates effectively with parents and staff FBP384

Commendable oral communicative skills are complemented by satisfactory written documentation FBP314

Within the classroom particularly, Mr YYYY is an aware and clear communicator MStSH169

Her use of language, speech and the changing tone of her voice is extremely pleasing FStP147

I feel he needs to give a high priority to classroom management in his future professional development. As he learns to vary the volume of his voice ... I am sure this will come MStP155

Her communication throughout the school, really excellent FStP25

### Hand writing and chalkboard skills

XXXX will need to further develop her neatness and presentation of handwritten work on the blackboard, in students' books, on awards, homework sheets etc and practise her cursive writing style to improve in this area FStP63

Keep up the handwriting practice FStP51

She needs to spend more time on really improving her chalkboard writing skills FSIP51

Use of the chalkboard, aids and materials has been demonstrated at a high level FSIP147

She uses ... clear board summaries and instructions for students to follow FBS0602

She makes good use of the whiteboard FSISH243

She demonstrated excellent presentation skills and used the overhead projector and the blackboard effectively FSISH167

### Interpersonal skills

YYYY has proven he has good interpersonal skills, blending into our staff, midway through the year MBP402

He has excellent interpersonal skills MSTP53

I feel XXXX will need continuing support and advice during her early teaching career, particularly in relation to the nature of her interaction with colleagues FSIP106

Miss XXXX's willingness to learn and improve coupled with her good interpersonal skills are her main assets as a teacher at this stage FSISM217

XXXX obvious interpersonal skills have resulted in across the school recognition FBP336

YYYY demonstrates outstanding interpersonal skills with students, staff and parents MBP358

XXXX interpersonal relationships are of a high order so that she has gained the confidence and respect of her colleagues FBP418

XXXX has excellent inter-personal skills FBSH443

Her interpersonal skills are highly developed. She has established strong personal relationships with all levels of staff, with all kinds of students from the academically gifted to the battlers and with our parents and community FBSH563

### Supervision skills

Pupil supervision is encouraging, positive and purposeful FBP390

XXXX has developed sound monitoring and assessment techniques within the classroom FBP349

She moved around the room continually supervising the children's work and encouraging those having difficulty FSIP80

Miss XXXX made good use of her practicum experience, immersing herself in many of the school activities, including supervision duties FStSMs199

She has taught both junior and senior English classes, covering a wide range of abilities, as well as taking on supervision of Year 12 Work Studies, including workplace visits FBSH521

XXXX made good use of motivational strategies and careful supervision and evaluation of children's work have contributed to the overall development of the class FStP42

XXXX was a valuable member of staff joining in with supervision duties, staff meetings, excursions etc FStP80

### Technological skills

XXXX uses a range of strategies including the use of technology, to document and report on student progress, as well as to enhance student learning FBSPd589

XXXX uses technology in classroom practice with students. She has demonstrated her ability to use motorised markbook effectively and prepares tests papers on computers FBSH568

As Computer Coordinator, she has made a marked contribution to whole school use of technology in the teaching and learning process FBSMs497

XXXX has shown initiative in Computer Education where she has assisted staff with the school's web page and use of the digital camera FBP424

Technology has been utilised to enhance learning across the curriculum FBP398

His skills in the area of computer technology will be an asset to any staff MStSH249

He has gained skills at using a variety of technologies in the teaching of science (Flexcam, Video, Microscope) and has developed confidence in using these pieces of equipment MStSMs209

XXXX was able to apply her advanced computer skills in a range of situations, from the detailed analysis of student behaviours to assist with Student Welfare to general classroom applications FStSP124

Miss XXXX is very confident when using information technology in her teaching. When using a word processor she showed children how to set their text out in an attractive format and how to use editing functions FStSP27

## **Student and classroom management**

### ***Managing learning***

#### Management of time

He was able to pace lessons<sub>MStP30</sub>

Transitions from one lesson to another have become more fluent as has the understanding and implementation of lesson type and duration<sub>MStP31</sub>

XXXX can improve in her teaching by addressing the following: (1) Timing of lessons – the curriculum is so full, there is limited time and we have to get through the syllabus<sub>FStP31</sub>

It was pleasing to see Miss XXXX worked effectively on strengthening time management and sequencing of activities<sub>FStSH181</sub>

Class time management has been mastered<sub>MBP426</sub>

Sound time management techniques employed by XXXX have added to the learning process<sub>FStP78</sub>

XXXX also has very impressive time management skills and always meets deadlines<sub>FBSM488</sub>

#### Management of lesson transitions

His smooth transition from section to section within the lessons he delivers<sub>MBP316</sub>

He has shown initiative in use of time for lesson change-overs and variation of routine<sub>MStP114</sub>

An area that XXXX will be able to improve on with more classroom and teaching experience is the flow from one lesson to the next – (day-to-day, week-to-week)<sub>FStP55</sub>

Timing of activity changes needs to be addressed<sub>FStP52</sub>

Miss XXXX was successfully able to link her lessons to past work and build upon prior learning to achieve outcomes for students<sub>FStP75</sub>

#### Logical structure to the lesson

Miss XXXX has a good understanding of teaching and learning processes and develops student understanding working from the concrete to the symbolic<sub>FStP27</sub>

Her lessons are well planned and follow a logical sequence through the program<sub>FBSMs341</sub>

Lessons flowed logically and YYYY always had sufficient background knowledge to answer question MStP30

A continual awareness of the need for well structured and well sequenced instructions FStP39

Mr YYYY structured his lessons to start with recall from earlier work and progress, through a variety of means, to new work and homework MStSMs269

The lesson steps were all clear and without any 'gaps' MBP316

Improved student outcomes have become a focus in XXXX teaching. Through effective structuring of learning tasks FBP399

### Flexibility in delivery

Embraced the importance of 'flexibility' with enthusiasm FStP305

She has been able to be flexible, foresee problems and to make variations according to the current situation FStP43

Her cooperative, flexible, punctual approach FBSSp454

Strong aspects of XXXX enthusiastic attitude are her initiative, resourcefulness, flexibility FBSH467

Classes are student-centred and flexibility of teaching strategies continues to improve FBSH473

He has proven himself adaptable and receptive to a range of different teaching practices FBSC480

He is able to adapt his teaching plan to accommodate changing circumstances MBSMs505

YYYY is developing his initiative, resourcefulness, creativity and flexibility MBSH511

Her variety in lessons where she uses group work, peer assessment, computers and research lessons demonstrate her creativity and flexibility FBSMs557

### Use of a range of teaching strategies

Miss XXXX is just as comfortable presenting more formal teacher directed activities or being on the floor with the children actively engaging in an informal, 'hands on,' student-centred setting FStP16

Her attempts with difficult, interesting activities have been met with an enthusiastic response from the children FStP129

Utilises a variety of teaching approaches which range from the more traditional teacher-directed whole class lessons to the paired and group work of co-operative learning. FStP25

Able to successfully implement and manage a variety of simultaneous group activities FSiP133

His lessons reflect an awareness of student abilities and learning styles in their structure and content; this professional base is supported by a variety of appropriate teaching strategies MStSH169

He also learnt to vary activities within any given lesson to maintain student interest and motivation MStSH170

Miss XXXX has well thought out lesson plans which show a variety of skills and strategies needed for teaching “Beginner” classes FSiSM253

A variety of appropriate resources and teaching strategies FBP457

There is a variety of appropriate and often innovative teaching methods MBP514

Willing to try new and innovative approaches to teaching, varying her delivery to accommodate different learning styles FBSM452

### **Problem solving**

Ability to question children and lead discussions which encouraged critical thinking MStP30

XXXX has developed a teaching strategy which emphasises the importance of problem solving and critical thinking FSiP43

She has needed guidance with problem solving strategies FSiP57

Increase the interest and enthusiasm of students through the use of hands on and problem solving activities FBP392

She has utilised, lective techniques, group work, presentations, debates, demonstration and problem solving situations, to name just a few, to incorporate variety and relevance to her delivery FBSPd587

This is evident by the fact that the problem solving associated with this area motivated him to areas of computing he enjoyed MStSMs262

### **Use of resources**

All resources were well organised FSiP5

She has demonstrated excellent use of resources that are appropriate to grade levels and relevant and stimulating FSiP19

XXXX well resourced the activities for the unit by borrowing resources from the school library, having hand-made and student created resources FStP37

Lessons have been well planned and evaluated displaying a wide range of strategies and use of resources FStP120

He has used a variety of strategies and resources including appropriate technology where applicable. MStSH185

She effectively uses the many programs and units which have been developed by the school FBP304

XXXX is thoughtful in her choice of resources FBSH458

### Catering for individual differences

The use of challenging activities for fast finishers became very popular, with the children bringing in tasks to challenge Miss XXXX as well FStP140

XXXX has been aware of the needs of both faster and slower students, providing extension work for 'fast finishers,' as she gave extra time to slower workers FStP109

She has demonstrated her ability at recognising individual differences and responding to those differences FStP7

She has been teaching whole class lessons for many weeks constantly following up unfinished work, seeking out alternative activities for low achievers and always encouraging and praising FStP117

Presented a range of stimulating material, including additional activities for the more-able students MBSH183

Mr YYYY can adapt his teaching style to accommodate for a wide variety of learning abilities MBSMs218

XXXX has met each child's educational needs through individualised learning programs MBP336

In this way XXXX is able to provide challenges for students and promote student self-evaluation. XXXX displays empathy towards students of diverse cultural backgrounds and respects differing cultures FBP362

They take into account the abilities and behaviours of the students for whom they are designed FBSH455

She is always aware of the individual needs of the students in her classes and prepares material to cater for these differences as much as possible FBSMs481

She has an ability to cater to a range of student needs and abilities FBSH549

#### Motivation of students and facilitation of learning

She has established a good rapport with her students who respond in a positive, enthusiastic manner to the lessons presented FBSMs488

Through this he has been able to engender interest and enthusiasm in his students and obtain very good results MBSMS489

She has demonstrated strength in her ability to stimulate and maintain student interest in classroom activities FBSH500

He was able to pace lessons to motivate and interest all students MSIP30

The children at SSSS PS have responded to XXXX's teaching in a very positive way FStP115

Miss XXXX's approach to her teaching was reflected in the students' interest and enjoyment of their Science lessons FStSMs228

She creates a learning environment that interests and motivates her students FBP363

Able to keep students motivated through a solid introduction, development and conclusion to every lesson FStP59

Her quiet nature does not preclude her ability to motivate a class ... XXXX is careful to ensure that her lessons flow and that the class learn from each lesson FStP100

He has achieved a great deal with these students, most of whom are ready to work towards Stage 1 outcomes MSIP65

Students were always kept on task and achieving outcomes planned FStP151

#### Following-up

XXXX will have to work on following through all directions especially those relating to behaviour and discipline and classroom management FStP56

She tried to ensure that she had a teaching focus for each aspect and consolidated this through follow up work FStP84



The preparation, execution, follow-up and evaluation of each lesson distinguishes Mr YYYY as a real professional MBSMs221

Developed an awareness of issues such as assessment, diagnosis and follow-up of students' learning FStSH167

She critically evaluates her students' work, following up activities ensuring a thorough understanding of work taught FBP302

She uses all avenues of evaluation and sound follow-up, including phone contact and technological means of communication between herself and her students FBSH504

YYYY keeps satisfactory class records, which, with further improvement, will aid in the critical evaluation of student progress and follow-up techniques MBSH511

XXXX awareness of the classroom discipline management techniques is well developed, and her follow up procedures are to be commended, both within the classroom and the playground

FBSMs527

He is efficient in his follow up of student discipline problems and uses a wide range of strategies MBSMs555

When necessary, XXXX has demonstrated fair and effective management practices and utilised persistent follow-up procedures to ensure her position of respect is maintained FBSPd587

#### Creation of an appropriate classroom environment

Miss XXXX has maintained a stimulating environment for children FStP12

Her management strategies enabled her to maintain a positive learning environment FStP29

Enabled her to provide and maintain an appropriate but challenging learning environment for all FStP78

She has worked very hard to maintain a happy and secure classroom environment FStP137

The creation of a non-threatening relaxed environment FStSH181

His appreciation of methods to organise the classroom environment and deal with the range of situations that arise there has been enhanced MStSMs225

Contributed to a conducive positive classroom learning environment for students FStSMs253

Her classroom is colourful with children's displayed work changing regularly FBP468

XXXX classroom is a stimulating, pleasant learning environment with student and class work being displayed FBP310

XXXX rewards good work and employs strategies which make learning enjoyable and in doing so has developed a positive learning environment FBSPd483

YYYY has created a sound and purposeful classroom management style that fosters respect for peers, teacher, school and the classroom environment MBSH581

Continually seeks an effective, mutually respectful learning environment MBSM5601

#### Assessment and evaluation of learning

The English and Drama units she has been asked to teach are assessed adequately and her assessments reflect the unit outcomes FBSH590

Assisting with program writing, exam preparation and marking and discussion of the new curriculum FBSH545

Consistently monitors their progress through progress charts based on quizzes, book marking and personal comment FBSH477

Her student assessment requires ongoing focus for the appropriate development and implementation of a teaching program to meet the identified needs FBP392

XXXX demonstrates a practical knowledge of assessment techniques and is able to effectively monitor student performance and progress FBP480

She effectively assessed student progress through spelling, topic tests and other techniques such as group work FSiSH191

She became increasingly aware of issues of assessment, diagnosis and follow up of student's learning and planned her lessons accordingly FSiSH167

Greater emphasis on recording assessment tasks is necessary to fully gauge her pupil's progress FSiP123

#### Experience in teaching a variety of classes or content areas

She has taught a variety of lessons across most KLA's FSiP141

Miss XXXX undertook practice teaching on two classes (Kindergarten and Year 2) during her ten week practicum FSiP75

Not only has she successfully introduced the children to new experiences (eg Recorder playing) but she has also willingly ventured out of her comfort zone to deliver effective lessons in Science and Technology FStP88

Lessons have been integrated, with attractive and varied displays relating to several KLA areas. Her successful use of group work, especially in Mathematics and Craft has been a strong feature FStP122

Miss XXXX spent four weeks at SSSS School teaching Year 7 and Year 8 Mathematics, Stage 5 Computing Studies and a Year 11 Computing Studies student. She also assisted Year 10 students as they worked on an investigation FBSMs199

Miss XXXX has responded to the challenge of teaching Junior Mathematics, Science, and Senior Chemistry with enthusiasm FStSMs211

In his month of practice teaching he has observed and/or taught the following classes: Year 10 Commerce; Year 9 History; Year 8 Social Studies; Year 7 English FStSH257

YYYY has taught Year 11 Mathematics in Society, Year 11 Biology, Year 10 Standard Mathematics, Year 8 and Year 7 Mathematics MBSMs484

She has undertaken the responsibility of teaching Computing Studies and Mathematics FBSMs497

XXXX teaching load since appointment has included 7-10 English and History, Contemporary and General English, General Studies, Legal Studies and Life Management FBSH498

### ***Managing the classroom***

#### Rapport with students

YYYY has fostered greater student interest in music, and established a good rapport with students of a wide range of abilities MBSC493

XXXX handles all aspects of this job with informed maturity, demonstrating the ability to establish excellent rapport within the whole school community. XXXX enthusiasm extends to the classroom and is appreciated by the students she teaches FBSC592

She demonstrates an ability to engage all her students FBSH471

She has established sound relationships with all her students and has involved parents in classroom activities FBP420

YYYY has established an excellent rapport with students, staff and parents of our school community MBP405

Miss XXXX has the ability to communicate effectively with students and has a genuine interest in and liking for children or young people FStSH273

He has developed a good rapport with faculty colleagues, students and other staff MStSMs209

YYYY accompanied Yr5 on their excursion to Lake Keepit at the beginning of the term and this allowed him to develop a rapport with the students before his practicum began MStP150

#### Use of a variety of strategies

Miss XXXX has experimented with many techniques of student discipline and has shown some positive development towards student management FStP28

Classroom management was one of XXXX's initial goals. She has tried several different techniques with different groups of children and has persevered to make these work for her in the classroom with success FStP48

Also more experience will help with being able to use a variety of classroom management skills that particularly suit her personality FStP55

As Mr YYYY gains more experience, his classroom management will improve. He needs to explore a variety of techniques, including voice modulation, to ensure effective control MStSH258

Mr YYYY has had to employ a number of classroom management strategies, and work out how to improve his control over a class after a difficult lesson MStSMs261

Her classroom management skills are strengthening and she has shown willingness to develop a variety of strategies which will assist her to cater for the needs of all her students FBP286

He is always willing to vary his approach to classroom management and therefore adapts to the demands of each class he teaches MBSH462

#### The capacity to establish and maintain rules and routines

Miss XXXX followed the established routines of the class and exhibited a firm control over the class FStP142

Students were always kept on task and achieving outcomes planned FStP151

He is open, attentive and patient and constantly evinces fairness and consistency MStSH169

Mr YYYY has made a pleasing improvement in his methods of teaching throughout this practice session and with more forcefulness in his manner MSISC201

She encourages positive behaviour and establishes clear expectations MSISM231

The high standards on which she insists have greatly enhanced the position of the library in the school FBP300

XXXX has a quiet, friendly yet affirmative approach with the children under her care ensuring that classroom control is maintained FBP374

She has a firm yet warm manner FBSMs475

Students respond well to her positive, friendly but firm approach FBSH534

#### Use of positive reinforcement

Displays a very high standard of positive reinforcement strategies and the children have responded well to her FStP41

She has established good rapport with the children in the class using positive strategies for discipline and for gaining attention FStP45

She encouraged positive behaviour in the classroom and implemented her own successful reward system FStP56

Through praise and encouragement achieved high standards of work and creativity from her students FStP59

Positive behaviour reward system which successfully motivated students and encouraged appropriate classroom conduct FStP41

Classroom management was generally very effective and based on positive reinforcement of desirable behaviour FStP95

Mr YYYY's strength lies in his sensitivity to the needs of students and his ability to establish positive relationships with students within the classroom and beyond MSISH260

She is fully aware of the need to maintain high levels of self esteem for her students and her encouragement measures in the classroom have been very effective FBP312

She has a friendly, positive and supportive approach to classroom management resulting in a cohesive and happy class group FBP414

XXXX rewards good work and employs strategies which make learning enjoyable and in doing so has developed a positive learning environment FBSPd483

### The ability to manage difficult and disruptive students

YYYY is making a genuine effort to improve his classroom management skills and is developing his strategies to deal with students who become distracted or who are disruptive in the classroom MBSMs530

While she faces classroom management difficulties, some arising from a predominantly Year 7 LOTE teaching load FBSH477

XXXX deals with difficult situations calmly but firmly and fairly FBSMs445

YYYY has accepted responsibility for developing programs to manage and improve the behaviour of students who are causing concern in three district schools MBP404

XXXX has an extremely challenging class where she has demonstrated flexibility, tolerance and fortitude FBP365

YYYY has a challenging group of students. He is beginning to establish more satisfactory classroom management techniques. Greater attention to maintaining consistency and pre-empting problems will ensure an even more effective learning environment MBP319

Miss XXXX handled a difficult class with aplomb FStSH243

With several difficult children in the class, XXXX has had a gruelling introduction to the 'real world' of teaching FStP113

## **The teaching and learning cycle**

### ***Preparation and planning***

#### General preparation and preparedness

She is well prepared and is flexible when necessary to maximise learning experience FStP13

Her ... recognition of the importance of preparation was pleasing to see FStP113

He was always well prepared for his lessons MStP62

She was well prepared, confident and effective in providing the students good opportunities to learn the concepts covered and practice the skills required FStSMs160

She is an enthusiastic, well prepared, congenial teacher FStSMs234

She has the ability to prepare and plan teaching programs FStSH273

XXXX preparation and planning are of a high standard FBP298

XXXX programming and preparation is outstanding, her interpretation of syllabus material reflects a deep understanding of the student needs of the IO class FBStSp457

His work is well prepared and presented with an assurance that contributes positively to his rapport with students FBSMs492

### Planning of lessons

Miss XXXX puts much thought, time and energy into planning lessons FStP27

Her written plans for lessons showed a high degree of planning what she wanted to achieve FStSMs199

Lesson preparation has always been thorough FStP52

His lessons are always well planned with lesson structures and strategies in place to achieve defined, appropriate outcomes FStSMs221

In all areas of teaching - from lesson planning and preparation right through to reviewing and assessing outcomes - he has been very professional and always willing to accept advice FStSH257

She has always been prepared for every lesson FStP94

XXXX lesson preparation is very thorough and caters for the wide range of needs of the students in her charge which include phase 1 to phase 3 ESL students, students with low support needs and gifted and talented students. Planning is done well in advance and is based on close analysis of her students' achievements FBP290

Her programming and daily lesson plans contain relevant activities chosen to match outcomes and identified student needs FBP374

Her lessons are typically well prepared and delivered FBSMs497

Features of YYYY work are his meticulous and comprehensive lesson preparation MBSH532

### Planning of units of work

XXXX has made professional and competent contributions to her faculty in programming FBSMs526

She effectively introduced, monitored and assessed the implementation of contract based work on Robin Klein. Her preparation for the unit and its presentation was exemplary FStP22

The ability to plan and implement units of work from each KLA curriculum to provide continuous teaching will be further enhanced as YYYY gains more experience MStP53

She has planned exciting units of work, integrated throughout the KLA's FStP566

He has planned a HSIE unit with assistance and taught it effectively MStP155

While Mr YYYY does need to formalise his unit and lesson plans to a greater extent, he demonstrated that he understands the need to plan on a range of levels including content, process, resource input, time constraint and student ability MStSH187

She planned her units carefully FStSH245

XXXX developing sound programming techniques FBP351

The innovative lessons and units of work prepared by XXXX reflect well throughout classroom and other strategies that cater thoroughly for individual differences in student learning rates and styles FBSH512

#### Planning for student outcomes

XXXX lesson plans are well structured, the outcomes are clearly defined FBSH599

His lesson preparation has shown a development and the need for development in terms of student outcomes MBSH562

XXXX work organisation has been a very appropriate and geared to achieve high learning outcomes for her young students, her class last year made very good progress towards the Early Learning Outcomes FBP379

Her lessons were well structured and she was able to achieve the outcomes set for each group FStISC263

He happily undertook the demands of the existing programs and the required learning outcome MStSM160

Planned lessons which would interest and stimulate children as well as lead them to clearly defined outcomes MVFSIP144



### Planning for individual needs

XXXX shows initiative and self-reliance which is demonstrated in the daily preparation and organisation of lessons. Her planning is invariably, thoughtful, thorough and ahead of schedule. Provision is made for the differing rates of progress of her pupils<sub>FBP350</sub>

Her lesson plans are designed to cater for student individual learning needs<sub>FBSSp447</sub>

XXXX strives to present well prepared lessons that cater for the wide range of class groups and abilities that she has taught<sub>FBSMs465</sub>

Her teaching/learning program is well planned, thoughtful and covers all aspects of the curriculum catering for the various student abilities within the class<sub>FBP398</sub>

XXXX has met each child's educational needs through individualised learning programs based on effective assessment strategies and the involvement of each family<sub>FBP336</sub>

XXXX plans and organises her work thoroughly, with due regard to the individual needs and interests of all the students<sub>FBP282</sub>

Mr YYYY in a short time has been able to address students individual needs and prepare appropriate material for them<sub>MSISMs238</sub>

His foresight and enthusiasm is evident in his planning for lessons and he shows a great ability to plan for the individual needs of students<sub>MSIP128</sub>

Her lessons have been well planned and structured to cope with all levels of student competency<sub>FSIP71</sub>

### ***Thinking about and improving on practice***

#### Reflecting on teaching

Has been able to modify preparation and teaching based on evaluation and reflection<sub>FSIP17</sub>

Diagnosing difficulties and planning follow-up work when evaluation has revealed a need. This evaluation of lessons has shown her how, and why, strategies have 'worked'<sub>FSIP45</sub>

Her ability to assess her own lessons has been accurate however she has needed guidance with problem solving strategies in relation to her own technique<sub>FSIP57</sub>

She also reflects very well on her own performance<sub>FSIP143</sub>

Miss XXXX ... has evaluated her performance both formally and informally<sub>FSISH182</sub>

Continue to take time to reflect on the lesson which is not so good<sub>FStSMs227</sub>

He actively seeks advice, constructively reflecting on and evaluating his teaching experiences<sub>MBSPd543</sub>

XXXX has the ability to reflect critically on her own practice, and is willing to seek out and respond to constructive criticism and advice<sub>FBSMs506</sub>

XXXX has clearly demonstrated her ability to ... critically evaluate her teaching programs, leading to effective program modification and specific follow-up<sub>FBP430</sub>

### Reflecting on learning

She became increasingly aware of issues of assessment, diagnosis and follow up of student's learning and planned her lessons accordingly<sub>FStSH167</sub>

It was evident that XXXX reviewed her lessons thoughtfully, seeking to improve ... student learning outcomes<sub>FStP124</sub>

At the end of each lesson she evaluated the progress of the children<sub>FStP93</sub>

YYYY shows evidence of continuing critical evaluation of student progress<sub>FBP347</sub>

Her capacity to critically evaluate student progress<sub>FBP365</sub>

XXXX has shown she can develop an excellent program which incorporates critical evaluation of student progress. This evaluation then determines the follow-up programming<sub>FBP409</sub>

XXXX keeps satisfactory class records, which, with further improvement will aid in the critical evaluation of student progress and follow-up techniques<sub>FBSH458</sub>

He has also displayed exemplary teaching skills by continual critical evaluation of student progress<sub>MBSSp561</sub>

Mr YYYY varied the introduction to his lessons and built on students previous knowledge and skills<sub>FStP62</sub>

### Involvement in professional development

Miss XXXX has attended all staff meetings and also attended Professional Development courses on racism and school planning<sub>FStP27</sub>

She has observed Reading Recovery, Support classes and mainstream classes in operation, attended staff and departmental meetings, and a Child Protection In-service<sub>FStP71</sub>

Inservice Workshops with Performing Arts unit in "Design" and "Script Writing" MStSC161

She accepts responsibility for her own professional development and is very clear about what she wants to achieve FStSMs213

XXXX actively seeks and engages in training and development activities to enhance her professional capacities FBP284

He is always seeking to develop himself professionally, both within the school and at after-school courses held by the Department of Education and Training MBP316

XXXX has taken the opportunity to involve herself in whole school activities and the availability of school staff development programs FBSH467

In addition to her teaching, XXXX has attended staff development courses on ESL (as a member of the ESL Committee) in school workshops for new teachers and a vacation seminar on the new HSC Visual Art syllabus FBSC602

#### Building on experience

XXXX is prepared to trial new approaches and always responds positively to feedback and suggestions and addresses the needs of all her students FBSC534

She is developing appropriate skills of classroom management which are being constantly refined in response to differing, and occasionally difficult, class groupings and situations FBSH521

XXXX has clearly demonstrated her ability to assess students and to critically evaluate her teaching programs, leading to effective program modification and specific follow-up FBP430

XXXX has enjoyed experimenting with different teaching methods and is able to critically self-evaluate her performance. She is always willing to accept advice, strives for perfection and thrives on being able to constantly improve her skills FBP391

She has applied this new knowledge effectively within the classroom FBP321

His preparation and presentation of lessons has shown the ability to reflect on previous experience and, through willing acceptance of advice (which could though, be sought more actively) he has modified his approach, method and manner to suit the differing needs of classes/students at different levels of age and ability FStSC264

Miss XXXX's most characteristic feature is one of the desire to quickly and efficiently adopt the most proficient teaching classroom strategies she has experienced or witnessed FStSM211

Goals set at the beginning of the practicum have been achieved and focusing on weaknesses have led to significant improvement FStB97

Classroom skills showed positive development throughout her practicum and her evaluations were honest and resulted in improvements in the following lessons FStB84

### **Professional characteristics and relationships**

#### ***Personal characteristics***

##### Professionalism

XXXX was professional in her attitude to teaching and developed a good rapport with both students and staff FStP146

Miss XXXX behaves in a professional manner at all times, accepting responsibility whenever required FStSMs158

Miss XXXX approached her teaching tasks conscientiously and conducted herself in a friendly and professional manner FStSMs162

Miss XXXX has demonstrated both the professional and ethical behaviour required within the teaching profession FStSH253

Mr YYYY was professional in his speech and manner both with the students and other members of the science faculty MStSMs209

I feel that Mr YYYY is going to develop into a teacher with sound professional ethics who will work hard to develop good working relationships with both students and peers MStSMs218

At all times she maintained a professional demeanour, in language, dress and interactions with everyone FStSMs232

XXXX is a committed, enthusiastic teacher who presents herself in a professional manner FBP295

She has a determination to achieve high professional standards and displays initiative, resourcefulness and self reliance FBP310

Although self-reliant, YYYY has also learned to listen to others and learn from those with more experience, showing the development of professionalism and commitment FBP318

YYYY is a dedicated teacher who conducts himself in a professional manner at all times and consistently demonstrates a high level of professional ethics FBP358

She has established sound professional relationships within the faculty and the school FBSMs452

YYYY is always punctual and professionally attired MBSMs564

### Confidence

YYYY continues to mature professionally as his confidence in the educational setting grows

MBSC529

During the year, XXXX inexperience and lack of confidence with many of the Industrial Arts disciplines has been countered by her thorough ... FBSMs576

Her lesson preparation is active and confident FBSH521

She has developed a positive relationship with both staff and students and works collaboratively across faculties, whilst exhibiting a quiet confidence in her abilities FBSM459

His teaching style is open and relaxed MBP401

She has an easy going and open attitude FStSC204

She is not afraid to “have a go” at any tasks an effective and responsible teacher should take on FStSMs159

She has a confident, focused approach to her role FBP340

Gaining confidence in decision-making with respect to appraisal of behaviour and consequences FBP275

Miss XXXX possesses powerful communication skills and a confident, energetic classroom presence FStSH242

XXXX's confidence and approach to teaching improved tremendously throughout this prac FStP86

### Enthusiasm

The children and I have enjoyed her enthusiasm and friendly manner FStP120

She has ... displayed enthusiasm in becoming a member of staff FStP32

It is a pleasure to be involved in the career development of such an enthusiastic and thoroughly professional, young aspiring teacher FStP54

XXXX has a very positive and enthusiastic attitude to teaching FStP74

YYYY is a confident teacher and has shown great enthusiasm for teaching MStP224

She approaches all tasks with commitment and enthusiasm and this is very evident within the classroom<sub>FStSH188</sub>

She has good broad-based Science knowledge and skills, and great enthusiasm for her subject<sub>FStSMs224</sub>

She demonstrates enthusiasm and commitment to the teaching profession<sub>FStSH242</sub>

XXXX an enthusiastic, outgoing, happy teacher, who imparts her cheerfulness and a sense of well being to the students in her class and her colleagues<sub>FBP281</sub>

YYYY is a self motivated teacher and has displayed initiative and enthusiasm for his chosen career<sub>MBP330</sub>

XXXX enthusiastically accepted the challenge of a 4/5 composite class<sub>FBP369</sub>

Her enthusiasm and sound foundation of teaching skills should see this continue<sub>FBSH478</sub>

Miss XXXX would benefit from a far more enthusiastic approach toward teaching<sub>FStP55</sub>

### Initiative

She has constantly used her initiative when preparing her lessons ensuring the range of abilities in the class were catered for<sub>FStP9</sub>

Miss XXXX has used initiative when working within the class and school<sub>FStP26</sub>

This would involve a greater use of her own personal initiative in order to become a fully participating member of a school staff in the future<sub>FStP92</sub>

By continuing to use your own initiative you have successfully programmed, prepared, taught and evaluated interesting and appropriate lessons<sub>FStP103</sub>

Miss XXXX displayed initiative in the school by training the choir and providing musical accompaniment for a religious service held while she was with us<sub>FStSC207</sub>

XXXX has demonstrated initiative by volunteering to<sub>FBP289</sub>

She is resourceful and self-reliant displaying a willingness to learn and to take on added responsibility<sub>FBP295</sub>

XXXX shows initiative and self-reliance which is demonstrated in the daily preparation and organisation of lessons<sub>FBP350</sub>

She is resourceful and shows great creativity in her work<sub>FBP434</sub>

XXXX exhibited self-reliance, initiative and organisational flair while proving herself to be a reliable and resourceful team member FBSH473

### Commitment

Her commitment to a high standard of planning and preparation within her lessons FSTP3

Your enthusiasm and commitment toward your work FSTP18

XXXX has demonstrated a caring attitude toward the students and a genuine commitment to teaching FSTP39

She demonstrates a dedication to her chosen profession and to the welfare of the students FSTP54

XXXX has shown a high level of professional commitment FSTP71

Miss XXXX approached her teaching tasks conscientiously FSTSMs162

Miss XXXX is a more capable, conscientious and well organised teacher FSTSH161

She has been very conscientious in her planning of lessons and resources, diligent in completing her practicum requirements and reflective and responsive to modify her teaching practices, indicating a most professional approach to teaching FSTSC203

YYYY is committed to achieving the best outcomes for his students MBSMs601

She has shown commitment beyond the classroom, becoming involved in the extra curricula activities with the staff and makes the effort to coach sporting teams in her own time FBSMs527

### Maturity

XXXX has a mature classroom manner that meets the expectations of her faculty FBSPd588

YYYY has a mature and professional manner and he has gained the respect of his peers MBSH581

She has become a well-respected member of staff as a result of her mature and professional approach to teaching MBSMs570

YYYY continues to mature professionally as his confidence in the educational setting grows

MBSC529

Her mature approach is reflected in a desire to provide the best learning environment for the students in her care FBP419

XXXX maturity has been exhibited in the way she has requested discussions with me (her supervisor) when she felt consultation was required to ensure the students in her class were continually progressing and/or gaining enhancement from measures applied FBP345

Her manner is pleasant, and confident, showing a maturity in outlook and a positive attitude to her work FBP305

She brings great maturity and a caring attitude to her role as classroom teacher FBP276

Her knowledge and maturity, and ability to teach means that she has great potential as a teacher FStSMs223

Miss XXXX is of mature character and is a good role model for our students FStSMs159

#### Holding high expectations of students

She has maintained a high standard of learning in all of her classes FBSC592

She sets high standards for her students FBSH571

She sets clear expectations and ensures these are met FBSH537

A dedicated teacher who seeks to maximise the learning outcomes for his students through the delivery of a relevant and challenging presentation of lesson material MBSMs479

The class demonstrates a high expectation ethos at all times FBP423

XXXX provides a vibrant and challenging classroom which ensures students are motivated to learn FBP417

Ensures that the children in her care are motivated and constantly challenged FBP413

She has provided challenges for students through the learning program whilst taking into account the varying abilities of students FBP366

Her expectations are of a good standard FSIP112

XXXX work organisation has been a very appropriate and geared to achieve high learning outcomes for her young students, her class last year made very good progress towards the Early Learning Outcomes FBP379

#### Organisation

Her organisational skills are excellent both in the classroom and at faculty level FBSH577

A confident, well-organised, mature and hard-working teacher FBSH545



From the outset, XXXX exhibited self-reliance, initiative and organisational flair FBSH473

Her excellent organisational skills have been evident in her leadership of our whole school positive discipline program FBP417

XXXX and classroom program reflect an increasing organisation and understanding of the curriculum requirements of her year FBP391

She is well organised, energetic and positive in her approach to teaching FStSC202

Miss XXXX is a capable, conscientious and well organised teacher FStSH161

Organisation, planning are to a very high standard FStP60

Organisational skills and practical initiatives have been somewhat hesitant however after a discussion during week two XXXX made an effort to improve and it is hoped this will continue with increased confidence FStP57

### Punctuality

She is punctual, well-presented and professional at all times FBSH523

She is always punctual to class and her duties FBSH599

XXXX is punctual to school, class and in meeting her administrative obligations FBSH443

Punctuality and reliability are strengths which XXXX has shown to all staff and parents FBP411

XXXX is punctual and professional in her approach to teaching FBP386

She is punctual in attending grade, class and whole school meetings FBP362

She is punctual in performing all duties and prompt in the presentation of all documentation FBP323

She has consistently maintained an appropriate level of personal appearance, dependability, reliability and punctuality FStSMs253

XXXX has always been reliable, punctual and her dress and appearance is very professional FStP147

### Grooming

XXXX ... upholds high standards of punctuality and dress FStP49

She is well presented, articulate and punctual FStP13

Appearance and dress – Neat, clean, tidy FStP64

She dressed comfortably and appropriately for our age group FStP78

Mr YYYY maintained a high level of personal appearance, dependability, reliability and punctuality MStSMs219

YYYY always presents himself as a well dressed and well mannered young man and is a very welcome addition to the staff of this school MBP318

YYYY is punctual, well dressed and highly professional MBP404

XXXX is always well groomed and appropriately dressed FBSH514

YYYY is always punctual and professionally attired. He sets a good example for his students to follow FBSH564

### ***Professional relationships***

#### Accepts cooperating teacher's advice

She was always open to discussion and suggestions FStP1

She discusses with me why I use certain terminology with the children FStP27

YYYY readily accepted advice and implemented the suggestions discussed into his teaching MStP69

Her willingness to accept and act on advice given to her by peers FStP92

XXXX has always listened to and explored suggestions and ideas from other staff members FStP109

She has willingly accepted advice and has used these suggestions in following lessons FStP145

Miss XXXX is willing to accept advice and guidance when and where appropriate FStSH273

She seeks advice or guidance readily FBP296

She readily seeks advice and support when required and is becoming more receptive to professional advice, accepting it in the spirit in which it is offered FBP367

A willingness to seek and respond positively to advice has contributed to XXXX professional growth FBP418

Works in a team with cooperating and other teachers

YYYY is a talented musician and uses these abilities to work cooperatively with other teachers to develop an effective music program MBP377

XXXX works cooperatively with others and responds positively to professional advice incorporating new ideas into her planning and teaching FBP392

XXXX is aware of the importance of cooperation and working as a team FBP434

Interpersonal relationships are harmonious and YYYY works cooperatively with other staff in the junior primary team MBP426

Works very well with other staff to ensure a good performance from students FBSC463

Established an easy rapport with a number of his colleagues MBSH502

He has actively contributed to the overall atmosphere of the department in a positive way. Mr YYYY has developed solid relationships with the students and other teachers MSiSMs218

Miss XXXX was more than willing to assist with any work at the school which included the Maths Extension classes for Year 7 and Years 8 to 10 as well as being a part of the Regional Maths Challenge Day MSiSMs198

School-wide involvement

As well as preparing students for assemblies, Mr YYYY actively assisted with school excursions, inter school visits and took responsibility for the breakfast club MSiP62

During her time at SSSS, Miss XXXX successfully entered into the spirit of the school, attending both social functions and regular staff meetings FStP95

Mr YYYY has come to realise the value of co-curricular activities, especially in the teacher-student relationship development FStSH195

XXXX became actively involved in the training of the girls' soccer team and has worked very collaboratively with Stage 2 teachers in helping run Thursday afternoon sport FBP301

XXXX willingly contributed to the whole school community. She has trained and prepared students for the District Sports Carnival as well as coaching a T-Ball team in the PSSA competition FBP333

XXXX has been enthusiastic in her willingness to accept roles and responsibilities in the school community FBSH498

She is thorough in all faculty and school duties and responsibilities XXXX has effectively organised excursions and co-ordinated General Studies and Work Studies within the school FBSH600

YYYY has quickly involved himself in a wide range of whole school activities, he volunteered for the ELLA marking team and also for the welfare “mentor” program. This has enabled him to develop a solid understanding of the broader school environment. He coached a soccer team early in the year, has been part of the Year 10 Peer support program and attended the Year 7 Gala Day MBSH555

#### Relationship with parents and the community

He has quickly perfected a rapport with students, staff and parents not often so developed in probationary teachers MBSSp561

She has developed good relations with the staff, parents and students as a whole, and participates in a range of extra curricular activities FBSH496

XXXX was effectively reported to parents on student’s progress and successfully liaised with parents, supervisor, colleagues and support staff concerning individual student needs and concerns FBP421

YYYY forms positive working relationships with staff, students and parents. ... YYYY communicates high expectations and responds to requests of executive staff and parents professionally and promptly FBP361

This has given her a concept of her subjects (History and English) as part of a student’s overall education, and highlighted positive communication between the school and parents FStSH241

Planned and implemented her wonderful 5 week ‘Armidale’ HSIE unit which involved parents and other community members FStP113

During Education Week Miss YYYY taught a Mathematics demonstration lesson for the parents of the class with calm efficiency FStP82

XXXX welcomes parent/community helpers into her room with her efforts being appreciated by the parent body FBP382

She has regularly marked class and home work that she has set and provided feedback to both students and parents FBSC468

Implementation of policies

She has made a significant effort to familiarise herself with the routines, procedures and timetables of both the school and the focus class<sub>FStP10</sub>

During this time she has consolidated her knowledge and understanding of classroom management, student needs, departmental and school policies, time constraints and student expectations<sub>FStP141</sub>

XXXX has also developed efficient documentation procedures, including program registration, daily planning, resource ordering and attendance records.<sub>FBSH573</sub>

She asked lots of questions about procedures, rulings, administrative needs, etc.<sub>FStSMs232</sub>

Her attention to school; routines, policies, times and duties has been commendable<sub>FBP287</sub>

YYYY has cooperated and acted consistently and responsibly in implementing school policies<sub>MBP319</sub>

Co-operation and responsibility in the implementation of school policies has been evident at all times<sub>MBP347</sub>

Her record-keeping is thorough and reflects both systemic and school requirements<sub>FBSH504</sub>

She is thorough in all faculty and school duties and responsibilities<sub>FBSH600</sub>

## APPENDIX 10

### RASCH ANALYSIS NUD\*IST DATA

-----  
Item Estimates (Thresholds) 15/ 1/ 5 21:30  
all on all (N = 602 L = 54 Probability Level= .50)  
-----

Summary of item Estimates  
=====

Mean	.00
SD	1.15
SD (adjusted)	1.14
Reliability of estimate	.98

Fit Statistics  
=====

Infit Mean Square		Outfit Mean Square	
Mean	1.00	Mean	1.05
SD	.06	SD	.24
Infit t		Outfit t	
Mean	-.24	Mean	.09
SD	1.42	SD	1.58

0 items with zero scores  
0 items with perfect scores  
=====

-----  
Case Estimates 15/ 1/ 5 21:30  
all on all (N = 602 L = 54 Probability Level= .50)  
-----

Summary of case Estimates  
=====

Mean	-1.87
SD	.78
SD (adjusted)	.66
Reliability of estimate	.71

Fit Statistics  
=====

Infit Mean Square		Outfit Mean Square	
Mean	1.00	Mean	1.05
SD	.15	SD	.59
Infit t		Outfit t	
Mean	.00	Mean	.09
SD	.77	SD	.83

1 cases with zero scores  
0 cases with perfect scores  
=====

-----  
 Item Estimates (Thresholds) 15/ 1/ 5 21:30  
 all on all (N = 602 L = 54 Probability Level= .50)  
 -----

3.0		12					
		10	15				
2.0		3					
		11	49				
		7	8	22			
		14					
1.0		16					
		2	13				
		37	38	46			
		4					
		6	29	48			
		9	19	30	35	45	
		1	5	27			
.0	X	17	31	34	47	54	
		25					
	X	36	41	43			
	X	39					
	XXX	23	28				
	XXX	24	53				
1.0	XXXXXXXXXXXX	33					
	XXXXXXX	21	40				
	XXXXXXXXXX						
	XXXXXXXXXXXX	18	32				
	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	20	44				
	XXXXXXXXXX	42	50				
	XXXXXXXXXXXXXXXXXXXX						
-2.0	XXXXXXXXXXXX						
	XXXXXXXXXXXXXXXXXXXX	52					
		51					
	XXXXXXXXXXXXXXXXXXXX						
	XXXXXXXXXXXXXXXXXXXX	26					
-3.0	XXXXXXXXXXXX						
	XXXXXXX						
	XXXXXX						
-4.0	XX						
	X						
-5.0							

=====

Each X represents 4 students

-----  
Item Estimates (Thresholds) In input Order 15/ 1/ 5 21:30  
all on all (N = 602 L = 54 Probability Level= .50)  
-----

ITEM NAME	SCORE	MAXSCR	THRSH	INFT	OUTFT	INFT	OUTFT
			1	MNSQ	MNSQ	t	t
1 item 1	86	602	.10 .12	1.15	1.62	1.8	4.2
2 item 2	47	602	.80 .15	1.06	1.24	.5	1.3
3 item 3	18	602	1.82 .24	1.02	1.04	.1	.2
4 item 4	58	602	.56 .14	1.04	1.28	.4	1.6
5 item 5	92	602	.02 .12	1.01	.99	.1	-.1
6 item 6	67	602	.40 .13	.96	.85	-.3	-1.0
7 item 7	32	602	1.22 .18	1.01	.94	.1	-.2
8 item 8	29	602	1.32 .19	1.00	.91	.1	-.3
9 item 9	77	602	.23 .13	1.02	1.24	.2	1.7
10 item 10	12	602	2.23 .29	1.02	1.48	.2	1.2
11 item 11	26	602	1.43 .20	.97	.79	-.1	-.8
12 item 12	9	602	2.52 .34	.98	.76	.0	-.4
13 item 13	49	602	.75 .15	.98	.84	-.1	-.9
14 item 14	36	602	1.09 .17	1.03	1.21	.3	1.0
15 item 15	11	602	2.32 .31	1.01	2.03	.1	2.1
16 item 16	42	602	.92 .16	1.04	1.32	.3	1.5
17 item 17	98	602	-.06 .11	1.09	1.32	1.2	2.6
18 item 18	247	602	-1.43 .09	.98	.99	-.5	-.2

=====



-----  
Item Estimates (Thresholds) In input Order 15/ 1/ 5 21:30  
all on all (N = 602 L = 54 Probability Level= .50)  
-----

ITEM NAME	SCORE	MAXSCR	THRSH	INFT	OUTFT	INFT	OUTFT
			1	MNSQ	MNSQ	t	t
19 item 19	78	602	.22 .13	1.02	1.16	.3	1.2
20 item 20	265	602	-1.57 .09	.97	.96	-1.3	-.7
21 item 21	201	602	-1.07 .09	1.02	1.01	.5	.2
22 item 22	29	602	1.32 .19	.99	.82	.0	-.7
23 item 23	158	602	-.70 .10	.89	.81	-2.4	-2.6
24 item 24	162	602	-.74 .10	.96	.97	-.9	-.4
25 item 25	107	602	-.17 .11	1.10	1.13	1.5	1.2
26 item 26	398	602	-2.58 .09	1.08	1.09	2.0	1.4
27 item 27	89	602	.06 .12	1.05	1.25	.7	1.9
28 item 28	157	602	-.69 .10	.98	.95	-.3	-.6
29 item 29	67	602	.40 .13	1.02	1.04	.2	.3
30 item 30	74	602	.28 .13	1.03	1.10	.3	.7
31 item 31	101	602	-.10 .11	1.13	1.39	1.8	3.1
32 item 32	244	602	-1.41 .09	1.02	.99	.6	-.2
33 item 33	192	602	-1.00 .09	.96	.90	-1.2	-1.5
34 item 34	100	602	-.08 .11	.98	.94	-.3	-.5
35 item 35	78	602	.22 .13	1.04	.99	.4	-.1
36 item 36	122	602	-.34 .10	1.08	1.25	1.4	2.4

=====

Item Estimates (Thresholds) In input Order 15/ 1/ 5 21:30  
 all on all (N = 602 L = 54 Probability Level= .50)

ITEM NAME	SCORE	MAXSCR	THRSH	INFT	OUTFT	INFT	OUTFT
			1	MNSQ	MNSQ	t	t
37 item 37	52	602	.69 .15	.96	.89	-.3	-.6
38 item 38	55	602	.62 .14	1.05	1.39	.5	2.1
39 item 39	131	602	-.44 .10	.92	.81	-1.4	-2.2
40 item 40	208	602	-1.13 .09	.94	.89	-1.9	-1.7
41 item 41	118	602	-.30 .11	1.07	1.20	1.2	1.8
42 item 42	280	602	-1.68 .09	1.02	1.05	.6	.9
43 item 43	128	602	-.41 .10	.97	.96	-.5	-.3
44 item 44	249	602	-1.45 .09	.91	.89	-3.4	-2.0
45 item 45	76	602	.25 .13	1.00	1.13	.1	1.0
46 item 46	54	602	.64 .15	.97	.80	-.2	-1.2
47 item 47	93	602	.01 .12	1.04	1.14	.5	1.2
48 item 48	72	602	.31 .13	.96	.85	-.4	-1.1
49 item 49	28	602	1.36 .20	1.00	.90	.0	-.4
50 item 50	277	602	-1.66 .09	.94	.93	-2.4	-1.3
51 item 51	351	602	-2.21 .09	.83	.81	-6.0	-3.7
52 item 52	327	602	-2.03 .09	.90	.90	-3.7	-2.0
53 item 53	170	602	-.81 .09	.91	.82	-2.2	-2.4
54 item 54	99	602	-.07 .11	.93	.78	-1.0	-2.0
Mean			.00	1.00	1.05	-.2	.1
SD			1.15	.06	.24	1.4	1.6