

2016

Gifted Students: Perceptions and Practices of Regular Class Teachers

Tracy Taylor
Edith Cowan University

Follow this and additional works at: <https://ro.ecu.edu.au/theses>



Part of the [Gifted Education Commons](#), and the [Teacher Education and Professional Development Commons](#)

Recommended Citation

Taylor, T. (2016). *Gifted Students: Perceptions and Practices of Regular Class Teachers*.
<https://ro.ecu.edu.au/theses/1933>

This Thesis is posted at Research Online.
<https://ro.ecu.edu.au/theses/1933>

Edith Cowan University

Copyright Warning

You may print or download ONE copy of this document for the purpose of your own research or study.

The University does not authorize you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site.

You are reminded of the following:

- Copyright owners are entitled to take legal action against persons who infringe their copyright.
- A reproduction of material that is protected by copyright may be a copyright infringement. Where the reproduction of such material is done without attribution of authorship, with false attribution of authorship or the authorship is treated in a derogatory manner, this may be a breach of the author's moral rights contained in Part IX of the Copyright Act 1968 (Cth).
- Courts have the power to impose a wide range of civil and criminal sanctions for infringement of copyright, infringement of moral rights and other offences under the Copyright Act 1968 (Cth). Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.

Gifted Students: Perceptions and Practices of Regular Class Teachers

This thesis is presented
in fulfilment of the requirement
for the degree of Doctor of Philosophy

Tracy Taylor

School of Education
Edith Cowan University
2016

USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

Abstract

The purpose of this research was to examine provision of differentiated learning experiences for gifted students in regular classes in Western Australian primary schools. Specifically, it was intended to explore differentiation strategies used with gifted students, issues faced by teachers in their efforts to provide for their gifted students, and teachers' suggestions on solutions for these issues.

Presently reality in Western Australia is that gifted primary students spend at least 90% of their time at school in regular classes. Therefore, the regular class teacher's role in implementing appropriate learning opportunities for these students is critical. Relevant literature clearly identifies the need for gifted students to engage in educational experiences commensurate with their abilities, and raises concerns that gifted students are not receiving appropriate differentiation in their educational programs. The lack of local research in this area makes it difficult to reach informed decisions about the appropriateness of current provisions for gifted students in regular classes, or to identify potential issues and solutions for teachers who try to do so.

A state-wide survey of Year 5 teachers provided information about regular class practices for gifted students, and issues for teachers in providing for their gifted students. Responses suggested that little differentiation takes place for gifted students, and that issues for teachers included time, resources, range of students, and knowledge in differentiating curricula effectively. Focus groups discussions with regular class teachers, and interviews with gifted education specialists, provided in-depth information about teachers' issues, as well as possible solutions to these issues. Analysis of teacher education courses from 35 universities across Australia showed that there is a distinct lack of teacher education in this area, both in undergraduate and post-graduate courses.

This study found that teachers are concerned about a range of class management issues, and have limited knowledge about giftedness and teaching gifted students. Recommendations from this research include providing teachers with appropriate professional development regarding gifted students, and direct support to implement differentiation in their regular classes.

Copyright and Access Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

- (i) Incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;
- (ii) Contain any material previously published or written by another person except where due reference is made in the text; or
- (iii) Contain any defamatory material.

Signed

Date...21/11/16.....

Table of Contents

Use of Thesis.....	i
Abstract.....	ii
Copyright and Access Declaration.....	iv
Table of Contents.....	v
List of Tables.....	xiii
List of Figures.....	xiv
Chapter One: Introduction.....	1
1.1 Introduction.....	1
1.2 Outline of Chapter.....	1
1.3 The Research Problem.....	2
1.4 Position of the Researcher.....	3
1.5 Purpose of the Study.....	4
1.6 Significance of the Study.....	5
1.6.1 Teachers.....	5
1.6.2 School Administration.....	5
1.6.3 Education Policy.....	5
1.6.4 University.....	6
1.7 Definition of Terms.....	6
1.8 Research Questions.....	8
1.9 Summary of Results.....	9
1.10 Structure of the Thesis.....	9
Chapter Two: Literature Review.....	10
2.1 Introduction.....	10
2.2 Definitions and Conceptions of Giftedness.....	11
2.2.1 An Evolving Definition.....	11
2.2.2 Current Considerations: Intersections and Divergences.....	13
2.2.3 The Definition Adopted for this Study.....	16
2.3 Learning Differentiation for Gifted Students.....	18
2.3.1 The Need for Differentiation.....	19
2.3.2 Prior Studies of Regular Class Differentiation.....	23
2.3.3 Specific Areas of Differentiation.....	23

2.3.3.1 Challenge	26
2.3.3.2 Thinking Skills.....	30
2.3.3.3 Choice	31
2.3.3.4 Curriculum Modification	34
2.3.3.4.1 Curriculum Compacting.....	34
2.3.3.4.2 Independent Research	35
2.3.3.4.3 Open-Ended Activities.....	36
2.3.3.5 Grouping	37
2.3.3.5.1 Ability Grouping for Gifted Students	37
2.3.3.5.2 Grouping Options in Regular Class/School Settings	39
2.4 Teacher Issues in Providing for Gifted Students in Regular Classes.....	42
2.4.1 Teacher Understanding of Giftedness.....	42
2.4.2 Teacher Beliefs about Giftedness, and Attitudes towards Gifted Students	44
2.4.3 Teacher Professional Development in Gifted Education.....	46
2.4.3.1 Pre-Service Teacher Education.....	48
2.4.3.2 In-Service Professional Development.....	48
2.4.4 Class Management.....	49
2.5 Conceptual Framework.....	50
2.6 Chapter Summary	52
Chapter Three: Methodology	54
3.1 Introduction.....	54
3.2 Research Questions.....	54
3.3 Design of this Study.....	54
3.3.1 Epistemological Considerations and Theoretical Assumptions.....	54
3.3.2 Methodology	55
3.4 Stage 1: Classroom Practices – Teacher Survey.....	60
3.4.1 Participants.....	60
3.4.2 Research Instrument.....	61
3.4.3 Procedure	61
3.4.4 Limitations	65
3.4.5 Method of Data Analysis	66
3.5 Stage 2: Focus Groups and Interviews.....	66
3.5.1 Participants.....	67
3.5.2 Research Instrument.....	67

3.5.3 Procedure	68
3.5.4 Limitations	69
3.5.5 Method of Data Analysis	69
3.6 Reliability.....	70
3.7 Validity	71
3.8 Ethics.....	71
Chapter Four: Data Analysis and Findings – Questionnaire Data	73
4.1 Introduction.....	74
4.2 Analysis of Questionnaire Section 1: Teacher Information.....	74
4.2.1 Teaching Experience.....	74
4.2.2 Teaching Qualifications	75
4.2.3 Professional Development in Gifted Education.....	75
4.3 Analysis of Questionnaire Section II: School Information.....	78
4.3.1 School Sector and Location	78
4.3.2 School Definition of Giftedness.....	78
4.4 Analysis of Questionnaire Section III: Class Information.....	80
4.4.1 Identification	80
4.4.1.1 Formally Identified Gifted Students	80
4.4.1.2 Informally Identified Gifted Students.....	82
4.4.1.3 Total Gifted Students (Formally and Informally Identified)	84
4.4.1.4 Identification Methods	85
4.4.2 Programs Available for Gifted Students	87
4.4.2.1 Off-site Gifted Programs.....	87
4.4.2.2 On-site Gifted Programs	89
4.5 Analysis of Questionnaire Section IV: Classroom Practices	91
4.5.1 Strategies that Provide Challenge	92
4.5.2 Strategies that Promote Thinking Skills	97
4.5.3 Strategies that Provide Choice	103
4.5.4 Strategies for Curriculum Modification.....	103
4.5.4.1 Curriculum Compacting.....	105
4.5.4.2 Research Strategies	105
4.5.4.3 Open-ended Activities	105
4.5.5 Strategies for Grouping Gifted Students.....	111

4.6 Analysis of Questionnaire: Open-Response Questions	112
4.6.1 Strategies Respondents Nominated as Useful for Gifted Students	115
4.6.1.1 Choice Strategies	115
4.6.1.2 Research	116
4.6.1.3 Open-Ended Activities	117
4.6.1.4 Thinking Skills	118
4.6.1.5 Independent Work	118
4.6.1.6 Peer Tutoring	119
4.6.1.7 Grouping	119
4.6.1.8 Extension	121
4.6.1.9 Pace	121
4.6.2 Issues Identified by Respondents which Affect Provision for Gifted Students	121
4.6.2.1 Time Issues	123
4.6.2.1.1 Preparation Time	123
4.6.2.1.2 Class Time	124
4.6.2.2 Resource Issues	126
4.6.2.3 Issues about the Range of Students in Regular Classes	128
4.6.2.4 Teacher Knowledge Issues	131
4.6.2.5 Other Significant Issues	133
4.6.2.5.1 Achievement	133
4.6.2.5.2 In-Class Support	135
4.6.2.5.3 Class Size	135
4.6.2.5.4 Classroom Size	136
4.6.2.5.5 Behaviour of Non-Identified Students	137
4.7 Chapter Summary	137
Chapter Five: Data Analysis and Findings – Focus Group and Interview Data	139
5.1 Introduction	139
5.2 Issue One: Time	141
5.2.1 Planning Time	141
5.2.1.1 Teachers View Lack of Time to Plan for Gifted Students	142
5.2.1.2 Teachers’ Concerns about Other Causes	143
5.2.1.3 Teachers’ View of catering for Gifted Students as “Extra” to their Normal Teaching Duties	144

5.2.2 Class Time	145
5.2.2.1 Time vs. Curriculum	146
5.2.2.2 Potentially Successful Options	148
5.2.3 Summary	149
5.3 Issue Two: Resources	150
5.3.1 Summary	153
5.4 Issue Three: Catering for a Wide Range of Students.....	153
5.4.1 Range of Student Learning Abilities/Inclusion.....	154
5.4.1.1 Teachers View Range of Students as Difficult.....	154
5.4.1.2 GES Views of “Different Rather than Extra”	156
5.4.1.3 Potentially Successful Options	157
5.4.2 Priority for Learning Support Needs.....	158
5.4.3 Summary	160
5.4 Issue Four: Teacher Knowledge	160
5.5.1 Teacher Knowledge about Giftedness	161
5.5.1.1 Definition of Giftedness.....	161
5.5.1.2 Cognitive Ability	162
5.5.1.3 Work Habits	163
5.5.1.4 Underachievement	166
5.5.1.5 Behaviour of Students Identified as Gifted.....	169
5.5.2 Teacher Knowledge about Identification.....	171
5.5.2.1 Methods of Identifying Gifted Students	171
5.5.2.2 Concerns about Teachers’ Ability to Identify Gifted Students	172
5.5.2.3 Dual Exceptionality	176
5.5.2.4 Early Identification	177
5.5.2.5 Gender and Identification	177
5.5.3 Teacher Knowledge about Provision	178
5.5.3.1 Concerns about Providing Challenge for Gifted Learners.....	178
5.5.3.2 Teacher Beliefs about Need for Provision	179
5.6 Issue Five: Teacher Professional Development in Gifted Education	181
5.6.1 Lack of Gifted Education in Pre-service Courses.....	181
5.6.2 Regular Class vs. Special Needs Training	184
5.6.3 Lower Priority for In-service Professional Development.....	186
5.6.4 Professional Development Strategies Thought to be Successful	187

5.6.4.1 Access to Information about Teaching Gifted Students	188
5.6.4.2 Networking or Collaboration with Professional Colleagues	190
5.6.4.3 Practical or In-Class Experience	192
5.7 Other Issues	193
5.7.1 Support for Teachers	193
5.7.2 Class Size (Number of Students)	195
5.7.3 Classroom Size (Physical Space)	196
5.7.4 Behaviour of Non-Identified Students	197
5.7.5 Curriculum Changes	197
5.7.6 Teachers' Personal Connection to Giftedness	199
5.8 Classroom Strategies Described as Successful to Provide for Gifted Students	200
5.8.1 Negotiated/Student-Centred Learning	201
5.8.2 Research/Project Based Learning	204
5.8.3 Open-Ended Activities	206
5.8.4 Thinking Skills Strategies	207
5.8.4.1 Support for Use with Gifted Students in Regular Classes	208
5.8.4.2 Low Frequency of Use	208
5.8.4.3 Concerns about Use of Thinking Skills	209
5.8.5 Peer Tutoring	212
5.8.6 Curriculum Compacting	214
5.9 Chapter Summary	215
Chapter Six: Synthesis of Findings and Discussion	217
6.1 Introduction	217
6.2 Research Question One	217
6.2.1 Teachers Recognise and Use Most Recommended Strategies	219
6.2.2 Infrequent Use of Strategies for Gifted Students	220
6.2.2.1 Use of Challenge Strategies	221
6.2.2.2 Use of Thinking Skills Strategies	222
6.2.2.3 Use of Choice Strategies	223
6.2.2.4 Use of Curriculum Modification Strategies	225
6.2.2.5 Use of Grouping Strategies	225
6.2.3 Teachers' Understanding of Differentiation Strategies for Gifted Students	226
6.2.3.1 Pace of Learning	226
6.2.3.2 Curriculum Compacting	228

6.2.3.3 Research Strategies	229
6.2.3.4 Open-Ended Activities.....	230
6.2.3.5 Ability Grouping (Same vs. Mixed)	232
6.2.3.6 Gifted Students Assisting Learning of Other Students	234
6.2.4 Teacher Knowledge about Differentiation.....	236
6.2.5 Summary of Research Question One.....	238
6.3 Research Question Two	238
6.3.1 Class Management Issues	239
6.3.2 Identification Issues	245
6.3.2.1 Potentially Unidentified Gifted Students	245
6.3.2.2 Methods of Identification.....	247
6.3.3 Teachers' Understanding of Giftedness Issues	250
6.3.3.1 Definitions and Conceptions of Giftedness	250
6.3.3.2 Underachievement	251
6.3.3.3 Need for Provision	254
6.3.4 Teacher Professional Development in Gifted Education Issues	256
6.3.4.1 Pre-Service Teacher Education.....	256
6.3.4.2 In-Service Professional Development Opportunities	259
6.3.5 Summary of Research Question Two	261
6.4 Research Question Three	262
6.4.1 Potentially Successful Classroom Strategies	262
6.4.1.1 Negotiated/Flexible Curriculum and Choice Strategies	263
6.4.1.2 Independent Research/Project-Based Learning	264
6.4.2 In-Service Teacher Professional Development.....	265
6.4.2.1 Improved Access to Information about Giftedness and Gifted Pedagogy..	266
6.4.2.2 Collaboration with Professional Colleagues	266
6.4.2.3 Practical Work with Gifted Students	268
6.4.3 Summary of Research Question Three	269
6.5 Chapter Summary	270
Chapter Seven: Conclusions and Recommendations	271
7.1 Introduction.....	271
7.2 Research Questions.....	271
7.3 Conclusions: Research Question One.....	271
7.4 Conclusions: Research Question Two	273

7.4.1 Perceptions of Curriculum and ‘Regular Class’	274
7.4.2 Concerns About Lower Achieving Students.....	275
7.4.3 Understanding of Giftedness.....	276
7.4.4 Teacher Professional Development in Gifted Education.....	277
7.5 Conclusions: Research Question Three	277
7.6 Overall Conclusions.....	277
7.7 Revised Conceptual Framework	280
7.8: Limitations of the Research and Generalisability.....	283
7.8 Recommendations for Practice	283
7.9 Recommendations for Research	285
References.....	287
Appendices.....	325
Appendix 1: List of 35 Instructional Strategies	325
Appendix 2: University Courses in Gifted Education	327
Appendix 3: Questionnaire – Western Australian Classroom Practices – Teacher Survey ..	333
Appendix 4A: Letter to School Principal (W.A. Department of Education School/Independent School Requesting Assistance with Questionnaire	337
Appendix 4B: Letter to School Principal (Catholic School) Requesting Assisting with Questionnaire	339
Appendix 4C: Letter to Year 5 Teacher (W.A. Department of Education School/Independent School) Requesting Assistance with Questionnaire.....	341
Appendix 4D: Letter to Year 5 Teacher (Catholic School) Requesting Assistance with Questionnaire.....	343
Appendix 5: Focus Group Invitation	345
Appendix 6: Follow-up Email to School Principal Requesting Assistance with Questionnaire.....	346
Appendix 7: Interview and Focus Group Discussion Guide	347
Appendix 8: Statement of Disclosure and Informed Consent for Focus Groups	348
Appendix 9: Interview Request Letter	350
Appendix 10: Statement of Disclosure and Informed Consent Interviews.....	352
Appendix 11: Coding Categories for Qualitative Analysis	354

List of Tables

Table 1: Data Collection Table	59
Table 2: Questionnaire Sampling Sizes by Stratum	61
Table 3: Return Rates of Questionnaire, Stratified by Sector and Location.....	65
Table 4: Teaching Qualifications Reported by Respondents.....	75
Table 5: Teacher Professional Development in Gifted Education.....	76
Table 6: Percentages of Questionnaire Returns by School Sector and Location.....	78
Table 7: Respondent Knowledge of Definition of Giftedness Used.....	79
Table 8: Formally Identified Gifted Students by Gender and Total Reported	81
Table 9: Informally Identified Gifted Students by Gender and Total Reported	83
Table 10: Total Number of Gifted Students Reported (Formal & Informal Identification)....	84
Table 11: Methods Used to Identify Gifted Students	86
Table 12: Gifted Students Participating in Off-Site Programs	88
Table 13: Types of Off-Site Programs Available to Gifted Students	88
Table 14: Gifted Students Participating in On-Site Programs	90
Table 15: Types of On-Site Programs Available to Gifted Students.....	90
Table 16: Challenge Strategies: Frequency of Use with Gifted Students.....	93
Table 17: Thinking Skills Strategies: Frequency of Use with Gifted Students	97
Table 18: Choice Strategies: Frequency of Use with Gifted Students	101
Table 19: Curriculum Modification Strategies: Frequency of Use with Gifted Students.....	105
Table 20: Grouping Strategies: Frequency of Use with Gifted Students.....	109
Table 21: Strategies Nominated for Gifted Students	114
Table 22: Issues Affecting Provision for Gifted Students in Regular Classes	122
Table 23: Time Issues Reported by Respondents	123
Table 24: Resource Issues Reported by Respondents.....	127
Table 25: Range of Student Issues Reported by Respondents	129
Table 26: Teacher Knowledge Issues Reported by Respondents	131
Table 27: Achievement Issues Reported by Respondents	134

List of Figures

Figure 1: Gagné’s Differentiated Model of Giftedness and Talent (DMGT).....	18
Figure 2: Conceptual Framework	52
Figure 3: Investigative Framework.....	57
Figure 4: Years of Teaching Experience	74
Figure 5: Revised Conceptual Framework	282

Chapter One

Introduction

1.1 Introduction

The aim of this research was to examine provision of differentiated learning experiences for gifted students in regular classes in Western Australian primary schools. Specifically, it was intended to explore differentiation strategies used with gifted students, issues faced by teachers in their providing for their gifted students, and teachers' suggestions about solutions for these issues.

1.2 Outline of the Chapter

This chapter firstly introduces the research problem, to present the context for the thesis in the local situation. The position of the researcher in regard to the topic is then explained to provide information relevant to the qualitative aspects of methodology and data analysis. The purpose of the research discusses the intended aims in exploring regular class practices and issues in providing for gifted students. The significance of the study presents the potential contributions for relevant stakeholders, including regular class teachers, school administrators, school system/education policy makers, and universities which offer pre-service and post-graduate courses for teachers. Definitions for relevant terms are provided for the purposes of this study. Finally, the organisation of the thesis is outlined to provide an overview of the following chapters.

1.3 The Research Problem

Present reality in Western Australia is that the majority of gifted primary students spend at least ninety percent of their time at school in regular, heterogeneous classrooms. It appears that this is also the case throughout Australia (Jarvis & Henderson, 2012), as well as internationally (Cathcart, 2014; Dimitriadis, 2012; Hong, Greene, & Hartzell, 2011; Koshy & Pinheiro-Torres, 2013; O'Reilly, 2013; Polyzopoulou, Kokaridas, Patsiaouras, & Gari, 2014; Riley & Sturgess, 2005). Therefore, the responsibility to provide appropriate learning experiences for these students lies with the regular class teacher. Given the fact of gifted students' presence in inclusive educational settings, the experiences received in this setting have the greatest potential to significantly influence gifted students' views of themselves and of learning, and their ability to achieve their potential and contribute to society. However, a strong body of research evidence suggests that regular class teachers struggle to cater for gifted students, establishing that provision for gifted students in this environment is problematic. Gifted students who are not provided with sufficient challenge in their classes may find school learning boring, discontinue engaging in lessons, and are therefore *at risk* of not achieving their educational potential- (Colangelo & Assouline; W. A. M. Peters, Grager-Loidl, & Supplee, 2000). If these students are not provided with appropriate learning experiences, they are also denied the opportunity to develop the psychosocial abilities required to maximise their potential. The most recent Australian Senate review into the education of gifted children reported that:

These children have special needs in the education system; for many their needs are not being met; and many suffer underachievement, boredom, frustration and psychological distress as a result. (Senate Employment, Workplace Relations, Small Business and Education Reference Committee, 2001, p. xiii)-

The current study sought to investigate regular class provision for gifted students within a Western Australian context, with a particular focus on exploring possible issues for teachers attempting to cater for their gifted students in this situation.

1.4 Position of the Researcher

As a classroom teacher, my interest in this area grew out of a concern about the expectations of managing learning for a wide range of students with little or no specific training or support. With inclusionary practices as standard, teachers are expected to cope with an increasing range of abilities in the one classroom. I have taught classes which for example, included two students who were unable to read or construct simple sentences, as well as eight students (a significantly high proportion) who had been identified as gifted, and offered places in the district's part-time extension programme for academically gifted students. In particular, my interest in this field was sparked by having a gifted underachiever identified in my class, and coming to the realisation that I did not have a clear understanding of how to cater for his learning. In discussions with professional colleagues, I found that they too experienced difficulties in catering for their gifted students.

The challenge of attempting to assist the development of obviously capable students, some of whom had developed an entrenched pattern of underachievement, while also catering to the varying needs of other students in a regular class, has created a continuing interest in the impact of regular classroom experiences on gifted learners. Even with an interest in gifted education, and attempting to provide a differentiated curriculum for gifted children in my classes, it was only when I engaged in post-graduate studies in the area that I realised how little knowledge I initially held in regard to understanding and catering for gifted learners. More recent experiences in working with pre-service teachers have developed an interest in

knowledge and understanding about gifted education acquired by teachers during their undergraduate course.

1.5 Purpose of the Study

This research aims to investigate the provision of differentiated learning experiences for intellectually gifted primary students in Western Australia. The lack of local research in this area makes it difficult to reach informed decisions regarding the appropriateness of current provisions for gifted students in regular classes, or to identify possible issues for teachers in trying to do so. The purpose of this two-phase, mixed methods study was to examine the extent of differentiation taking place for gifted students in regular classes in Western Australia, and to explore this context with a focus on teachers' views and experiences. The combination of survey and focus group/interview methods was designed to facilitate triangulation of findings, and provide a deeper understanding of potential issues facing teachers in catering for gifted students in regular classes.

This research therefore deliberately focuses on the regular class context, and is not designed to consider special class placement for gifted students. It is recognised that a major and contentious issue in the field of gifted education is regular versus special class placement as the most appropriate to meet the educational needs of gifted students; of whether it is possible to meet the needs of gifted students in the regular class, and to what extent. There seems to be shared acknowledgement that full-time provision in the regular class will probably not adequately provide for most gifted students, and that for at least some of the time, gifted students need to be grouped with other students of similar academic ability (Brulles, Saunders, & Cohn, 2010; Gentry & Owen, 1999; Hertberg-Davis, 2009; Rogers, 2002). While some researchers contend that full-time grouping for gifted students is preferable, or even necessary (Gagné, 2007; Shields, 1996; Vogl & Preckel, 2014), this is not

the present reality in Western Australia. Full-time classes or programs for gifted students are not available at primary level. It is therefore not intended in this research to further this discussion: rather to acknowledge both the issue (regular vs. special class placement) and the reality (gifted students currently spend most time in the regular classroom), and thus the necessity for making adequate mainstream provision for gifted students.

1.6 Significance of the Study

This research is intended to provide information regarding the education of gifted students in regular classrooms, and particularly an increased understanding of the teacher's role in achieving this. It is thus relevant to all participants in the education system responsible for the education of gifted students.

1.6.1 Teachers

It is hoped that this research will be useful to inform classroom practice in providing for gifted students. In particular, it provides teachers with further understanding of issues which may impact on their ability to cater for their gifted students, and some possible means of addressing these.

1.6.2 School Administration

Information from this research may be used to further assist school administrators to provide the support required for class teachers, access to professional development opportunities, and to create a positive culture for gifted education in schools.

1.6.3 Education Policy

The findings from this study could be used to inform policies to assist teachers in their efforts to cater for gifted learners, as well as development of in-service professional learning opportunities for teachers.

1.6.4 University

It is also hoped that this research will be of use to universities which offer undergraduate and/or postgraduate courses for teachers. University personnel responsible for designing and delivering courses for pre-service or practising teachers could possibly use the findings to improve offerings of gifted education within these courses.

1.7 Definition of Terms

For the purposes of this research, several terms need to be defined:

'Gifted' and 'Talented'

As this research intends to focus on gifted education provisions within Western Australia, it will adopt the current definitions used by the Western Australian Department of Education (Department of Education & Australia, 2011a; W. A. Department of Education). The current Gifted and Talented Guidelines provide the following definitions, which are based on those of Gagné (2004b, 2005, 2009):

Giftedness designates the possession and use of outstanding natural abilities, called aptitudes in at least one ability domain.

Talent designates the outstanding mastery of systematically developed abilities, called competencies (knowledge and skills), in at least one *field* of human activity. Talent emerges from ability as a consequence of the student's learning experience. (Gagné, F. 2005)

These definitions reflect the distinction between ability and performance and recognise other factors in the development of a person's giftedness into talents.' (Department of Education & Australia, 2011b, p. 3)

These guidelines also define a target group of ten percent of the population to be considered for gifted provision. Gagné's model is further explained in the Literature Review.

'Gifted Students' - The gifted students referred to in the research will therefore necessarily be defined as identified as gifted in their school situation.

'Regular or Heterogeneous Class' – A non-streamed or non-graded class where students are grouped together according to age, not abilities. This is the most common method of grouping students for instruction in Western Australian primary schools and assumes the presence of a variety of ability levels across all subject areas. The terms 'mainstream class', 'inclusion' or 'inclusive setting' also refer to a regular, heterogeneous class.

'Classroom Teacher' – Refers to a teacher of a regular, heterogeneous class, rather than to a teacher of gifted students or gifted specialist teacher.

'GES - Gifted Education Specialist' – Refers to teachers who specialised in teaching gifted students, by teaching in part-time gifted programmes, and/or providing advice and support to class teachers. These teachers are numbered GES1 - GES5 in the data analysis and discussion.

'GEC - Gifted Education Co-ordinator' – Refers to teachers who were also responsible for co-ordinating efforts for gifted students in their school.

'SAER' – Students at Educational Risk. This includes gifted students who are not achieving to potential.

'TAGS' – A commonly used acronym to identify Talented and Gifted Students.

'PEAC' – “Primary Extension and Challenge (PEAC) is a part-time withdrawal program for upper primary school Years 5-7 students. Identified gifted and talented students are selected to participate in differentiated programs offered in a range of delivery modes” (Department of Education & Australia, 2011c).

'Differentiation' – Is a way of thinking about classroom practice, which allows for learners at differing levels of current ability to learn simultaneously, rather than a specific strategy. It can be defined as “a systematic approach to planning curriculum and instruction for academically diverse learners” (Tomlinson, Brighton, & Hertberg, 2003, p. 3), or “an instructional model that provides guidance for teachers in addressing student differences in readiness, interest, and learning profile, with the goal of maximising the capacity of each learner” (Callahan & Hertberg-Davis, 2012, p. 287).

1.8 Research Questions

This research was designed to investigate three research questions:

1. What instructional strategies do teachers use to differentiate learning experiences for gifted students in regular classrooms?
2. What are some of the issues identified by teachers affecting the provision of differentiated learning experiences for gifted students in regular classrooms?
3. What do teachers suggest as some possible solutions to these issues?

1.9 Summary of Results

Findings from this research suggest that teachers in Western Australia struggle to cater for their gifted students, and that while teachers are aware of differentiation strategies, little differentiation for gifted students occurs in the regular class setting. This study also indicated that teachers are concerned with class management issues, and knowledge about giftedness and differentiation. Both quantitative and qualitative findings revealed information regarding teachers' concerns about classroom management issues such as time, resources and range of students. Teacher knowledge issues included identification of gifted students, understanding of giftedness, and professional development in gifted education. Teachers were able to suggest potential solutions for these issues, including developing flexible, project-based curricula negotiated with students, and professional development which involves access to information, collaboration with colleagues, and practical experiences with gifted students.

1.10 Structure of the Thesis

This thesis is organised into seven chapters. This chapter outlines the background and purpose of the study. Chapter two reviews the literature relevant to the study regarding giftedness, gifted provision, and issues for teachers in providing for their gifted students. Chapter three describes the methodology used in the study. The two following chapters outline the data collected (Chapter four from the questionnaire, and Chapter five from the focus groups and interviews), providing the main findings from these data sources. Chapter six synthesises and discusses the findings in relation to the research questions and relevant literature. Chapter seven then provides conclusions for each of the research questions, and recommendations for future practice and further research.

Chapter Two

Literature Review

2.1 Introduction

As indicated in chapter one, the purpose of this chapter is to review the literature relevant to regular class provision for gifted students. The chapter is divided into three main sections:

- Definitions and conceptions of giftedness
- Learning differentiation for gifted students
- Teacher issues in providing for gifted students

The first section, Definitions and conceptions of giftedness, outlines the issues in defining giftedness, discusses shared concepts and paradigms, and provides an overview of the definition used for this study. The second section, Learning differentiation for gifted students, explains the learning needs of gifted students which make differentiation necessary and outlines the research on classroom practices in five dimensions of differentiation: curriculum modification, challenge, thinking skills, choice and grouping. Prior studies of regular class provision for gifted students, while limited, present the research background available to this study. The third section, Teacher issues in catering for gifted students, outlines research on the effects of teacher understanding of giftedness, teacher beliefs about giftedness, and teacher education on providing for gifted students.

This review of the literature includes both primary and secondary sources. Where possible, primary sources have been used. However, secondary sources have also been included where they represent important ideas from key thinkers in the field. It is also acknowledged that many sources are based on U.S. research, as these dominate the field. Sources based on information from other educational systems have been included where

available, and include studies from Australia, New Zealand, Germany, the Netherlands, Ireland and the U.K. It is recognised therefore, that these differing contexts makes it difficult to generalise from the available literature.

2.2 Definitions and Conceptions of Giftedness

This section discusses three aspects in attempting to define giftedness for the purpose of this research:

- An evolving definition
- Current considerations: intersections and divergences
- The definition adopted for this study

2.2.1 An Evolving Definition

Definitions of giftedness have been linked to expanding definitions of intelligence over the past century, however as yet there exists no consensual definition of the term ‘gifted’. It is still debated in the literature as to whether a consensual definition of giftedness is necessary, relevant or even feasible. Many professionals in the field argue that an agreed definition, or at least a common conception, is imperative and the lack of one hampers scientific study (Ambrose, Van Tassel-Baska, Coleman, & Cross, 2010; Carman, 2013; Cohen, 2006, p. 292; Coleman, 2004; Dai, Swanson, & Cheng, 2011; Feldman, 1999; Gagné, 1999, 2004a; Hymer, 2013; Pfeiffer, 2003; Renzulli, 2012; Subotnik, Olszewski-Kubilius, & Worrell, 2012; Ziegler, Stoeger, & Vialle, 2012). However others doubt whether an agreed definition is desirable or even possible: that the search enables understanding, and that a definition in the scientific sense will continue to evolve from increased understanding of the phenomenon (Borland, 1999, 2004; Cramond, 2004; Hany, 1999; Makel, Putallaz, & Wai, 2012; McBee, McCoach, Peters, & Matthews, 2012; Pfeiffer, 2013).

The formal study of giftedness emerged from early twentieth century attempts in the field of psychology to understand and scientifically measure intelligence. When Lewis Terman used his self-developed Stanford-Binet Intelligence Scale (or I.Q. test) to identify the sample population for his seminal study of giftedness (Terman, 1925), and later used the term ‘gifted’ to refer to his subjects, the definition of giftedness became commonly equated with intelligence, as measured by an I.Q. test. This link to a comparatively limited view of intelligence (and to particular levels of I.Q.), resulted in narrow, uni-faceted definitions of giftedness, the notion of ‘cut-off scores’, and created a dichotomous concept of ‘gifted’ and ‘non-gifted’ persons, all of which persisted for several decades (Borland, 1997, 2009; Pfeiffer, 2012).

Dissatisfied with restricted psychometric definitions of both intelligence and giftedness, many researchers have since sought to broaden definitions of these terms, and clarify the relationship between them (Gagné, 1985, 2003, 2009; Gardner, 1983, 1993; Guilford, 1967, 1988; Marland, 1972; Renzulli, 1978, 1986, 2005, 2012; Sternberg, 1985, 1995, 2003, 2012; Subotnik et al., 2012; The Columbus Group, 1991; Ziegler & Phillipson, 2012; Ziegler & Stoeger, 2004). The range and complexity of models has led to increased exploration of the phenomenon, but not one agreed definition. It appears then that the search for an agreed definition of basic concepts in the study of giftedness has been extensive, with each of these definitions having influenced understanding of the phenomenon. While the field has not yet reached a consensus, these definitions do however include expanded domains of giftedness such as artistic, social, creative and psychomotor abilities, differentiate between general intellectual ability and specific academic aptitude, and take account of environmental, personality and motivational factors. Conceptions of giftedness have thus developed over time from static, uni-dimensional definitions, linked explicitly to a score on an intelligence

test, to broader, multi-dimensional conceptions encompassing outstanding ability in a variety of domains (Dai & Chen, 2013).

2.2.2 Current Considerations: Intersections and Divergences

For the present, it appears necessary to acknowledge the heterogeneity of the gifted population, and perhaps the heterogeneity of values and beliefs of those who study giftedness, and thus the difficulties of arriving at a shared scientific definition. Even amongst those who agree that a shared definition is necessary, there continues to be much disagreement about important aspects of the concept of giftedness. These include the differing viewpoints of the fields of psychology and education, the validity of different theoretical perspectives (Harder, Vialle, & Ziegler, 2014), whether a definition should serve a theoretical position or practical concerns (McBee et al., 2012), the size of the gifted population (Bélanger & Gagné, 2006; Delisle, 2012a; Gagné, 1999), whether it is even necessary to define the size of the population, or if the aim of studying giftedness is to promote self-actualisation in the individual, or eminence/production to society (Makel et al., 2012; Rinn, 2012; Subotnik et al., 2012). Thus the debate continues in the literature as to what constitutes giftedness, however it is useful at this point to outline areas where there appears to be some consensus.

Human abilities occur as a range across the population. The upper extreme level, as either an advanced general cognitive/intellectual ability or an advanced domain specific ability, is a necessary indicator of giftedness- (Alloway & Elsworth, 2012; Feldman, 1999; Gagné, 1999; Hany, 1999; Subotnik et al., 2012; L. A. Thompson & Oehlert, 2010)-. There is support for the idea that these abilities are innate or inherited (X. Duan, 2012; Gagné, 2012), however these abilities are also seen as malleable, and need deliberate cultivation and practice to be realised (Ericsson, Nandagopal, & Roring, 2005; Worrell & Erwin, 2011). It is argued that this

advanced ability enables an ease and speed of learning in the domain of giftedness, and the capacity to understand more complex concepts and relationships (Gagné & St Père, 2002; Passow & Frasier, 1996; Subotnik et al., 2012).

Giftedness is a social construction. Giftedness is now acknowledged by many in the field as a socially constructed concept which needs to be contextually defined, specific to time, place and culture. (Borland, 1997, 2004, 2009; Coleman, 2004; Dai & Chen, 2013; Heller, 2012; O'Connor, 2012; Pfeiffer, 2012; Riedl & Cross, 2005; Sternberg, 2007). This is arguably one of the most problematic aspects in agreeing on a definition of giftedness. It is now recognised that the repertoire of skills and knowledge, which would cause a person to be viewed as gifted, are unique to a particular culture (Passow & Frasier, 1996; S. J. Peters & Gentry, 2012; Sternberg, 2007), and thus creating a definition which is universally applicable to all cultures or social situations is challenging.

Giftedness is a dynamic, developmental process. Rather than being seen as an immutable ability, and thus perpetuate the decades-old nature-nurture debate, it is now the interaction of ability and environment which is the focus of research and education, adding to the ongoing debate about how to define giftedness. The process of gifted development is now seen as the combination of both internal and external factors (Braggett, 1997; Dai & Renzulli, 2008; Jung, 2012; Makel et al., 2012; Reis & Renzulli, 2009; Subotnik et al., 2012; Van Tassel-Baska, 2015; Worrell & Erwin, 2011; Worrell, Olszewski-Kubilius, & Subotnik, 2012; Ziegler, Stoeger, & Vialle, 2012). The development of gifted abilities is seen to be influenced by these internal and external factors, and much research is directed in these areas.

Factors internal to the individual, described as non-cognitive factors or psychosocial variables, include aspects such as motivation, effort, self-esteem, perseverance, interest, values, autonomy and resilience. These were identified by early researchers in the field as

important to the development of gifted ability (Haan, 1957; Hollingworth, 1942), and are universally recognised as essential in the current zeitgeist (Carman, 2011a; Clinkenbeard, 2012; Coleman & Guo, 2013; Dai, Moon, & Feldhusen, 1998; Fredricks, Alfeld, & Eccles, 2010; Freeman, 2006; Froiland, Oros, Smith, & Hirschert, 2012; Gagné, 2009; Garrett & Moltzen, 2011; Pfeiffer, 2012; Reis & Renzulli, 2009; Rinn, 2012; Subotnik et al., 2012; Treffinger, 1998; Ziegler, Stoeger, Vialle, & Wimmer, 2012). In a developmental concept of giftedness, abilities in these areas become as important as the domain ability, as explained by Subotnik, Olszewski-Kubilus and Worrell:

Both cognitive and psychosocial variables play an essential role in the manifestation of giftedness at every developmental stage, are malleable, and need to be deliberately cultivated (2012, p. 176).

While individuals possess varying levels of natural abilities for these internal traits, their development will be influenced by external factors.

Gifted development is also influenced by factors which are external to the individual, such as family, socio-economic status, school, teachers, mentors, provision, programs etc. (Gagné, 2009; Makel et al., 2012; Plucker, 2012). Ziegler's Systems Theory argues for the importance of these factors:

... Individuals who have achieved excellence share environments that facilitate learning. Clearly, explanations which situate giftedness within the individual – the IQ concept for instance – represent a gross over-simplification. Rather, the learning environment plays a pivotal role in the development of exceptionality (Ziegler & Phillipson, 2012, p. 10).

Children need to have access to appropriate learning situations, support from significant people, and expert guidance to be able to develop their abilities. For example, it can be seen that it would be impossible for a child who never has access to a violin or specialised tuition, to develop, or even discover, talents as a modern Yehudi Menuhin. Therefore, according to a general consensus among gifted education researchers, teachers and school experiences quite clearly play an essential role in the identification and development of gifted abilities.

2.2.3 The Definition Adopted for This Study

For the purposes of this study, the term ‘gifted’ will be defined as per Gagné’s Differentiated Model of Giftedness and Talent (1985, 2003, 2009) (DMGT, figure 1), as this is the policy definition used by the W.A. Department of Education, and the one with which participants in this research would be most familiar (if they are aware of a definition). This definition and model of giftedness/talent development has received widespread support in Australia, and is presently used as an official definition of giftedness by most Australian state education departments (Government of South Australia, 2012; N.S.W. Government, 2004; Queensland Government; The Department of Education Tasmania, 2012; Victorian Government & Development, 2013). The appeal of this model to educators is possibly shown by the endorsement of the Australian national curriculum:

Gagné’s Differentiated Model of Giftedness and Talent (2008) provides research-based definitions of giftedness and talent that are directly and logically connected to teaching and learning (Australian Curriculum Assessment and Reporting Authority, 2015, p. para 4).

Gagné's model expands on his definitions of 'giftedness' and 'talent' thus:

Giftedness designates the possession and use of outstanding natural abilities, called aptitudes in at least one ability domain.

Talent designates the outstanding mastery of systematically developed abilities, called competencies (knowledge and skills) in at least one field of human activity. Talent emerges from ability as a consequence of the student's learning experience (Gagné, F. 2005).

The DMGT shown in the diagram below, currently includes six domains of natural abilities or gifts (four as mental aptitudes: intellectual, creative, social, perceptual; and two as physical: muscular and motor control) which, via a developmental process, may potentially transform into competencies or talents in nine fields (academic, technical, science/technology, arts, social service, administration/sales, business operations, games/leisure, and sports). This model proposes that the catalytic effects of intrapersonal factors (physical, mental, awareness, motivation, volition) and environmental factors (including milieu, individuals and provisions) affect the development of abilities into talent. As educational experiences are part of the environmental catalysts which transform gifts (natural ability) into talents (above-average performance), the DMGT has significant implications for the experiences gifted students receive at school.

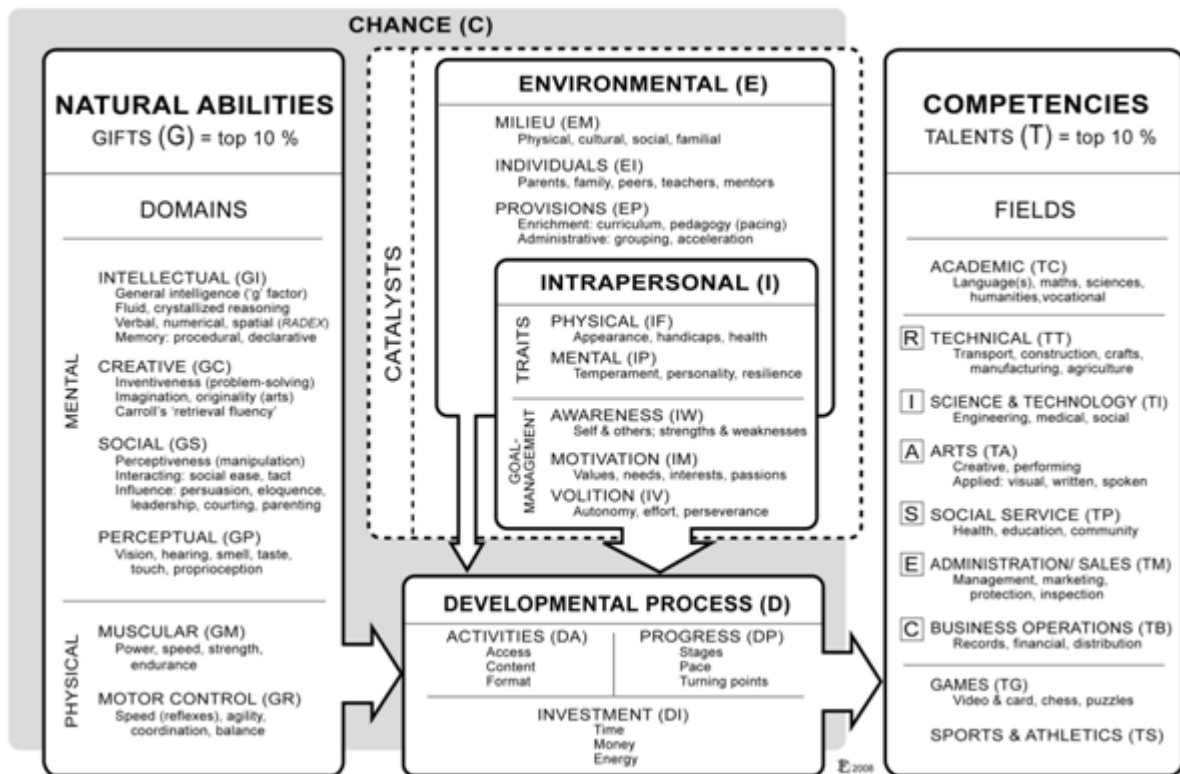


Figure 1: Gagné’s Differentiated Model of Giftedness and Talent (DMGT)

As stated in the preceding discussion, it is acknowledged that this definition is not representative of the views of all in the field. It is recognised that, like all currently available definitions of giftedness, the Gagne definition has drawn various criticisms. However, this study is not aiming to research the construct of ‘giftedness’ itself - in which case, closer examination of the criticisms of this definition might be required. This research is *applied* to classroom practice, therefore the definition used in practice in WA schools has been selected to inform the study. It is also acknowledged that while the Gagne definition espouses a multi-dimensional approach to giftedness, this study focusses on the intellectual/cognitive domain as this is the area most consistent with learning activities in primary school classes.

2.3 Learning Differentiation for Gifted Students

This section of the literature review discusses:

- The need for differentiation;
- Prior studies of regular class differentiation; and
- Specific areas of differentiation to be investigated in this research.

2.3.1 The Need for Differentiation

As a result of their advanced cognitive abilities, gifted students have particular learning characteristics, resulting in specific needs for their learning experiences. The ability to learn easily and rapidly, thought to be due to a higher speed of information processing, is often identified as a major, defining characteristic of intellectual giftedness (Calero, Belen, & Robles, 2011; Cohen, 2006; Duan, Shi, & Zhou, 2010; Gagné, 1999, 2003; Gagné & St Père, 2002; J. Gallagher, 2000; Johnson, Im-Bolter, & Pascual-Leone, 2003; Passow & Frasier, 1996; Subotnik et al., 2012). Gifted students also commonly display other cognitive abilities such as a highly retentive memory (Alloway & Elsworth, 2012; Gaultney, Bjorklund, & Goldstein, 1996; Geake, 2008), an early ability to think at abstract levels (Gross, 1999; Grubb, 2009; Harrison, 2004; Kettler, 2014; Pau-San, 2005; Persson, 2010; Sankar-DeLeeuw, 2004), and a capacity to understand complex concepts and the relationships between them (Morelock & Morrison, 1999; Parke, 1989; Passow, 1982; Van Tassel-Baska, 1988). A recurring theme in the literature is that gifted children commonly demonstrate a wide range of interests, which often differ from those of age peers: gifted abilities frequently result in an intense interest in particular areas, together with a strong curiosity and long attention span in their area/s of interest (Barbour & Shaklee, 1998; Gentry & Gable, 2001; Karnes & Johnson, 1997; Walker, Hafenstien, & Crow-Enslow, 1999).

Researchers contend that this advanced cognitive ability creates differing social and emotional development, and that gifted learners will need learning environments and teachers who are sensitive to these differences (Eddles-Hirsch, McCormick, Rogers, & Vialle, 2010; Peterson, 2009; Silverman, 1998). Researchers also caution that the gifted are not a homogeneous group, and that not all gifted students will display all of these abilities (Coleman, Saunders, & Cross, 1997; Reis & Renzulli, 2009). With the above characteristics and issues in mind, it can be seen that gifted children will be able to easily master the regular curriculum in a shorter time period, and that regular classroom practices will require substantial modifications in order to provide appropriately challenging learning experiences for them. Research has clearly shown that gifted students have differing cognitive, affective and social characteristics, that these differences are educationally significant, and require modifications to regular class programs (Davis & Rimm, 1994; Delcourt & Evans, 1994; Firmender, Reis, & Sweeny, 2013; Ford, Russo, & Harris, 1995; Hollingworth, 1942; Piirto, 1994; Terman, 1916; Van Tassel-Baska, Avery, Little, & Hughes, 2000). The literature has also shown that gifted students become bored and disengaged if not provided with suitable learning opportunities: “When bright students are presented with curriculum developed for age-peers, they can become bored and unhappy and get turned off from learning” (Colangelo, Assouline, & Gross, 2004b, p. 2). It is therefore widely recognised that differentiated learning is essential for gifted students (Bernal, 2003; Cooper, 2009; Delisle, 2012b; Johnsen, Haensly, & Ryser, 2002; Karnes & Johnson, 1997; Reis, McCoach, Little, Muller, & Kaniskan, 2011; Tomlinson et al., 2003; Vialle & Rogers, 2009; Weber, Johnson, & Tripp, 2013).

Differentiation can be defined as “a systematic approach to planning curriculum and instruction for academically diverse learners” (Tomlinson et al., 2003, p. 3), or “an instructional model that provides guidance for teachers in addressing student differences in

readiness, interest, and learning profile, with the goal of maximising the capacity of each learner” (Callahan & Hertberg-Davis, 2012, p. 287). Differentiation includes interdependent elements of content, process (instruction) and product (assessment) and is relevant to the regular classroom (environment), as it allows provision for a variety of learners to be integrated into the regular class program (Maker, 1993). The differentiated learning environment involves both physical and psychological dimensions, encouraging acceptance of differences, valuing intrinsic motivation and efficient use of classroom time, and allowing purposeful movement around the room. This requires a student-centred approach to learning which focuses on student strengths, ideas and interests, and promotes initiative and independence (Tomlinson, 2004; Van Tassel-Baska, 2013).

A discussion of differentiation for gifted students requires the acknowledgement that simple lateral enrichment (broader learning at the same level) is not considered appropriate, from two aspects. Firstly, that an enriched curriculum should be available to all students: “All children benefit from enrichment and all children should benefit from a classroom climate that is accepting and nurturing and that offers opportunities for creativity and challenge” (Gross & Sleaf, 2000, p. 4). Providing a simple enrichment program (i.e. activities from which all students could benefit) exclusively for gifted students prompts justifiable claims of elitism. Secondly, as simple enrichment by itself is not adequate for gifted students, enrichment at an advanced level is needed. For example, an average reader will benefit from age-appropriate enrichment via a wide range of reading materials, however a child gifted in reading (and perhaps already reading at the level of a child two or more years older) will not find challenge in ‘enriched’ reading material at his or her chronological age level. Simple lateral enrichment is not sufficient: the gifted reader will need enrichment at the level at which s/he is currently reading, i.e. more advanced level reading material (Firmender et al.,

2013; Reis & Boeve, 2009; Reis et al., 2011; Van Tassel-Baska, Bracken, Feng, & Brown, 2009).

Gifted students however need specific types of differentiation, which have been well documented in the literature (Caraisco, 2007; M. Gentry, Rizza, & Gable, 2001; M. Gentry, Rizza, & Owen, 2002; Housand & Housand, 2012). For example, Van Tassel-Baska and Brown (2007) summarised essential features of best practice for gifted students:

- The use of advanced curricula in core areas of learning at an accelerated rate;
- Group gifted students instructionally by subject area for advanced curriculum work that would be flexibly organized and implemented based on students' documented level of learning within the subject areas;
- Embedding multiple higher level thinking models and skills within core subject area teaching to enhance learning;
- The use of inquiry as a central strategy to promote gifted student learning in multiple modalities; and
- The use of student-centred learning opportunities that are issue- or problem- based and relevant to the student's world (p. 351-352).

It must also be recognised that the gifted are not an homogeneous group. As with all learners, they differ in their abilities, needs, interests and learning styles. Other factors such as age, culture, personality and gender may also influence learning preferences. While it is possible to discuss general learning characteristics and recommendations for differentiation, individual differences must be taken into account for these to be effective (Callahan, 2001; Kanevsky, 2011; Kaplan, 2009; Olenchak, 2001; Rubenstein, Siegle, Reis, McCoach, & Burton, 2012; Tomlinson, 2005; Van Tassel-Baska, Zuo, Avery, & Little, 2002; Vialle & Rogers, 2012).

2.3.2 Prior Studies of Regular Class Differentiation

As gifted students spend most time in regular class, differentiated learning experiences must take place in this situation. However previous studies have commonly found that little differentiation for gifted students actually occurs in regular classes. The Classroom Practices Survey (Archambault et al., 1993) was conducted as one of the early studies of the U.S. National Research Centre on the Gifted and Talented (NRCG/T), to determine the extent to which gifted and talented students receive differentiated education in the United States. A nationwide sample of third and fourth grade teachers was asked to self-report their perceptions of their teaching behaviour in relation to gifted and average students. The major finding of this study was that most regular class teachers made only minor modifications to regular curriculum to cater for gifted students, a result which was consistent for public and private schools, various types of school (rural/urban/suburban), regions of the country, and for teachers of ethnic minorities. The most likely provisions were advanced reading material, independent projects, enrichment worksheets, exposure to higher level thinking skills, or elimination of previously mastered material, however these modifications were not used widely. It was also found that there was little difference in regular class provision between schools with or without a formal gifted program.

A follow-up study (Westberg & Daoust, 2003), conducted after targeted professional development in gifted education, concluded that “teachers' differentiation practices in third and fourth grade classrooms have not changed in the last 10 years” (para 19). More recent studies have similarly found very little differentiation for gifted students in regular classes (Al-Lawati & Hunsaker, 2007; Endepohls-Ulpe & Thömmes, 2014; Gentry, Rizza, & Gable, 2001; Grubb, 2009; Maguire, 2008). Brighton’s observation study of classrooms, for example, found that “despite their stated positions, a significant gap existed between teachers'

verbal enthusiasm and the practices observed and discussed in their classrooms” (2003, p. 186).

From the small amount of research which has investigated the nature of differentiation in Australian primary classes, it appears that the situation is similar in Australian schools. Whitton (1997) obtained survey results from 600 Year 3 and 4 teachers in New South Wales, using similar research questions and instrumentation to the Classroom Practices Survey (Archambault, Westberg, Brown, Hallmark, Zhang, et al., 1993). With regard to provision for gifted students, Whitton concluded that: “the teachers who responded to the survey, made only minor modifications in the regular curriculum to meet the needs of gifted students” (Whitton, 1997, p. 37). This study also found that only thirteen percent of the teachers who responded reported that they had been involved in any pre-service education in gifted education, while forty percent had some form of in-service, and forty-six percent had no training in this area. Whitton’s recommendations included: the availability of extensive courses for all teachers on identification methods and curriculum modification; additional programs so that gifted students come into contact with gifted specialists who are trained to meet their needs; and development of curriculum materials designed for classroom teacher use. Two reviews of gifted education conducted by the Australian Senate Review Committee, have found similar results in the lack of current differentiation available, and recommended the necessity of differentiation for gifted students (Senate Employment, Workplace Relations, Small Business and Education Reference Committee, 2001; Senate Select Committee, 1988). More recently Jarvis and Henderson (2012) investigated provision for gifted students in South Australian schools (both primary and secondary) and found that:

Gifted education in SA, where it is recognised at all, may tend to be viewed as an “optional extra” to which schools are likely to attend only if there is time and money available once other priorities have been addressed ... (p. 20).

Some researchers have found successful elements of provision for gifted students, however they have also found that this relies upon high amounts of teacher professional development, as well as support and mentoring during implementation (Reis et al., 2011; Stoeger & Ziegler, 2010; Tieso, 2004; Tomlinson, 1995; Van Tassel-Baska, 2012; Van Tassel-Baska et al., 2008; Weber et al., 2013). For example, a three-year intervention study in year 3, 4 and 5 classes, found that support via prepared curricula materials enhanced differentiation (Van Tassel-Baska et al., 2008).

Very few studies have investigated teachers’ perspectives of regular class differentiation for gifted students. Johnsen et al. (2002) found that teachers viewed professional development, support from administration, mentoring and resources as useful in assisting differentiation in their classes. A nationwide survey of 900 teachers in the U.S. by Farkas and Duffett (2008) reported that the majority of teachers stated that differentiation was difficult to implement (84%), and favoured increased professional development to assist them in providing differentiation in their classes (90%). Researchers thus recommend that exploration of provision in regular classes, and the teachers’ role in this is needed: “A research question that would be timely in the present environment of inclusive classes would be: What are the attitudes of experienced teachers and what strategies are they presently using to meet gifted learners’ needs?” (Curtis, 2005, p. 139). The current study sought to investigate both the strategies for differentiation used by teachers in their classes, and to expand the information available about teachers’ views on differentiation.

2.3.3 Specific Areas of Differentiation Investigated in this Research

Based on information from previous studies, five dimensions of differentiation were identified for the purposes of this research:

- Challenge
- Thinking skills
- Choice
- Curriculum modification
- Grouping options

These are broad categories of ways in which teachers may differentiate learning experiences for gifted students, and are not seen as discrete or mutually exclusive. To some degree, these five dimensions overlap, for example thinking skills can provide challenge, or choices can be allowed in grouping arrangements as well as differentiated tasks or assessments; however, it is possible to discuss each separately. Thirty-five instructional strategies were identified from the literature to represent these five dimensions. These strategies provided the rationale for the structure of the questionnaire for Section IV: Classroom Practices, and are listed in Appendix 1. The relevance of each of the dimensions of differentiation, and representative strategies to the learning experiences of gifted students, is discussed in the following sections.

2.3.3.1 Challenge

The ability to understand new concepts easily, along with a highly retentive memory, creates a more rapid rate of learning, and a need for gifted students to receive an accelerated curriculum with less revision and less time spent on basic skills practice. A need for challenge in learning activities is thus recognised as a key issue in provision for the advanced cognitive abilities of gifted students (Burney, 2008; Eddles-Hirsch et al., 2010; Hollingworth,

1942; Little, 2012; Van Tassel-Baska, 2005), as current thinking places challenging curriculum at the centre of appropriate provision for gifted students:

A non-negotiable in a curriculum for gifted learners is a sound design that links general curriculum principles to subject matter features and gifted-learner characteristics. The curriculum for the gifted student must also be exemplary for the subject matter under study, meaning that it should be standards-based and, thus, relevant to the thinking and doing of real-world professionals who practice writing, engage in mathematical problem-solving, or do science for a living. Moreover, it should be designed to honor high-ability students' needs for advanced challenge, in-depth thinking and doing, and abstract conceptualisation (Van Tassel-Baska, 2005, p. 94).

The main content modification required to challenge gifted students is the inclusion of advanced material in their learning programme, such as investigation of real problems (Johnsen & Ryser, 1996; Van Tassel-Baska et al., 2000), interdisciplinary units based on complex, abstract ideas (Johnsen et al., 2002; Johnsen & Ryser, 1996; Tieso, 2005), and/or more challenging reading material (Dooley, 1993; Reis & Field, 2007; Reis et al., 2004; Shore & Delcourt, 1996). While there are obvious concerns about the use of advanced materials in a general education setting (Van Tassel-Baska, Johnson, Hughes, & Boyce, 1996), classroom teachers who are able or willing to differentiate the specific material used by students in their classes, enable gifted students to engage in challenging learning activities, while not causing difficulty for less advanced students.

An ability to learn at a faster rate, and therefore challenge gifted students, necessitates adjustments in the pace of learning, and requires that class teachers provide opportunities for students to work on activities at their own pace in the regular classroom (Assouline,

Colangelo, Heo, & Dockery, 2013; De Corte, 2013; Johnsen et al., 2002; Stoeger & Ziegler, 2010). Kanevsky's study of student opinions on differentiation practices (2011) found that self-pacing was the most highly rated differentiation strategy amongst gifted students, with over ninety percent of the survey population recording a positive rating for item 'learning at my own speed'. Researchers however caution that not all gifted students require faster paced learning all of the time. (Shore & Delcourt, 1996; Tomlinson, 2005). While the general concept of challenge for gifted students is discussed here, the heterogeneity of the gifted population, and thus the need to consider specific individual needs, must be kept in mind: what is challenging for one gifted student may not be challenging for another (Tomlinson, 2005).

Research has shown positive effects for gifted students from challenge in their learning experiences. In a synthesis of research on effective educational practices for gifted students, Rogers (2007) analysed forty studies showing benefits for gifted students when provided with challenging curriculum/learning program, including improved academic performance and intrinsic motivation. Researchers have also found socio-affective benefits for gifted students when provided with a challenging learning environment (Hebert, 2010; Reis & Renzulli, 2004; Robinson, 2004). In a recent Australian study, for example, Eddles-Hirsch et al. (2010) found that a challenging curriculum had a positive effect on students' emotional well-being.

The advanced cognitive abilities of intellectually gifted students means that their capacity for academic learning is usually well beyond that expected of their chronological age, and as a result they often find little challenge in the regular class curriculum. However, researchers investigating curriculum for gifted learners commonly find a lack of challenge for gifted students in the regular classroom curriculum (Archambault, Westberg, Brown,

Hallmark, Zhang, et al., 1993; Linn-Cohen & Hertzog, 2007; Reis & Boeve, 2009; Reis et al., 2004; Tomlinson, 2005; Van Tassel-Baska & Stambaugh, 2005; Vialle, Ashton, Carlon, & Rnkin, 2001; Westberg & Daoust, 2003), claiming for example, that: “the gap between current curricular units and the learning needs of gifted and talented learners is immense.” (Purcell, Burns, Tomlinson, Imbeau, & Martin, 2002, p. 319). In a content analysis of gifted programs, Van Tassel-Baska (2006) found that:

Differentiation in regular classrooms was significantly lacking when compared to gifted classrooms, suggesting that gifted practices have not impacted general teaching practice to the extent necessary for gifted students to profit from them (p. 205).

Several studies have investigated student opinions of challenge in their learning programs. While most of the 871 students surveyed by Gallagher, Harradine and Coleman (1997) rated their maths and specialist gifted classes challenging, less than half reported their core literacy, science and social science classes as challenging. These students commonly claimed that they spent large amounts of time either waiting for other students to catch up, or going through material they had already learned, or that teachers refused to allow them to work ahead of the group. Other studies similarly show that gifted students report spending large amounts of time waiting, rather than learning in regular classes (Kanevsky & Keighley, 2003; Peine & Coleman, 2010). Comparing the differentiation preferences for gifted students and non-identified students, Kanevsky (2011) found that students who had been identified as gifted more often reported that they wanted to learn about more complex concepts, where they explored the interconnections among ideas. More recently, Delisle (2012b) investigated the opinions of over 4000 gifted students on factors in their learning environment, via an online survey, finding that most were dissatisfied with the level of complexity and challenge

in their curriculum. In a recent Australian study investigating mother's perceptions of their gifted children's school experiences, Wellisch, Brown and Knight (2012) interviewed eleven mothers, all of whom stated their children reported a lack of challenge as an important issue.

This lack of challenge has shown negative effects for gifted students, both in academic and socio-affective areas of their development. An unchallenging curriculum has been found to be a significant indicator of classroom stress (Fimian, 1988) and a major contributor to boredom, reduced motivation and underachievement in gifted students (J. J. Gallagher et al., 1997; Kanevsky & Keighley, 2003; Little, 2012; Redding, 1989; Reis & McCoach, 2000; Reis & McCoach, 2002; Swiatek & Lupkowski-Shoplik, 2003; Vialle et al., 2001). Gifted education specialists thus claim that an unchallenging curriculum limits development of potential (Little, 2012; Purcell et al., 2002).

2.3.3.2 Thinking Skills

The ability to process complex ideas easily, and engage in abstract thinking is a defining characteristic of intellectual giftedness. It is therefore thought that much of the curriculum for gifted students should be directed towards developing these skills. The necessity and means of developing this ability in gifted students has been the subject of much research over the past century (Black & McCoach, 2008; Derryberry & Barger, 2008; Kettler, 2014; Rosselli, 1993). Differentiated activities which develop this ability include higher order thinking skills (H.O.T.S.), questioning and reasoning strategies, as well as problem-based learning, all of which potentially provide challenge in the learning program, and are considered a critical element of provision for gifted students. (J. J. Gallagher et al., 1997; Hertzog, 1998; Johnsen & Ryser, 1996; Maker, 1993; Maker, Rogers, Nielson, & Bauerle, 1996; Van Tassel-Baska, 2005, 2014).

Educators of the gifted recommend that the development of gifted students' thinking ability requires explicit teaching of thinking skills. (Burns & Reis, 1991; Van Tassel-Baska, 2014). Activities which involve higher level thinking skills tend to involve questions which allow for multiple answers, and enable students to contribute personal experience and knowledge to discussions. It is thus thought appropriate that a gifted education programme should include questions and activities based on higher level question organisers, such as the Revised Bloom's Taxonomy of Educational Objectives (Anderson & Krathwohl, 2001; Bloom, 1956), Krathwohl's Affective Taxonomy (1964), Kohlberg's Level of Moral Reasoning (1966), De Bono's Thinking Hats or CoRT Thinking (De Bono, 2000). These usually require students to explain their thinking and provide evidence of reasoning, allowing them opportunity to develop the ability to analyse their own thinking. For example, Van Tassel-Baska (1996) conducted a controlled study of a language arts curriculum, which required gifted students to provide a rationale to justify the selection of a title for a given text and create an expository text based on their reading, finding that the unit produced more positive results for the experimental groups. In a quasi-experimental design involving seven experimental and three control classes, researchers found that an integrated curriculum unit produced improvements in students' literary analysis, persuasive writing, and linguistic competency.

2.3.3.3 Choice

Offering students choices in their learning program is often recommended for all students, as a means of increasing autonomy and responsibility (Betts, 2004; Kohn, 2010). Choice is particularly relevant for gifted students, as it allows for a wider variety of interests, advanced content and a flexible pace of learning. Involving gifted students in decision making about their learning program also enables consideration of individual students' needs, interests and learning styles (Friedman & Lee, 1996; Gentry, 1999; Houghton, 2014; Maker,

2005, 1993; Renzulli, 1997; Rosselli, 1993; Ryser & Johnsen, 1996; Tomlinson, 2004; Tomlinson et al., 2003; Walker et al., 1999). Research clearly indicates that negotiation of learning experiences improves motivation and engagement for gifted students, and thus reduces underachievement (Caraisco, 2007; Colangelo, Kerr, Christensen, & Maxey, 1993; Gentry, Rizza, & Owen, 2002; Hughes, 1999; Kanevsky, 2011; Kanevsky & Keighley, 2003; Willard-Holt, Weber, Morrison, & Horgan, 2013; Zentall, Moon, Hall, & Grskovic, 2001). Street (2001) noted that, when offered choice in learning tasks, gifted students were more likely to choose more challenging tasks and create more complex products.

Gifted students' preference for choice in the learning program has also been found by researchers. Kanevsky (2011) found strong preferences for choice differentiations for both gifted and non-identified students (72%, 70%), with gifted students indicating their desire for choice of topic, resources, product, grouping arrangements and pace of working. Delisle's (2012b) survey of four thousand gifted students' opinions about differentiation concluded that choice produces relevance for gifted students. Acknowledging that gifted students often have intense interests in particular areas, it appears that participation in the construction of their learning programme affords them the *opportunity* to develop independent learning skills and maximise their learning. Following a case study of the research processes of gifted students, Bishop (2000) recommended that allowing choice of content and product are essential elements of independent research projects for gifted students. Negotiation of personal choices therefore appears to be particularly necessary for gifted students.

It is suggested that choice in activities needs explicit teaching, and is introduced to students gradually by offering limited choices at first (i.e. a choice of two activities, then three etc.) enabling students to develop the skills required to make more complex decisions efficiently (Rosselli, 1993; Shore et al., 1991). Bishop (2000) similarly found that students

needed specific assistance from teachers in learning how to make choices to develop the focus for their research projects. Kanevsky does however caution that students should also learn in other ways to broaden their repertoire of learning strategies: “Teachers cannot and should not constantly cater to students’ preferences. Students also need to learn in ways that are not of their choosing” (Kanevsky, 2011, p. 296).

Choice is particularly relevant to the regular class environment, as a variety of content and process modifications for all students in a regular class, allows the teacher to cater for individual differences (Van Tassel-Baska & Stambaugh, 2005). Reis et al. (2011) for example, found that allowing students in regular classes to choose their own instructional reading material improved achievement for students of all ability levels. Implementing activities for individual skills development, learning style preferences, and independent study, allows appropriate activities for gifted students to appear less obvious, making provision for gifted students less likely to be “viewed as a special privilege for a selected population” (Dooley, 1993, p. 548).

Researchers have however found that choice is not a common element in regular class programs for gifted students. The Classroom Practices Survey (Archambault, Westberg, Brown, Hallmark, Zhang, et al., 1993) investigated differentiation strategies used by a nationwide sample of year three and four teachers in the U.S., finding that teachers used choice provisions for gifted students less than a few times a month. Gentry, Rizza and Gable (2001) also concluded that gifted students were rarely offered choices within educational activities, recommending that “offering students choices should be a daily consideration in the planning of curriculum and instruction” (Gentry, et al., 2001, p. 126). Gentry et al. (2002) used the My Class Activities instrument to examine elementary students’ perceptions of choice in their learning program, finding a mean rating of “slightly more than sometimes”

(i.e. less than often). Correlation with teacher ratings of choice strategies from the Classroom Practices Study (Archambault, Westberg, Brown, Hallmark, Zhang, et al., 1993) found a small but statistically significant difference in the ratings of students' perceptions and teachers' perceptions of choice in the program (with teachers rating choice as more frequent). Gentry, Steenbergen-Hu, and Choi (2011) found that teachers identified as successful by gifted learners "offered student-centered, meaningful choices to their students, including choices in areas of focused or advanced study" (p.119).

2.3.3.4 Curriculum Modification

Curriculum modification involves adapting curriculum content, instructional practices and evaluation procedures in order to provide for differing students' learning needs (Salkind & Rasmussen, 2008). Three types of modification which are suitable to implement in a regular classroom for gifted students were identified: curriculum compacting, independent research, and open-ended tasks.

2.3.3.4.1 Curriculum Compacting

Curriculum compacting can be defined as:

The system designed to adapt the regular curriculum to meet the needs of gifted students by eliminating work that has been previously mastered or by streamlining work that may be mastered at a pace commensurate with students' abilities (Reis & Westberg, 1994, p. 128).

Acknowledged as one form of acceleration (Colangelo et al., 2004b), compacting involves the use of pre-tests or diagnostic measures to identify the students' pre-existing level of knowledge or skill, allowing the teacher to eliminate material the student has already mastered. This content is then replaced with more appropriate activities, and the student joins

the teaching group only for the skills or content they require. Curriculum compacting has been shown to be an effective means to systematically identify and replace irrelevant content with more challenging and meaningful learning experiences. For example, The Curriculum Compacting Study conducted by Reis et al. (1993), found that forty to fifty percent of regular curriculum material could be eliminated for identified students, and was thus alternatively titled ‘Why Not Let Gifted Students Start School in January?’ (i.e. four months after other students). Reis, Westberg, Kulikowich, and Purcell (1998) also found that achievement test scores for advanced readers were not affected when teachers used curriculum compacting to eliminate a similar amount of the regular reading curriculum. It is also recognised that curriculum compacting can be used for a variety of students, not just reserved for those identified as gifted, but that to implement this strategy, most teachers would require assistance to develop appropriate materials (Firmender et al., 2013; Johnsen & Ryser, 1996; Reis, Gentry, & Park, 1995; Reis et al., 2011; Reis & Westberg, 1994; Renzulli, 1995). The Classroom Practices Study also found that this strategy was used only moderately, little more than a few times a month.

2.3.3.4.2 Independent Research

With gifted students’ strong curiosity in areas of interest, independent research projects are a means of developing their inquiry and organisational skills, within the context of a problem-based learning situation. Students can be guided to develop autonomy to identify an investigable problem, generate hypotheses, gather evidence from multiple sources, draw conclusions, and present findings to relevant audiences. Engaging the problem solving abilities of gifted students has the potential to provide challenge for gifted students and increase motivation (Kanevsky, 2011; Repinc & Juznic, 2013; Van Tassel-Baska, 2013). Allowing students to investigate solutions for themselves, rather than being ‘taught’, enables

more choice and control over their learning, and is considered an essential component of differentiation for gifted students (Rowley, 2008; Van Tassel-Baska & Brown, 2007).

This type of inquiry learning, where students are encouraged to ask questions and discover patterns and generalisations, requires a change in the teacher's role from 'data-giver' to 'data-validator' (Roselli, 1993). In this view, teachers are required to assist students to develop inquiry skills, rather than provide information. Investigating gifted students' research processes, Bishop (2000) found that students required support in learning how to develop a focus for their research, and in co-ordinating information from multiple sources. Researchers in gifted education suggest that gifted students should be required to produce high-level, professional end-products (Renzulli & Reis, 2012; Shore & Delcourt, 1996) which reflect their abilities, and emulate those produced in the real world.

2.3.3.4.3 Open-Ended Activities

Open-ended activities are often cited in the literature as an appropriate curriculum modification for gifted students (Barone & Schneider, 2003; Hertzog, 1997; Johnsen, 2012). These types of activities involve experiments or tasks which have multiple paths to completion. Kanevsky's (2011) research into student learning preferences surveyed 646 primary students (416 identified as gifted and 230 non-identified), finding that over two thirds in both groups gave a positive rating for open-ended activities. Open-ended activities may be a particularly appropriate differentiation for the regular classroom, as they may be easily integrated with a regular class program. However a similar caution applies to this strategy, as discussed earlier in relation to enrichment. If posed at grade level, these open-ended activities are beneficial to all students and therefore do little to provide effective learning for gifted students. If an open-ended activity is used for gifted students, it needs to be at a more advanced learning level (Hertzog, 1997, 1998).

2.3.3.5 Grouping

This section discusses the literature relating to ability grouping for gifted students, as well as grouping options in regular classes.

2.3.3.5.1 Ability Grouping for Gifted Students

Grouping gifted students by ability provides opportunity for them to study complex concepts at an advanced pace, with intellectual peers. This also enables teachers to more successfully provide differentiated curricula and instructional strategies (Brulles et al., 2010). Ability grouping is still a contentious issue, although ample research over the past century has shown clear academic and achievement benefits in ability grouping for gifted students (Adelson & Carpenter, 2011; Azano et al., 2011; Neihart, 2007; Rogers, 1993, 2007; Shields, 1996; Tieso, 2003, 2005; Westberg, Archambault, & Brown, 1997). Most concerns about ability grouping for gifted students focus on two areas: affective or social effects on the gifted student; and possible negative effects on non-identified students, however neither of these concerns are substantiated in the research.

Little research is available on the socio-affective effects of ability grouping on gifted students. Some research shows possible negative effects for full-time grouping (with contention that this may be short-term adjustment), however in a review of research on grouping options for gifted students, Rogers (1993) concluded:

What seems evident about the spotty research on socialization and psychological effects when grouping by ability is that no pattern of improvement or decline can be established. It is likely that there are many personal, environmental, family, and other extraneous variables that affect self-esteem and socialization more directly than the practice of grouping itself (p. 10).

More recent research on socio-affective outcomes on ability grouping for gifted students has continued to be variable, leading Neihart (2007) to recommend that decisions about grouping need to be assessed on an individual basis.

With regard to the effect of ability grouping on non-identified students, Kulik's seminal meta-analysis of research on grouping (1992) recommended the use of ability grouping in schools, finding that: "ability grouping produced no adverse effects for students with average or below-average academic ability", and that students of all ability levels "profit from grouping programs that adjust the curriculum to the aptitude levels of the groups" (Kulik & Kulik, 1992, p. 76). Firmender et al. (2013) concluded that ability grouping enabled teachers to provide developmentally appropriate learning activities for the wide range of reading abilities in regular primary-aged classes. Other researchers have also made similar findings (Adelson, McCoach, & Gavin, 2012; Sellers, 2008).

While most gifted educators and researchers argue that gifted children need to be grouped with intellectually similar students for at least some the time (Feldhusen & Moon, 1992; Rogers, 2007; Rosselli, 1993; Sellers, 2008; Shields, 1996; Tomlinson, 2005), research has also shown that ability grouping needs to be combined with other strategies recommended for gifted students, in order to produce achievement benefits (Kulik, 1992; Mills & Durden, 1992). In meta-analyses of research on grouping options for gifted students, both Rogers (1991) and Kulik and Kulik (1992) found that both within-class and cross grade ability grouping was effective only when combined with curricular differentiation. It appears that simply grouping gifted students together doesn't improve achievement: this strategy must be used in conjunction with other strategies recommended for gifted students, such as advanced content, accelerated pace of learning, complex concepts, problem-based learning

and authentic assessment (Brulles et al., 2010; Lloyd, 1999; Neihart, 2007; Rogers, 2007; Vialle et al., 2001).

2.3.3.5.2 Grouping Options in Regular Class/School Settings

Same Ability Grouping

Acknowledging that gifted students spend most of their time at school in the regular class setting (Rosselli, 1993), relevant options for grouping by ability include: grouping with similar students within the regular classroom; via cross-setting (ability grouping across classes of the same grade); or by grouping gifted students with students in a higher grade (a form of acceleration). Flexible grouping arrangements in the regular classroom places students together on a short-term basis for specific instructional purposes or tasks, and has been shown to be effective for students of all ability levels (Azano et al., 2011; Clinkenbeard, 2012; Firmender et al., 2013; Neihart, 2007; Renzulli & Reis, 1994; Tieso, 2005; Van Tassel-Baska, 1992). Cluster grouping, where all gifted students in one grade are grouped together full-time in one of the classes, is also an option favoured in the research (Brulles et al., 2010; Pierce et al., 2011; Reis, Gentry, & Maxfield, 1998). For example, Gentry and Owen (1999) found positive effects for the achievement all students with cluster grouping arrangements, again when accompanied by curricular differentiation to suit the aptitude level of each group.

Mixed Ability Grouping

Mixed ability or heterogeneous grouping for gifted students however, has little support amongst researchers of giftedness (Fiedler, Lange, & Winebrenner, 2002; Rogers, 1998; Shields, 1996; Shore & Delcourt, 1996; Tieso, 2005), or amongst gifted students themselves (Delisle, 2012b; J. J. Gallagher et al., 1997; Kanevsky, 2011). While opportunities for group interaction enable students to develop co-operative working skills and leadership skills (Maker, 1993), there is much concern that the recent trends towards co-

operative learning and heterogeneous grouping have had a “negative impact . . . on gifted students’ academic growth and motivation to learn” (Dooley, 1993, p.). Researchers report reduced motivation and achievement for gifted students when they feel they have to do most or all of the work in the heterogeneous group (Clinkenbeard, 2012; J. J. Gallagher et al., 1997; Nelson, 2012; Ramsay & Richards, 1997). Hertberg-Davis (2009) argues that teachers new to differentiation may misunderstand the use of grouping, which: “can lead to practices such as using gifted learners as anchors in group work to ‘make sure work gets done’, using gifted students to help tutor other children, or sacrificing high level content for cute activities” (p. 252).

Investigating both gifted and non-identified students’ preferences for differentiation, Kanevsky (2011) found that both groups preferred to work with others who learned at the same pace. A key characteristic of gifted students is their speed of learning: by definition, gifted students are able to think and learn at a faster rate than chronologically aged peers. This makes it difficult for them to work with age peers in collaborative groups on academic tasks, particularly groups of heterogeneous ability levels, where other students may not understand their responses to activities. Researchers advise that gifted students find such situations frustrating, and are not be able to learn optimally, with Rogers therefore recommending that teachers:

Use whole group and mixed-ability group methods (such as cooperative learning) sparingly and perhaps only for socialization purposes. There is no well-controlled research evidence to suggest any achievement effect for this form of grouping with either highly able or gifted students (Rogers, 1998, p. 46).

Choice in Grouping

Several studies have shown that gifted students often demonstrate a greater preference for working individually, rather than in pairs or groups than non-identified students (Kanevsky, 2011; Rogers, 2007; Van Tassel-Baska, 1992). Kanevsky's study of learning preferences extended this understanding, finding that gifted students' preference for individual learning was likely to be dependent upon student choice of workmates: "More than 85% of the students in this study wanted to collaborate on projects in their favourite subject IF they chose their partner or group members" (Kanevsky, 2011, p. 292). Kanevsky actually found that both gifted students *and* non-identified students preferred to choose who they worked with in groups, and wanted to work with students who learned at a similar pace. From this research, it appears that gifted students would rather work alone than in situations where they feel unchallenged or overworked, and it is also possible that non-identified students may not feel comfortable working collaboratively with gifted students. Research therefore shows two forms of grouping choices relevant to gifted students: a possible preference for working individually; and, when they do work in groups, a preference to choose their workmates.

2.4 Teacher Issues in Providing for Gifted Students in Regular Classes

This section discusses issues in the literature regarding:

- Teacher understanding of giftedness
- Teacher beliefs about and attitudes towards giftedness
- Teacher professional development in gifted education
- Class management

2.4.1 Teacher Understanding of Giftedness

Relevant literature has shown that effective teachers of gifted students have a firm understanding of both characteristics of giftedness, and instructional practices to cater for advanced learning needs (Gentry et al., 2011; Graffam, 2006; Hong et al., 2011; Mills, 2003; Rowley, 2008; Westberg & Archambault, 1997). However prior research has strongly indicated that both pre-service and in-service teachers often lack this understanding, to the extent of holding uninformed conceptions of giftedness which are not sufficient to support effective practice (Bain, Bliss, Choate, & Brown, 2007; Baudson & Preckel, 2013; Diket, 2001; Farkas & Duffett, 2008; Grubb, 2009; Hansen & Feldhusen, 1994; A. M. Harris & Hemmings, 2008; Moon & Brighton, 2008). Studies of pre-service teachers' understanding of giftedness have found, for example, that most pre-service teachers did not believe they possessed the required knowledge (Curtis, 2005), were uncertain as to how to cater for student differences (Megay-Nespoli, 2001), or were surprised at gifted students' rapid rate of learning (Johnsen, 2003). Investigations of strategies used for gifted students by practising classroom teachers have also found a low level of understanding about giftedness and gifted provision (Archambault, Westberg, Brown, Hallmark, Zhang, et al., 1993; Grubb, 2009; Hong, Greene, & Higgins, 2006; Logan, 2011; Whitton, 1997). In addition, identification of gifted students has been found to be affected by teacher understanding of giftedness, with

research indicating that teachers' lack of knowledge affects their ability to reliably identify gifted students (Bracken & Brown, 2008; Elhoweris, 2008; Moon & Brighton, 2008; Neumeister, Adams, Pierce, Cassady, & Dixon, 2007).

Teacher confidence to provide differentiated curricula for gifted students in their classes also appears to be confounded by a lack of understanding of giftedness. Several researchers have found that classroom teachers lack confidence in their ability to differentiate learning for gifted students (Farkas & Duffett, 2008; Finley, 2008; A. M. Harris & Hemmings, 2008; Vialle & Rogers, 2012; Whitlock & DuCette, 1989). Hertberg-Davis (2009) contends that:

Misunderstandings about differentiation - that it is a form of scaffolding for struggling learners rather than a method of meeting the unique needs of all levels of learners, that it is primarily a group work strategy, that it is about providing fun choices rather than a thoughtful, concept-based curriculum - are prevalent in teachers new to differentiation (p. 252).

Scott, Webber, Aitken, and Lupart (2011) further asserted that teachers' lack of knowledge undermines their understanding and confidence about making decisions about provision for gifted students. Similarly, in investigating the link between teacher efficacy and willingness to differentiate instruction, Dixon (2014) found a positive relationship between teachers' sense of efficacy beliefs and development of understandings about giftedness and differentiation. Recent trends towards state testing programs have been shown to further reduce teachers' confidence to cater for gifted students (Moon, Brighton, & Callahan, 2003; Ryan & Weinstein, 2009; Scot, Callahan, & Urquhart, 2008), finding that, in response to the pressures of ensuring all students achieve well in these tests: "teachers are not likely to

engage in effective classroom practices but instead engage in one-size-fits-all practices” (Moon et al., 2003, p. 49).

One of the main findings from the 2001 Australian Senate Inquiry into Gifted Education was that provision for gifted students’ educational needs was inadequate, and that this seemed to stem from a lack of teachers’ understanding of the educational needs of gifted students. This inquiry found that teachers lacked knowledge about ways to identify gifted students, issues, suitable strategies, and the need to differentiate the curriculum. The final report stated: “many teachers feel a lack of expertise, lack of confidence and lack of resources to meet the needs of gifted children” (Senate Employment, Workplace Relations, Small Business, & Education Reference Committee, 2001, p. xi). Collectively, the evidence outlined in this section demonstrates a critical lack of understanding about giftedness within the teaching profession, which negatively affects both teachers’ confidence and ability to cater for these learners.

2.4.2 Teacher Beliefs about Giftedness, and Attitudes towards Gifted Students

Teachers’ beliefs and attitudes are important aspects in understanding the context of this research, as these factors have been shown to have a significant effect on gifted provision. A large body of literature has investigated the relationship between teachers’ understanding of giftedness, and their beliefs about giftedness, finding that teachers often hold stereotypical views of gifted students (reflecting those of the wider community) as high achievers, of higher SES backgrounds, or from the dominant culture, or that they do not need special provision (Berman, Schultz, & Weber, 2012; Braggett & Moltzen, 2000; Carman, 2011b; Carman & Taylor, 2010; Endepohls-Ulpe & Thömmes, 2014; Gross & Sleaf, 2000; Grubb, 2009; Lewis & Milton, 2005; Miller, 2009; Peterson & Margolin, 1997; Plunkett & Kronborg, 2011; Rizza & Morrison, 2003; Vialle, 2007).

Researchers contend that teachers develop beliefs about giftedness from early life experiences, and/or prior experiences as a student, which are often based on incorrect assumptions, and negatively affect their views of gifted students and provision of differentiation. (Brighton, Moon, Jarvis, & Hockett, 2007; Davies, 2012; Tomlinson et al., 1994; Van Tassel-Baska & Stambaugh, 2005). Curtis (2005) suggests that:

While community attitudes in Australia are positive towards giftedness which is displayed in the physical domain (e.g. sport, dancing), negative attitudes towards intellectual giftedness are widespread and allow such misconceptions to go unchallenged (p.139).

Berman et al. (2012) further argued that teachers' pre-conceived beliefs about gifted students were more significant in influencing their willingness and practice than specific training about gifted students.

Investigations of teachers' attitudes towards gifted students, or programs for gifted students, have shown that these range from mildly positive (Megay-Nespoli, 2001; Vialle & Rogers, 2012), to ambivalent (Curtis, 2005), to highly negative (Carrington & Bailey, 2000; Geake & Gross, 2008; Lassig, 2009; McCoach & Siegle, 2007). An Australian survey of 881 primary pre-service teachers, for example, showed that average students were clearly preferred over gifted students: "being gifted and striving toward academic excellence at school does not appear to elicit the support one would expect from our future classroom teachers" (Carrington & Bailey, 2000, p. 22). Educators' negative attitudes towards acceleration have been widely documented (Colangelo, Assouline, & Gross, 2004a; Hoogeveen, Hell, & Verhoeven, 2005; Siegle, Wilson, & Little, 2013).

In attempting to explain such negative attitudes, Geake and Gross' (2008) interpretation of their study of teachers' views was that: "the major cause of such negative affect is a deep concern about potential antisocial applications of the intelligence of gifted students" (p. 217), while Curtis (2005) found that teachers were uncertain whether gifted persons were a valuable resource for society. Both Curtis (2005) and Jung (2014) found that older pre-service teachers (over 25 years) were more likely to hold positive attitudes towards giftedness and provision: a concerning factor as the majority of teachers engaging in pre-service courses are usually of a younger age. Jung's (2014) survey of 241 Australian pre-service teachers further revealed that support for gifted provision could be predicted by lower power distance orientation, contact with gifted persons, and/or older age, while the perception that gifted programs were elitist was predicted by lack of experience with advanced curriculum and younger age. This would suggest that pre-service teachers' eventual effectiveness with future gifted students could be positively influenced by examining their own power distance orientation, contact with gifted persons, and experience with advanced curriculum.

2.4.3 Teacher Professional Development in Gifted Education

This section discusses the literature in regard to both:

- Pre-service teacher education; and
- In-service professional development.

2.4.3.1 Pre-Service Teacher Education

Relevant research suggests that information relevant to teaching gifted students may be lacking in pre-service teacher education. Pre-service teachers commonly report that they received little knowledge about giftedness in their undergraduate courses, and as a result, feel unprepared or lack confidence to meet the needs of these students (Bangel, Enersen,

Capobianco, & Moon, 2006; Bangel, Moon, & Capobianco, 2010; Bourne & Sturges, 2006; Chamberlin & Chamberlin, 2010; Curtis, 2005; Farkas & Duffett, 2008; Finley, 2008; A. M. Harris & Hemmings, 2008; Johnsen, 2013; Megay-Nespoli, 2001; Tomlinson et al., 1995). For example, Curtis' (2005) survey of 421 pre-service teachers found that most preferred not to teach gifted students: "as they believed they did not possess the strategies, knowledge, or experience necessary to address their needs" (p. 115). Bangel, Moon and Capobianco's (2010) study of a practicum experience with gifted students for pre-service teachers discovered that many of the participants were previously unaware that gifted students were present in regular classes, and therefore unaware of the need to develop an understanding of these students. Given the scarcity of units or courses on gifted education in pre-service provision (Taylor & Milton, 2006, 2008), teachers' lack of knowledge in the area is understandable. After examining teacher education issues, the most recent Australian Senate inquiry into gifted education recommended that:

The Commonwealth should propose to MCEETYA¹ that state and territory education authorities should require, as a condition of employment, that newly graduated teachers have at least a semester unit on the special needs of gifted children in their degrees. This should include training in identification of gifted children and the pedagogy of teaching them (Senate Employment, Workplace Relations, Small Business and Education Reference Committee, 2001, p. 96, Recommendation 14).

Carrington and Bailey's (2002) study of pre-service teachers' views on giftedness recommended that "gifted education should permeate the whole pre-service program as well as being the focus of specific courses" (p. 21). Despite these recommendations, and that of the previous Australian Senate enquiry (Senate Select Committee, 1988), investigation of

¹ MCEETYA – Ministerial Council on Education, Training and Youth Affairs

undergraduate teacher education courses in Australia shows that the gifted education included in these courses is still insufficient (Fraser-Seeto, Howard, & Woodcock, 2013; Plunkett & Kronborg, 2011; Taylor & Milton, 2006, 2008; Whitton, 2006). From this evidence, it appears that pre-service teachers graduate from their teacher education courses with very little understanding of how to teach gifted students. Megay-Nespoli (2001) suggests that for beginning teachers, potential obstacles to differentiation include both a lack of classroom management skills, and a lack of role models or mentors. Much research has therefore been directed at improving gifted education in teacher pre-service courses (Bain et al., 2007; Bangel et al., 2010; Chamberlin & Chamberlin, 2010; Goodnough, 2000; A. M. Harris & Hemmings, 2008; Hudson & Hudson, 2012; Johnsen, 2013; Moon, Callahan, & Tomlinson, 1999; Myers, 2013; Plunkett & Kronborg, 2011; Sugishita, 2003; Taplin, 1996; Tomlinson et al., 1995; Watters, Hudson, & Hudson, 2013).

2.4.3.2 In-Service Professional Development

If knowledge about teaching gifted students is not developed in pre-service courses, practising teachers will need to gain this understanding either from in-service professional development, or from post-graduate university courses. However, research consistently describes a lack of professional development opportunities for practising teachers (Avery & VanTassel-Baska, 2001; Koshy & Pinheiro-Torres, 2013; Nowikowski, 2011), as well as few options for post-graduate study in gifted education (Bourne & Sturgess, 2006; Kronborg & Moltzen, 1999; Taylor & Milton, 2006; Whitton, 2006) (Appendix 2). The literature thus suggests that development of teacher understanding also does not occur during their teaching practice, with teachers commonly reporting that they have been involved in very little specific professional development in teaching gifted students at any stage of their careers (Archambault, Westberg, Brown, Hallmark, Emmons, et al., 1993; Bourne & Sturgess, 2006; Johnsen, 2013). Given that appropriate professional development has been shown to create

measurable improvements in classroom practice (Hansen & Feldhusen, 1994; Johnsen et al., 2002; Kronborg & Plunkett, 2013; Rowley, 2008), researchers have called for increased professional development in gifted education for teachers (Cortina, 2011; Finley, 2008; Koshy & Pinheiro-Torres, 2013; Vialle & Rogers, 2012).

2.4.4 Class Management

While some researchers have cited teachers concerns' about class management as an issue affecting gifted provision (Fiddymment, 2014; Van Tassel-Baska & Stambaugh, 2005), the literature in this area is scarce. Based on informal surveys of gifted consultants regarding class teachers, Van Tassel-Baska and Stambaugh (2005) contend that classroom management is a common concern for regular class teachers, and one of the main reasons for teachers to discontinue efforts to differentiate. From this evidence and their observation studies of classroom differentiation, these researchers suggest that teachers' limited classroom management skills are a significant issue influencing differentiation for gifted students:

Educators must be comfortable allowing students the opportunities to work on different assignments, tasks, and levels of content throughout the course of a unit or lesson. Such differentiation often requires mobility in the room, use of learning centers, and careful record keeping of individual and group progress. Lack of strong skills in this area defeat the possibilities of successful differentiation (Van Tassel-Baska & Stambaugh, 2005, p. 212).

Research also shows that pre-service teachers are concerned with class management issues in regard to providing for gifted students in their future classes (Bangel et al., 2006).

Current literature suggests that increased teacher education in differentiation strategies can improve class management skills to enable teachers to implement

differentiation in their regular classes (Matthews, 2005; Sellers, 2008). Dixon et al. (2014) investigated teacher self-efficacy beliefs regarding differentiation, via quantitative analysis of two teacher surveys, finding that classroom management variation was not significant when teachers had engaged in increased professional development in appropriate instructional strategies. Similarly, Bangel (2010) found that learning experiences which involved teaching gifted students, increased pre-service teachers' confidence in their general teaching abilities.

2.5 Conceptual Framework

The conceptual framework for this research is represented diagrammatically in Figure 2. The theoretical concept of giftedness used in this study is shown at the left. According to information drawn from the literature, giftedness is described as an upper range of human abilities; a social construct; and a dynamic/developmental process. Two types of factors influence this developmental process – factors which are *internal* and *external* to the gifted individual. This research investigates two *external* factors affecting the provision for gifted students in regular classes: Teachers and Provision (via differentiated instructional strategies).

The three specific areas explored in this study are shown in the diagram below:

- **Instructional strategies** – Identified in the literature and represented as five dimensions of differentiation (challenge, thinking skills, choice, curriculum modification and grouping) are explored through specific teaching strategies in each dimension. These dimensions are not specifically discrete, and are thus shown overlapping each other, indicating the inter-relationships between the strategies.
- **Teacher issues** – As identified in the literature, these include teacher understanding of giftedness, beliefs about giftedness and attitudes towards gifted students, teacher

professional development in gifted education, as well as a range of class management issues. These are shown as influencing instructional strategies.

- **Teacher solutions** to the issues are not part of the research literature. This omission was identified as an important gap and a significant area of exploration for the current study. Thus possible solutions to the issues identified by teachers in this study were investigated and form part of the conceptual framework.

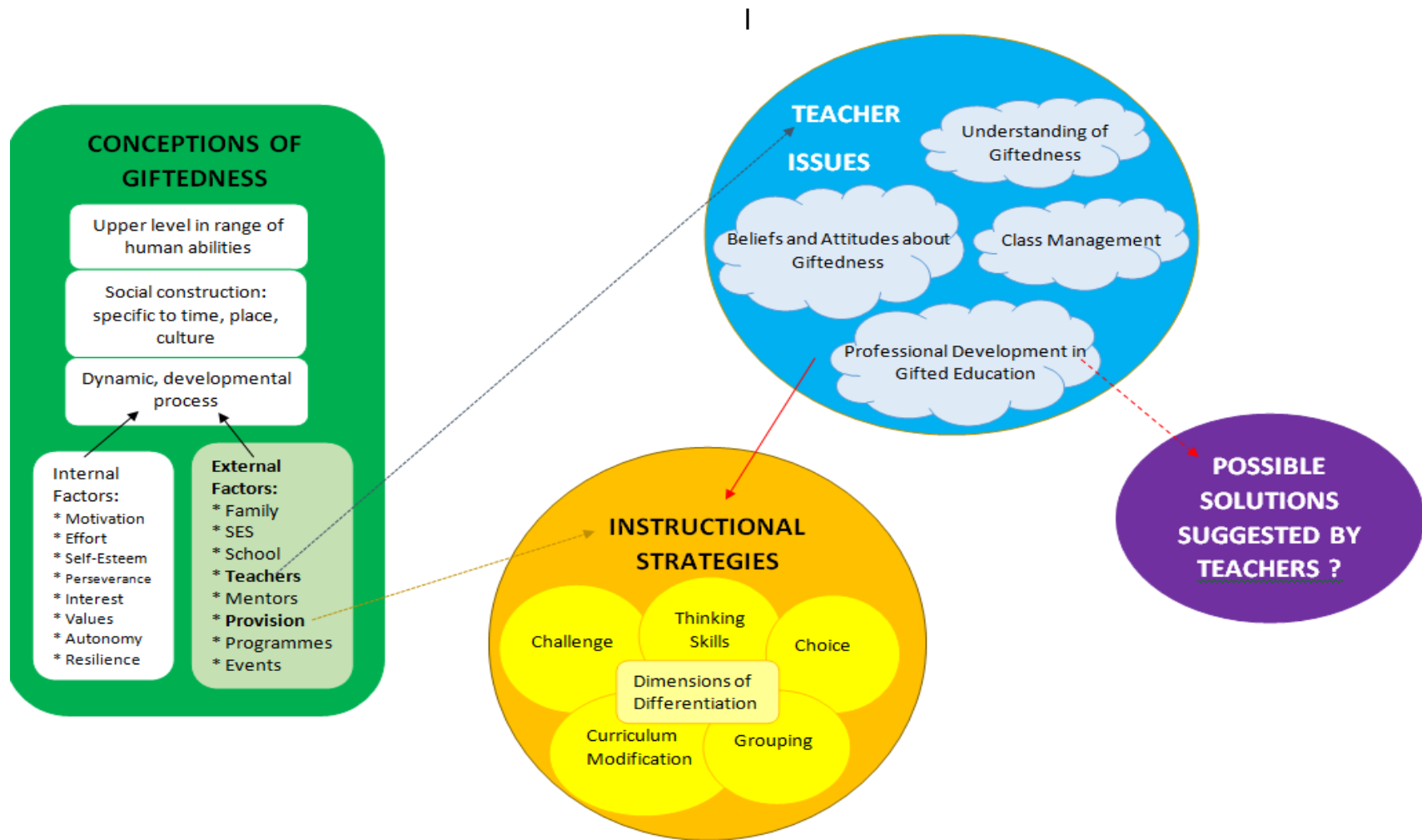


Figure 2: Conceptual Framework

2.6 Chapter Summary

Relevant literature identifies unique learning characteristics among gifted students. Appropriate learning experiences are essential to prevent boredom, concealment of abilities, enforced underachievement, and to allow gifted students the opportunity to realise their full potential. Research has clearly shown that gifted students have differing cognitive, affective and social characteristics, resulting in learning needs which necessitate modifications to regular class programs. While such research has identified many strategies which are considered to be appropriate to use with gifted students in regular classes, the use of these types of strategies does not appear to be widespread, suggesting that the educational needs of gifted students are not being met in the regular classroom.

The high proportion of time gifted students spend in regular classes establishes the necessity of offering adequate mainstream provision, with researchers acknowledging the need to focus research efforts on regular class provision. Research into teacher education in catering for gifted students, clearly identifies the teacher's role in creating appropriate learning opportunities, and the effect that specific professional development in this area has on provision for gifted learners. It is acknowledged that sources outside the field of gifted education refer to curriculum differentiation, and could perhaps be useful in informing this study. It was however decided to focus the review to literature most appropriate to this study in the main field.

Chapter Three

Methodology

3.1 Introduction

The purpose of this chapter is to explain the methodology used in this research. This chapter lists the research questions, before outlining the design of the study to give an overview of how the research was conducted. Epistemological considerations and theoretical assumptions are considered in terms of the three data collection methods. An investigative framework provides a visual reference for the research. The data collection for each of the two phases of the research is then described in two separate sections, detailing the participants, instrumentation, procedure, limitations, and method of data analysis for each stage. Finally, a summary provides links to the two following data chapters.

3.2 Research Questions

The research was guided by the following questions:

1. What instructional strategies do teachers use to differentiate learning experiences for gifted students in regular classrooms?
2. What are some of the issues identified by teachers affecting the provision of differentiated learning experiences for gifted students in regular classrooms?
3. What do teachers suggest as some possible solutions to these issues?

3.3 Design of the Study

3.3.1 Epistemological Considerations and Theoretical Assumptions

This research is positioned within a constructivist epistemological framework. A definition is offered by Crotty (2003): Constructivism is “the view that all knowledge, and therefore all meaningful reality as such, is contingent upon human

practices, being constructed in and out of interaction between human beings and their world and transmitted within an essentially social context.” From this perspective, one’s focus determines reality. As shown in the literature review, teachers’ provisions for gifted children rely on their personal beliefs about and attitudes towards giftedness. In dealing with gifted children in their classes, each teacher operates within a set of personal beliefs, which for them create their sense of reality about the situation.

The way that individual teachers construct their personal ‘reality’ about the nature of giftedness and the needs of the gifted learner will affect the means by which each teacher caters for gifted learners in his or her class. Therefore it was decided that the research methodology would focus on constructed rather than ontological reality. The intent was to investigate a sense of teachers’ reality, and explore any inherent issues in providing for gifted students in regular, heterogeneous classrooms.

3.3.2 Methodology

In order to explore the complexity of provision for gifted students in regular classes, it was decided to use a mixed methodology to examine the research questions for this study. Mixed methodology incorporates the use of both quantitative and qualitative methods to enable a richer understanding of the research problem. This allows method triangulation via examination of the same aspect of a situation from a deeper perspective (Hesse-Biber, 2010).

The purpose of the research was to examine differentiation for gifted students, with a focus on teachers’ views and experiences. A mixed-methodology allowed a pragmatic mix of quantitative and qualitative methods to suit this purpose. The research plan was developed using an explanatory mixed methods design in two

sequential phases, a quantitative phase followed by a qualitative phase. Cresswell (2011) explains that this design involves the use of quantitative results from phase one to inform decisions about phase two. While it was planned to include a second, qualitative phase prior to conducting the research, it was decided that the details of this phase would emerge from the interpretation of the results from phase one, rather than pre-determining this aspect of the study. Thus the research design incorporated both fixed and emergent elements, and is located along the continuum Cresswell (2011) describes between these two approaches.

Both quantitative and qualitative methods were used to collect and analyse data from three types of source: a descriptive survey via questionnaire, focus group discussions, and individual interviews. Collection of quantitative data included information regarding the use of various differentiation strategies, as well as teachers' recommendations for strategies and issues. This data was then further examined via qualitative methods from discussions with regular class teachers and gifted education specialist teachers. The qualitative data was used to provide possible explanations for trends in results from the initial quantitative data. This enabled the development of a more complete picture about differentiation strategies and teachers' issues than could be provided by the quantitative data.

The quantitative and qualitative strands of the design were connected in the data collection phase, as quantitative results from phase one were used to make decisions about data collection in phase two. Specific quantitative results which emerged from the phase one which needed further investigation included teachers' suggestions for successful strategies, and teacher identified issues which affected their provision for gifted students. The data strands were also integrated in the interpretation stage of the research, where data from each phase were used to explain

possible reasons for the results, and draw conclusions from the study. The two phases for this study are shown in Figure 3: Investigative Framework.

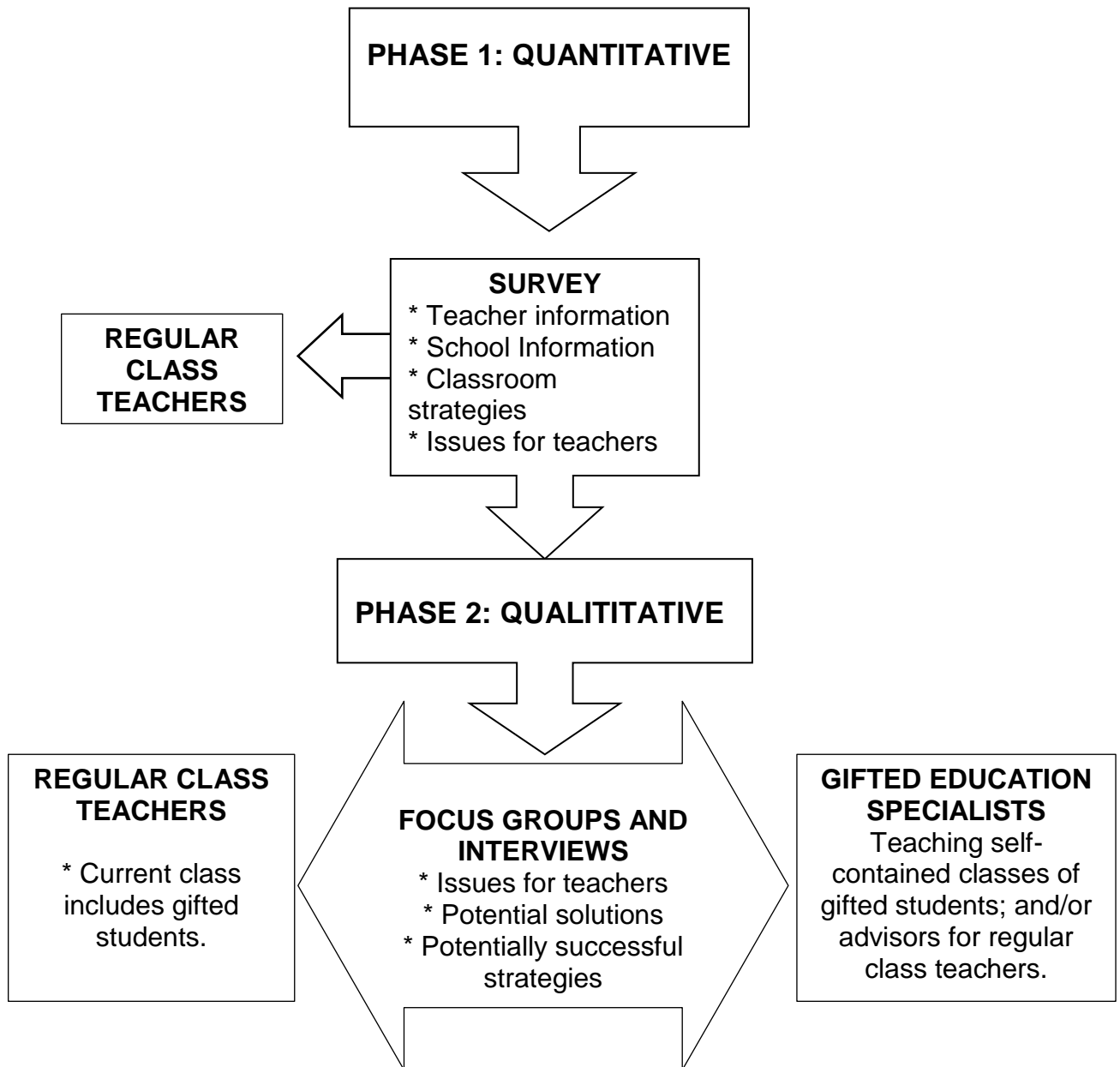


Figure 3. Investigative Framework

The first phase investigated provision for gifted students in regular classes via a state-wide survey of regular class teachers. Survey methods have been used extensively in gifted education research to collect data regarding classroom strategies. This study used survey via questionnaire to obtain a wide sample of information regarding teachers' professional experience, school location/sector, the number of gifted students in the class, and types of programs available. Teachers self-reported their use of specific classroom strategies which provided differentiation, as well as strategies they perceived as successful, and issues for them in catering for their gifted students. These data provided a statistical understanding of the use of various strategies, and of issues.

The data were then used to guide the development of the focus group and interview questions for the second phase. Hesse-Biber (2010) suggests that this use of data creates a more informed picture of the research situation. The second phase involved focus group discussions with practising, regular class teachers (which included some who were Gifted Education Co-ordinators (GEC) in their school), as well as individual interviews with Gifted Education Specialists (GES). These data provided an exploration of the context within which regular class teachers construct their understandings of giftedness, and how this understanding affects provision. From a constructivist paradigm, individuals construct a view of themselves and the features of the social environment, therefore the researcher's task is to find ways to reveal participants' constructions of social reality. Focus group discussions and interviews offer insight into an individual's socially constructed world, and opportunity to probe subjects' thoughts and ideas which cannot be directly observed. Freebody (2003) cautions, however, that interviews are no longer seen as a transparent view of reality; rather that the interviewer and interviewee are in fact

engaged in a dynamic social interaction, and the interview itself becomes an exploration of the issue in this situation. In this way, interviews can be seen as a ‘data-generating’ rather than a ‘data gathering’ method, therefore care must be taken in the conduct and interpretation of interview information to reflect that the information obtained is an interpretation of the issue under certain circumstances. Care must be taken to interpret the interview as one person’s interpretation of the situation, not the situation itself. The data collection for each of the two stages in this study is described in separate sections, as per Table 1 below.

Table 1
Data Collection Table

Type of Information	Data	Source of Data
Stage 1		
Teacher / Class Information	<ul style="list-style-type: none"> - Professional development in gifted education - Identification of gifted students - Class strategies - Teachers’ issues affecting provision 	<p>Survey (Questionnaire)</p> <ul style="list-style-type: none"> - Regular class teachers
Stage 2		
Issues for teachers	<ul style="list-style-type: none"> - Teachers’ perceptions of issues - GES perceptions of issues for teachers - Teachers/GES views of successful strategies and possible solutions to issues. 	<p>Focus groups</p> <ul style="list-style-type: none"> - Regular class teachers (subset of survey respondents) <p>Interviews</p> <ul style="list-style-type: none"> - Gifted education specialist teachers

3.4 Stage 1: Classroom Practices – Teacher Survey

This section discusses the first phase of the data collection. It describes the participants involved, the instrument used, the procedure of the data collection, limitations, and the analysis of the data.

3.4.1 Participants

As this research focuses on teachers as the principal medium of curriculum differentiation for gifted students, the main participants sought for this stage of the study were teachers of regular, heterogeneous, Year 5 primary classes within Western Australia. To increase the precision of data, it was decided to limit this part of the study to teachers of one year-level. Formal procedures are normally used in Western Australian Education Department schools to identify gifted students for the first time late in Year 4, therefore it was decided to obtain information from teachers of Year 5 students. An initial list of schools with Year 5 students was based on information from the Australian Bureau of Statistics 2001 census.

Several types of schools were excluded from the initial list as they did not fit the study criteria of regular classes. These included education support centres, schools of the air, and hospital services. Schools with less than five year 5 students were also not included. This left a total of 758 eligible primary schools. It was decided that a sampling rate of 80% of this total population would be sufficient, as this allowed for greater than a 99% confidence level, with a confidence error of <3%. This would indicate a >99% confidence level that the responses would lie within a $\pm 3\%$ range (Cohen, Manion, & Morrison, 2011). Stratified sampling was used to ensure a representative sample of the whole population (Schofield, 2006). The eligible schools were then stratified into six sectors by three school systems (Government / Catholic / Independent), and two locations (metropolitan /rural).

Schools were listed alphabetically, by school district, within each stratum. Systematic sampling of each stratum ensured that the number of schools selected were proportional to the number in each stratum, and also proportional to the education districts represented within each stratum. A total of 600 questionnaires were thus mailed to 80% of eligible schools. The numbers selected for each sector, giving stratified proportions, are shown in Table 2.

Table 2

Questionnaire Sampling Sizes by Stratum

	Government	Catholic	Independent
Metropolitan	244 (308)	58 (74)	53 (67)
Rural	188 (237)	38 (48)	19 (24)
TOTALS	432 (545)	96 (122)	72 (91)
TOTAL SCHOOLS = 600 (758)			

Key: Number of schools selected (number of schools eligible)

3.4.2 Research Instrument

To survey teachers regarding their self-reported classroom practices for gifted students, a questionnaire was designed using a similar format to ‘The Classroom Practices Questionnaire’ (Archambault, Westberg, Brown, Hallmark, Emmons, et al., 1993). The Western Australian Classroom Practices – Teacher Survey (included as Appendix 3) was designed with a mix of open and closed questions to provide coverage of required information, as well as to allow respondents to express their opinions on some areas. The questionnaire included five sections. The items for the first four sections were closed or semi-closed, and intended to elicit specific information about the teacher, their situation and their teaching practices regarding gifted students. The final, open-response section was designed to allow respondents to

use their own words to express strategies or issues which they thought were relevant.

These five sections are outlined below:

- i. **Teacher Information** - Three questions about teacher professional development (general, and in gifted education) and years of teaching experience. These were included as the literature has shown that teacher experience and education in giftedness appear to be significant factors affecting provision.

For example:

Training in teaching of the gifted and talented (please tick all that apply)

	None
	Undergraduate lectures as part of a unit or course at Teachers' College/University
	Undergraduate whole units in gifted education at Teachers' College/University
	District in-service
	Workshop or conference outside district
	Postgraduate units or course in gifted education
	Postgraduate degree in gifted education

- ii. **School Information** – Three items sought information about the education sector (State/Catholic/Independent), location (rural/metropolitan) and the use of a formal definition of giftedness by the school or district. These questions enabled identification of sector and location in returned questionnaires, in relation to the stratification sampling, as well as school definition of giftedness.

For example:

Does your school or district use a formal definition of Giftedness?

Yes

No

Don't know

iii. Class Information – This section included ten questions, and was designed to gather information on the numbers of identified and non-identified gifted students (by gender), identification methods used, gifted education programs available to students in the class (both on- and off-site), as well as student access to computers. Identification issues have been shown to be significant, both in terms of numbers identified and teachers’ method/ability to identify gifted students, thus these questions enabled collection of data regarding these factors.

For example:

How many Year 5 students in your class have been formally identified as gifted?

_____ boys _____ girls

iv. Classroom Practices - This section contained 35 items asking respondents to rate the frequency of specific, relevant classroom strategies for gifted students. Respondents were asked to rate the frequency of use for each of the strategies for gifted students in their class on a scale:

1 = Never

2 = Seldom (once a month or less frequently)

3 = Occasionally (a few times a month/weekly)

4 = Often (several times a week or more frequently)

The individual items were worded to reflect common activities which primary teachers would include in their classes, to increase reliability of interpretation.

These were developed around five dimensions of differentiation which were identified from the literature:

1. Providing challenge (Items 1, 2, 3, 20, 29, 32)
2. Thinking skills (Items 23, 24, 25, 34, 35)

3. Providing choice (Items 4, 6, 9, 10, 11, 12)
4. Curriculum modifications (Items 5, 13, 14, 15, 26, 27, 33)
5. Grouping options (Items 7, 8, 16, 30, 31)

As explained in the literature review, these are not mutually exclusive categories, and were used for convenience in organising similar aspects of differentiation.

- v. Three open response questions asked respondents to identify: strategies they found successful for gifted students; issues they thought affected provision for gifted students in their classroom; and any other comments they thought relevant regarding provision for gifted students in the regular classroom.

The questionnaire was pilot-tested with practising teachers and revised prior to data collection for the study.

3.4.3 Procedure

The mailing for the questionnaire was addressed to the school principal, who was asked to pass the relevant forms on to a Year 5 teacher at their school. The initial mailing package consisted of introductory letters to the school principal (Appendices 4A and 4B) and teacher (Appendices 4C and 4D) explaining the nature and purpose of the questionnaire, the questionnaire itself (Appendix 3), an invitation to the teacher to participate in a focus group discussion (Appendix 5), a thank you note, and a stamped return envelope. Ethical issues such as confidentiality, anonymity, and the right to withdraw were included in both letters. The questionnaires were numbered and linked to a school to enable follow-up of non-respondents. This number was removed on return of the questionnaire.

Three weeks after the initial mail-out, an email reminder message was sent to all schools which had not yet returned the questionnaire (Appendix 6). A follow-up

mailing was sent to all non-respondents after another week. This included letters to the principal and teacher, a copy of the questionnaire, a thank you note and a stamped return envelope. All responding schools were thanked via email, to acknowledge receipt of their information and their assistance with the study. Confidentiality of results was ensured as the questionnaires were de-identified upon return and individual teachers, schools or districts are not identified in the results or discussion. If requested, respondents were provided with a summary of the survey results. A total of 191 questionnaires were returned, giving a response rate of 31.8%. The proportions of each sector and school location are shown in Table 3.

Table 3

Return Rates for Questionnaire Stratified by Sector and Location

Sector/Location	Government	Catholic	Independent
Metropolitan	75 (244)	16 (58)	16 (53)
Rural	64 (188)	14 (38)	6 (19)
TOTALS	139 (432)	30 (96)	22 (72)
TOTAL SCHOOLS = 191 (600)			

Key: Number returned (number sent)

3.4.4 Limitations

It is acknowledged that the collection method of the quantitative data could create potential difficulties, specifically in the return rate of survey research and that the survey is based on self-report data. It was considered important to obtain baseline information from a large sample and thus the necessity of a mail-out questionnaire. Sample sizes for the questionnaire were carefully chosen to retain statistical validity, allowing for a minimum 30% return rate. It is also recognised that a self-report questionnaire will tend to produce subjective responses which may reflect social desirability rather than true results.

3.4.5 Method of Data Analysis

The returned questionnaires were coded numerically to facilitate analysis via the Statistical Package for Social Scientists (SPSS) software. Responses for each of the closed and semi-closed questions (sections I-IV) were coded prior to entry on the SPSS program, to enable the identification of patterns in the data. Responses for the open questions (section V) were analysed both quantitatively, to discover the frequencies with which teachers identified strategies or issues, and qualitatively (via thematic analysis) to enable teachers' voices on recurrent themes to emerge.

3.5 Stage 2: Focus Groups and Interviews

This section discusses the second stage of the data collection. Individual interviews with gifted education specialists (GES), and discussions with focus groups of regular class teachers were carried out to provide insight into reasons behind responses to the questionnaire, and to explore issues facing teachers in catering for gifted students in the regular classroom. The following describes the participants involved, the instrument used, the procedure of the data collection, and the analysis of the data.

3.5.1 Participants

Focus Groups

Two focus groups, each of five regular class teachers were conducted. An invitation to participate in the focus group discussions was included (on a separate sheet of paper) in both the initial questionnaire mail-out and the follow-up mail-out. Participants were chosen according to their willingness to be involved, as identified by their response to the invitation. By geographical necessity, these were limited to the Perth metropolitan area, one group in the northern suburbs and one in the southern suburbs. While all of

these teachers had an interest in provision for gifted students, some were the gifted and talented co-ordinators in their school, and had more experience and knowledge in gifted education. These teachers are referred to in the data analysis as GEC (Gifted Education Co-ordinators).

Interviews

Individual interviews were conducted with each of five gifted education specialist teachers (GES) during the course of the research. These teachers were selected by availability. All had previous regular classroom experience, and were currently practising as either advisors in gifted education in their sector, or as teachers of gifted programmes, or both, and were highly experienced in catering for gifted students. Their views were sought to add breadth to the study, due to their ability to share observations of many classroom teachers' efforts in catering for gifted students.

3.5.2 Research Instrument

The following questions provided direction for the focus group discussions and interviews (see Appendix 7):

1. How are gifted students catered for in your school/district?
2. What do you see as some of the issues facing teachers in providing for gifted students in regular classes? What solutions could you see for these issues?
3. In a state-wide survey of teachers, four issues of concern were identified:
 - Lack of time
 - Access to resources
 - Range of students in class
 - Knowledge about giftedness/strategies for gifted students

Are you confronted by any of these issues in catering for your gifted students?

If so, what solutions could you see for these issues?

4. What are some successful strategies for gifted students you have used, or seen used in regular classes?

3.5.3 Procedure

Focus Groups

Prior to participation, each teacher signed a statement of disclosure and informed consent (Appendix 8). Each focus group met once to discuss issues raised in the questionnaire, and to highlight specific concerns or issues held by teachers, which were perhaps not covered in the survey. Informal, semi-structured focus group discussions enabled the participants the greatest range to express their ideas in relation to the topics discussed. This was seen as the most efficient way of collecting information on the perceptions of several teachers. The interaction of the group members allowed an in-depth discussion to develop, which facilitated exploration of the issues involved. The group discussions were recorded with the participants' permission and transcribed.

Interviews

Interview participants (gifted education advisors and specialist teachers) were approached via a letter requesting an interview (Appendix 9). Semi-structured interviews (Freebody, 2003), in which general questions guide the discussion but allow the conversation to flow according to what was relevant to the interviewee, were thought most appropriate to investigate issues arising from the questionnaire. Specific questions and issues for discussion were based on the information obtained from the survey, with the questions intended to form the basis of discussion emailed to the participants beforehand (Appendix 7).

Prior to each interview, each GES signed a statement of disclosure and informed consent (Appendix 10). The interview sessions were audio recorded with the interviewees' permission, and each interviewee was provided with a summary of information discussed. Following the interviews, the relevant transcript was returned to each interviewee to validate information, then amended accordingly.

3.5.4 Limitations

Focus Groups

By geographical necessity these were limited to the Perth metropolitan area, thus issues specifically relevant to rural/remote teachers were not able to be explored.

Interviews

Interviews were conducted with GES on an availability basis, reflecting a convenience sampling. GES from the W.A. Department of Education and independent school sector were available at the time of the study.

3.5.5 Method of Data Analysis

The focus group discussions and interviews were transcribed, and NVivo 9 qualitative software was used to help manage the data and coding process. A qualitative thematic analysis was used to analyse the data contained in the interview and focus group transcripts. The transcripts were closely examined to identify patterns and themes. Common themes emerging from issues were identified and coded to provide a deeper understanding of the specific concerns affecting regular class teachers' provisions for gifted students. The GES interviews were able to provide two types of data: their own views based on their experiences of teaching gifted students; and views of teachers they worked with.

3.6 Reliability

Reliability issues for the questionnaire were addressed by reviewing and pilot-testing the format before use in the study (Cresswell, 2009). The wording and layout of the questionnaire were reviewed by researchers with experience in designing and using questionnaires for educational research. The questionnaire was then pilot tested by a smaller sample of teachers matching the intended target population. Twelve regular class primary teachers in three separate schools completed the questionnaire and were asked to suggest improvements. Minor changes were made to the wording in response to these teachers' comments. Cohen, Manion and Morrison (2011) suggest that reliability (or dependability) in using qualitative methods relies on careful choice of informants, and clear explanations of both the position of the researcher, and the methods of data collection and analysis.

It is acknowledged that the questionnaire did not lend itself to many of the usual reliability measures. The intent of this stage of the research was to elicit and map out teachers' perceptions of classroom practice, and use these as a basis for further exploration. Thus, internal consistency measures were not applicable, as the questionnaire data was not used to correlate scores on similar items. While the dimensions of differentiation were used to organise elements of the questionnaire, each classroom strategy was treated and discussed separately. Inter-rater reliability was not considered relevant, due to the self-report nature of the data. While a test-retest of the pilot questionnaire may have been useful, this was not done due to difficulties with time-frame and sensitisation. As the revisions to the questionnaire after the initial pilot were minor, this was not retested with a further sample, due to the small number of available participants for the actual survey.

3.7 Validity

The validity of this research was maximised via several methods. Construct validity of the questionnaire items was increased by drawing the identification items and classroom strategies from relevant literature, ensuring that they correspond to the theoretical context (Crotty, 2003). Member checking (or respondent validation) was used, as all of the interview participants were given a transcript of their interview and asked if this accurately represented their views. Adjustments were made to the transcripts in response to their comments. Methodological triangulation establishes the credibility of the findings by corroborating evidence from multiple data collection methods (Cohen et al., 2011). Information from the questionnaire, focus group discussions, and interviews were examined for recurring themes to provide triangulation of findings in this study. Cresswell (2009) further asserts that validity in using qualitative research methods can be increased by rich and thick description of complex phenomena, and inductive analysis of data.

3.8 Ethics

Ethics approval for this research was sought and granted by Edith Cowan University Human Research Ethics Committee. Permission to conduct research in state government and Catholic schools was sought from, and granted by the W.A. Department of Education, and the Catholic Education Office of W.A. respectively. The letters for the questionnaire were originally sent for permission from principals, who were asked to pass the questionnaire papers to a year five teacher, indicating approval to conduct research in their school. Principals and teachers were assured that the selected teacher's responses would be held in the strictest confidence and that the research results would not identify any teachers, schools or districts. Confidentiality

of results was ensured as the questionnaires were de-identified upon return and individual teachers, schools or districts are not identified in the results or discussion.

Chapter Four

Data Analysis and Findings: Questionnaire Data

4.1 Introduction

The purpose of this chapter is to present the findings from the questionnaire responses. A stratified sample of 191 respondents completed the Classroom Practices Questionnaire. The analysis of the data obtained is presented in five sections, corresponding to those in the questionnaire:

- **Section I:** Teacher information – Information about the respondents’ professional background.
- **Section II:** School information – Information about the respondents’ school situation.
- **Section III:** Class information – Information about the numbers of gifted students in respondents’ classes and the types of specialist programs available.
- **Section IV:** Classroom practices – Respondents rated the frequency with which they used thirty-five learning strategies for gifted students providing information about the use of differentiation strategies in the regular classroom.
- **Section V:** Open-response questions – Respondents’ nominations of useful strategies for gifted students and issues affecting provision of learning experiences for their gifted students, as well as any other comments.

Each section discusses the relevant data and presents key findings drawn from the interpretation of the data. The chapter concludes with a summary and key findings.

4.2 Analysis of Questionnaire Section 1: Teacher Information

The first section of the questionnaire asked respondents to answer questions about their teaching experience, teaching qualifications, and professional development in gifted education.

4.2.1 Teaching Experience

This question was included to obtain data about the overall teaching experience of the sample of teachers who responded to the questionnaire. Ninety-seven percent of respondents answered this question ($n=185$), reporting a range of experience from zero to forty-two years, with an average of 15.14 years (Figure 4). Fifty percent of respondents indicated they had less than fifteen years teaching experience, and nearly ninety-eight percent of respondents (97.8%) had less than thirty years of teaching experience, indicating that predominantly newer teachers chose to respond to this survey. Four of the five highest scores were round figures: 10 years ($n=10$), 20 years ($n=15$), 25 years ($n=11$) and 30 years ($n=12$). This could indicate a tendency for respondents to estimate their answer for this question, possibly affecting the accuracy of results.

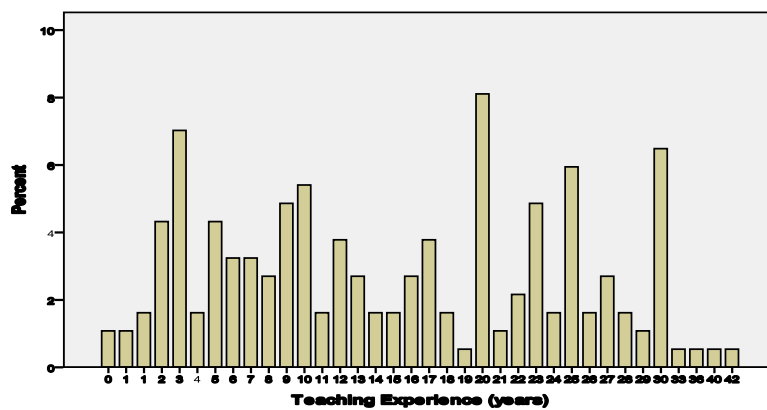


Figure 4 Years of Teaching Experience

4.2.2 Teaching Qualifications

All respondents answered question two, which sought to obtain information about the level of professional qualifications of the sample. Responses, shown in Table 4 indicate that the largest percentage (49% in total) had completed a three-year pre-service teacher education course via a Diploma of Teaching (24%) or Bachelor of Arts (Education) (25%). A further 40% reported four years of professional education by either a Bachelor of Education or a Diploma of Education (following a degree in a different area). Smaller percentages were shown for Teaching Certificate (two years initial training) (2%) and Postgraduate Degree (9%).

Table 4

Teaching Qualifications Reported by Respondents

Level of Teaching Qualification	Years of Teacher Education	Number of respondents	Percentage of respondents
Teaching Certificate	2	4	2
Diploma of Teaching	3	45	24
BA (Education)	3	48	25
B. Ed / Dip Ed	4	77	40
Postgraduate Degree	5+	17	9
TOTAL		191	100

4.2.3 Professional Development in Gifted Education

Respondents were asked to identify all of the methods of professional development in gifted education they had previously undertaken. This question was included to ascertain respondents' professional learning specific to teaching gifted students, with the results shown in Table 5. The most significant finding from these data is that thirty-three percent of questionnaire respondents indicated they had received no professional development in gifted education, in either pre-service/undergraduate or in-service/postgraduate situations.

Table 5

Teacher Professional Development in Gifted Education

Type of Professional Development	Number of Respondents	Percentage of Respondents
None	63	33
Undergraduate lectures as part of a unit or course at Teachers' College/University	48	25
Undergraduate whole units in gifted education at Teachers' College/University	16	8
District in-service	82	43
Workshop or conference outside district	31	16
Postgraduate units or course in gifted education	6	3
Postgraduate degree in gifted education	0	0

Lectures in gifted education during their pre-service courses were reported by twenty-five percent of respondents, while only eight percent stated they had completed a whole undergraduate unit in gifted education. The most frequently reported type of post-graduate professional development course in gifted education was district in-service courses (43% of all respondents). Sixteen percent of respondents indicated that they had attended a gifted education workshop or conference external to their district, while three percent stated that they had completed a postgraduate unit or course in gifted education. None of the respondents reported completing a postgraduate degree in this area. This was perhaps not unexpected as, at the time of data collection, there were no postgraduate courses in gifted education available in Western Australia. Teachers would have had to travel interstate or overseas to undertake postgraduate studies in this area.

The data presented above suggests that there appears to be little on gifted education included in undergraduate courses that these graduates completed, nor

available for these practising teachers. In this research, one third of the teachers who responded to the questionnaire reported that they had not been involved in any specific professional development in gifted education. This indicates a significant proportion of teachers who have not had access to information about gifted students, or strategies for supporting the learning needs of gifted students. With respect to university-level study in gifted education, it appears that this was also limited. Less than a quarter of respondents recalled undergraduate classes in gifted education and very small percentages had undertaken a whole unit or degree at either pre- or post-graduate level. The most common form of gifted specific professional development for teachers was a district in-service, however less than half of the respondents reported participation in these.

Key Findings

- One third of questionnaire respondents reported that they had not been involved in any professional development specific to teaching gifted students.
- Only twenty-five percent of respondents recalled a lecture or class in gifted education during their pre-service course.
- In-service courses held within school districts appear to be the most common form of professional development undertaken by teachers, however less than a half of this sample had participated in this type of PD.

4.3 Analysis of Questionnaire Section II: School Information

In this section of the questionnaire, respondents were asked to provide information about their school system, location, and the definition of giftedness used by their school.

4.3.1 School Sector and Location

Respondents were asked to nominate the sector (Education Department, Catholic or Independent) and location (rural, metropolitan) for their current school. Seventy-three percent of respondents indicated that they were reporting from an Education Department school, while nearly sixteen percent indicated a Catholic sector school and just over eleven percent were teaching at independent schools. With regard to school location, fifty-six percent of respondents indicated that they were teaching at metropolitan schools, while forty-four percent were based in rural areas.

Table 6

Percentages of Questionnaire Returns by School Sector and Location

Sector/Location	Education Department	Catholic	Independent	TOTAL
Metropolitan	39	9	9	56
Rural	33	7	3	44
TOTALS	73	16	12	100

4.3.2 School Definition of Giftedness

Teachers were asked if their school or district used a formal definition of giftedness. This question was included to ascertain respondents' knowledge of the definition of giftedness used by their particular school, and elicited a response rate of 99%. Just over forty-one percent of all respondents reported that their school or district used a formal definition of giftedness. Almost thirty percent reported that a formal definition was not used, while nearly twenty-eight percent of all respondents

didn't know whether or not their school or district used a formal definition. These proportions reflected the stratification aimed for in the participant selection.

The data indicates that nearly fifty-eight percent of respondents indicated that they were unaware of the definition of giftedness in their school situation, or that their school didn't use one. The W.A. Department of Education endorses Gagné's definitions of 'gifted' and 'talent' (see definitions in introduction chapter), and his Differentiated Model of Giftedness and Talent (Gagné, 2009). This definition is clearly shown and described on the Department of Education website, however it appears that a large proportion of the teachers who responded to this questionnaire were not aware of this. (It should be noted that other definitions may be used in independent schools.)

Table 7

Respondent Knowledge of Definition of Giftedness Used

Response	Number of responses	Percentage of responses
Yes	79	41
No	57	30
Don't know	53	28
Total responses	189	99

Key Findings

- Only forty-one percent of questionnaire respondents were aware of the definition of giftedness used in their school situation.
- Almost one third of questionnaire respondents stated there was no definition of giftedness used in their school situation.

4.4 Analysis of Questionnaire Section III: Class Information

This section of the questionnaire asked respondents to provide information about the number of identified and non-identified gifted students in their class (by gender), the selection methods used to identify the gifted students, and the types of programs available to their gifted students.

4.4.1 Identification

Two questions were included to ask respondents to indicate the numbers of formally identified and informally/non-identified gifted students in their classes. (Non-identified gifted refers to students who teachers thought were gifted but had not been formally identified.)

4.4.1.1 *Formally Identified Gifted Students*

Respondents were asked to nominate formally identified gifted students in their classes, eliciting a response rate of 93%. This question was included to establish the number of students in regular, year five classes who had been formally identified as gifted and asked respondents to identify students by gender to ascertain if there were gender differences in the numbers of students identified as gifted. As shown in Table 8, one hundred and eleven respondents reported three hundred and thirty-three identified gifted students in their classes. The numbers of formally identified gifted students ranged from zero to ten, with higher proportions of respondents stating that their classes included one (13%), two (15%), three (12%) or four (8%) students formally identified as gifted.

Table 8

Formally Identified Gifted Students by Gender and Total Reported

Number of Students	Respondents who Reported Identified Students (Total)		Respondents who Reported Identified Girls		Respondents who Reported Identified Boys	
	n	%	n	%	n	%
0	66	34	92	48	86	45
1	25	13	43	22	44	23
2	29	15	24	13	24	13
3	22	12	10	5	17	9
4	16	8	5	3	3	2
5	5	3	1	0.5	2	1
6	9	5	0	0	1	0.5
7	1	0.5	1	0.5	0	0
8	3	2	0	0	0	0
9	0	0	1	0.5	0	0
10	1	0.5	0	0	0	0
Total responses	177	93	177	93	177	93
Total respondents who reported 1+ gifted students	111	58	85	44	91	48
Total number of students reported	333		162		171	

The most significant factor shown in the data are that over thirty-four percent of all respondents (n=66) reported that their classes did not include any formally identified gifted students. According to the data, it appears that there are unidentified gifted students in regular, year 5 classes in W.A. The W.A. Department of Education definition of giftedness (Gagné, 2009) includes the top ten percent of the population, or an average of two to three students in each class. However, over one third of respondents in this research reported that their classes included no identified gifted students, while a further thirteen percent of respondents indicated that their class included only one gifted student. It appears then that at least fifty percent of teachers may have gifted students in their classes who were not formally identified.

With regard to gender identification, similar total numbers of identified girls (n=162) and identified boys (n=171) were reported by questionnaire respondents. Formally identified gifted girls were reported by forty-six percent of all respondents. Twenty-four percent of respondents reported one identified gifted girl in their year 5 class. Smaller numbers reported two, (13%), three (5%) or four (3%) gifted girls, while one respondent each reported five, seven or nine gifted girls. Formally identified gifted boys were reported by nearly forty-eight percent of all respondents. Just over twenty-two percent reported one identified gifted boy in their class, while thirteen percent reported two identified gifted boys and nine percent reported three identified gifted boys in their class. Smaller numbers reported between four and six identified gifted boys. The data does not indicate a significant gender discrepancy in the numbers of identified gifted students.

4.4.1.2 Informally Identified Gifted Students

Respondents were asked to nominate informally identified gifted students in their classes, eliciting a response rate of 95%. Informally identified gifted students are students whom teachers believe are gifted but have not yet been formally identified as such. This question was included to determine whether there were informally identified gifted students in regular classes, and the numbers of these. Respondents were asked to identify students by gender to ascertain if there were differences in the numbers of informally identified gifted students (results shown in Table 9).

Thirty-nine percent of teachers believed they had gifted students in their classes who had not been formally identified. The numbers of informally identified gifted students ranged from zero to eleven, with higher proportions of respondents stating that their classes included one (14%), two (12%), three (5%) or four (5%) students which they informally identified as gifted.

Table 9

Informally Identified Gifted Students by Gender and Total Reported

Number of Students	Respondents who Reported Informally Identified Students (Total)		Respondents who Reported Informally Identified Girls		Respondents who Reported Informally Identified Boys	
	n	%	n	%	n	%
0	108	56	131	69	131	69
1	27	14	25	13	31	16
2	22	12	15	8	13	7
3	10	5	8	4	5	3
4	9	5	3	2	1	0.5
5	2	1	1	0.5	1	0.5
6	3	2	0	0	1	0.5
7	1	0.5	0	0	0	0
11	1	0.5	0	0	0	0
Total responses	183	96	183	96	183	96
Total respondents who reported 1+ gifted students	75	39	52	27	52	27
Total number of students reported	183		96		87	

A slightly higher proportion of girls was informally identified as gifted by their teachers (girls = 96, boys = 87). A total of ninety-six informally identified gifted girls were reported by fifty two respondents (27%). Thirteen percent of all respondents reported one non-identified gifted girl in their class. Respondents also reported two (8%), three (4%), four (2%) or five (0.5%) non-identified gifted girls in their class. Eighty-seven informally identified gifted **boys** were reported by fifty two teachers. Sixteen percent reported one gifted boy, nearly seven percent (7%) reported two gifted boys and nearly three percent (3%) reported three gifted boys in their classes. Four, five or six informally identified gifted boys were each reported by one teacher (0.5%). The data also shows a slight bias towards teachers' identification of girls as gifted.

4.4.1.3 Total Gifted Students (Formally and Informally Identified)

Combination of the data for formally and informally identified gifted students shows the total number of gifted students reported by respondents (shown in Table 10). Nearly seventy-seven percent of respondents (n=147) reported gifted students in their classes. Most frequently, teachers reported they had one (15%), two (16%), three (14%) or four (14%) gifted students in their classes. Smaller numbers of respondents reported five (4%), six (6%), seven (3%), or eight (3%) gifted students in total. Relatively high numbers of gifted students (9, 10, 11, 12 and 15) were reported by one teacher. Again however, the significant factor shown here is that a relatively large proportion of respondents (22%) indicated that there were no gifted students in their regular classes.

Table 10

Total No of Gifted Students Reported by Respondents (Formal and Informal Identification)

Number of Students	Number of Teachers who Reported Gifted Students	
	n	%
0	43	22
1	29	15
2	30	16
3	27	14
4	27	14
5	8	4
6	11	6
7	5	3
8	5	3
9	1	0.5
10	1	0.5
11	1	0.5
12	1	0.5
15	1	0.5
Total responses	190	99.5
Total respondents who reported 1+ gifted students	147	77
Total number of students reported	516	

4.4.1.4 Identification Methods

Respondents were asked to nominate, from a given list, all the identification methods which were used to formally identify the gifted students in their classes. This question was included to obtain data about the measures which had been used to formally identify the students reported. PEAC testing, while not a category in the original questionnaire, was commonly listed under 'Other' and therefore included as an extra category in the data analysis.

According to the respondents in this survey, the most commonly used strategies for identifying gifted students were teacher nomination (61%), achievement tests (53%), PEAC testing (46%), IQ tests (41%), student portfolios (38%), school grades (36%) and teacher rating scales (34%). Parent nomination was identified by twenty percent of respondents. Five percent of teachers stated that they did not know how their gifted students were identified. Thirty-four percent of teachers gave no answer to this question, most indicating that their classes did not include gifted students.

The data suggests that regular class teachers have the greatest responsibility for identifying gifted students in their classes (teacher nomination 61%; teacher rating scales 34%). Other responses showed a significant proportion of students were identified via their achievement in regular classes (achievement tests 53%; student products/portfolios 38%; school grades 36%). Significant numbers of teachers also reported identification via aptitude testing (PEAC testing 46% or IQ tests 41%).

Table 11

Methods Used to Identify Gifted Students

Identification Method	Percentage of respondents who nominated their gifted student/s were identified via this method
Teacher nomination	61
Achievement tests	53
PEAC testing	46
IQ tests (group or individual)	41
Student products /portfolios	38
School grades	36
Teacher rating scales	34
Parent nomination	20
Creativity tests	17
Don't know	5
Student interview	4
Student nomination	2
Peer nomination	2
Other (unspecified)	2

Key Findings

- More than one-third of all respondents reported no formally identified gifted students in their classes.
- More than one fifth of all respondents reported that there were no gifted students in their classes (either formally or informally identified).
- Teacher identification methods appear to be the main strategy used to identify gifted students.
- Achievement-based methods are also commonly used to identify gifted students.

4.4.2 Programs Available for Gifted Students

Questions 11-14 were included to obtain data about the types of specialist programs available to respondents' gifted students beyond the regular class program, and numbers of students participating in these. Although the main focus of this research is on the regular classroom, these questions were included to explore the availability of specialist programs for gifted students and the numbers of gifted students for whom these were available.

4.4.2.1 Off-Site Gifted Programs

Respondents were asked to nominate the number of students participating in off-site programs (programs held at another location than the regular school), by gender, and the types of program available for these students. The significant factor shown in the data (Table 12) is that nearly forty-nine percent of all respondents reported that they had no gifted student participating in an off-site specialist gifted program. Forty-eight percent of questionnaire respondents indicated that gifted students in their classes took part in an off-site gifted class/program.

Question 12 asked respondents about the type of off-site program available to their gifted students, and elicited a response rate of almost 80%. The most commonly reported off-site program for gifted students (Table 13) was the Primary Extension and Challenge (PEAC) program provided for government school students by the W.A. Department of Education. Almost 61% of respondents reported having gifted student/s in their classes who attended PEAC courses. Six percent of respondents reported various other off-site programs available through universities, district office, school of the air (S.O.T.A.) and Gateway. Nearly sixteen percent of respondents reported that there were no off-site programs available for their students.

Table 12

Gifted Students Participating in Off-Site Programs

Number of Students	Total Students		Respondents who Reported Girls		Respondents who Reported Boys	
	n	%	n	%	n	%
0	93	49	61	32	54	28
1	28	15	41	22	44	23
2	31	16	19	10	19	10
3	19	10	2	1	6	3
4	5	3	2	1	3	2
5	3	2	1	0.5	1	0.5
6	4	2	0	0	0	0
7	0	0	1	0.5	0	0
8	2	1.0	0	0	0	0
Total responses	185	97	127	66	127	66
Total respondents who reported 1+ gifted students	92	48	66	35	73	38
Total number of students reported	222		105		117	

Table 13

Types of Off-Site Programs Available to Gifted Students

Type of Program	Respondents Reporting Type of Program	
	n	%
None (no program)	30	16
PEAC	116	61
University program	2	1
District program	2	1
S.O.T.A	1	0.5
Gateway	1	0.5
Total responses	152	80
Non response	39	20

4.4.2.2 On-site Gifted Programs

Respondents were asked about on-site programs available (programs held at the regular school), nominating the types of programs available, and the number of students (by gender) participating in these programs. The significant factor shown in the data (Table 14) is that nearly seventy-one percent of all respondents reported that they had no gifted student participating in an on-site gifted class/program taught by a gifted-trained teacher. Twenty-four percent of respondents indicated that gifted students in their classes took part in some type of on-site gifted program.

Various on-site programs were reported (Table 15). These were categorised as extension (22%), enrichment (18%), acceleration (1%), withdrawal room (0.5%) and creative dancing (0.5%). Twenty-five percent of respondents indicated that no on-site program was available for their gifted students.

Table 14

Gifted Students Participating in On-site Programs

Number of Students	Total Students		Respondents who Reported Girls		Respondents who Reported Boys	
	n	%	n	%	n	%
0	135	71	78	41	78	41
1	7	4	13	7	16	8
2	6	3	7	4	9	5
3	10	5	8	4	8	4
4	7	4	6	3	4	2
5	3	2	1	0.5	2	1
6	7	4	3	2	0	0
7	3	2	0	0.5	0	0
8	2	1	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	1	0.5
11	1	0.5	1	0	0	0
21	1	0.5	0	0	0	0
Total responses	182	95	117	61	118	62
Total respondents who reported 1+ gifted students	47	25	39	20	40	21
Total number of students reported	203		96		94	

Table 15

Types of On-site Programs Available to Gifted Students

Type of Program	Respondents Reporting Type of Program	
	n	%
None (no program)	48	25
Enrichment	35	18
Extension	41	22
Acceleration	2	1
Withdrawal room	1	0.5
Creative dancing	1	0.5
Total responses	128	67
Non response	63	33

Key Findings

- Less than half the respondents in this research reported gifted students participating in off-site specialist gifted programs.
- PEAC was reported almost exclusively as the type of off-site program available for gifted students (94% of off-site programs nominated).
- Less than a quarter of respondents reported students participating in on-site specialist gifted programs.
- Twenty-two percent of respondents reported that gifted students participated in an on-site program involving extension.
- Only one percent of respondents reported that gifted students participated in an on-site program involving acceleration.

4.5 Analysis of Questionnaire Section IV: Classroom Practices

The purpose of this section is to interpret the questionnaire data relating to classroom provision for gifted students. Respondents were asked to rate the frequency with which they used thirty-five nominated classroom strategies with the gifted students in their current class. Forty-three respondents were not able to complete this section, as they reported they did not have any gifted students in their class. The data analysis for this section therefore includes information from the remaining respondents (n=148) who reported the strategies they used for their current gifted students.

The data presented here provide information on the specific types of differentiation which the participants claim they provided for their gifted students. The findings from the data are discussed in five sections, each representing a group of strategies that promote particular ways of learning. The Classroom Practices section

of the questionnaire (Section IV) was designed to represent these five dimensions of differentiation and was based on the literature about classroom strategies for gifted students. Although the various learning strategies overlap, it is possible to discuss them in discrete sections:

- Strategies that provide challenge. This section describes the findings on the use of extension and acceleration strategies.
- Strategies that promote thinking skills. This section describes the findings on higher order thinking (H.O.T.), questioning and reasoning, and problem-solving.
- Strategies that provide choice. This section includes strategies of negotiated curriculum and assessment activities.
- Strategies for curriculum modification. This section provides information on open-ended activities, curriculum compacting and research strategies.
- Strategies for grouping gifted students. This section includes data on strategies related to grouping of gifted students by same- or mixed-ability for learning activities.

4.5.1 Strategies that Provide Challenge

This section provides information about strategies for advanced or higher level work (extension and pace of learning). Respondents were asked to rate their frequency of use for six items describing strategies which provide challenge for gifted students (shown in Table 16). The first two items were included to allow a comparison between respondents' self-reported use of basic skills vs. extension activities for gifted students.

- Use basic skills worksheets
- Use extension worksheets
- Assign advanced level reading material
- Provide support for students to enter competitions (e.g. allow class time to work on entry)
- Provide a more advanced unit based on higher-level outcome statements.
- Provide opportunities for students to use programmed or self-instructional learning material at their own pace.

Table 16

Challenge Strategies: Frequency of Use with Gifted Students

Questionnaire Item: Challenge Strategies	Percentage of Respondents who Reported Use of Strategy				
	Non Response	Never	Seldom	Occasionally	Often
Basic skills worksheets	2	11	23	38	26
Extension worksheets	5	6	16	47	26
Advanced level reading material	3	3	10	37	47
Competitions	1	17	29	38	15
Advanced level unit	2	9	29	39	21
Own pace	3	21	30	29	17

Key: Seldom (once a month or less frequently); Occasionally (a few times a month/ weekly); Often (several times a week or more frequently)

Eighty-seven percent of respondents who identified gifted students in their class reported using basic skills worksheets with these students, with eleven percent of teachers reporting that they never used this strategy. Sixty-four percent reported use of this strategy more than a few times a month, and twenty six percent reported using

this strategy more than weekly. From these data, it appears that the majority of respondents use basic skills worksheets with their gifted students. It seems that more than one quarter of respondents may require gifted students to complete basic skills worksheets at least several times per week, while nearly two thirds ask gifted students to complete basic skills worksheets several times per month.

Eighty-nine percent of respondents reported using extension worksheets with the gifted students in their class, with the majority (73%) reporting that they used this strategy with their gifted students at least several times a month. Only twenty-six percent reported using this strategy more once a week. From these data, it appears that most respondents use extension worksheets to cater for gifted students, however this may not be on a frequent basis: over seventy percent of respondents may use extension worksheets with their gifted students only once a week or less.

Further, items 1 and 2 allowed a comparison between use of basic skills and extension activities for gifted students, with the data in this research revealing little difference in the frequency these two strategies were used. Only two percent more respondents reported use of extension than basic skills worksheets (89%:87%), slightly more respondents used extension than basic skills worksheets more than once a month (73%:64%), and identical proportions of respondents reported more than weekly use of each type (26%). It seems then that more than one quarter of respondents require gifted students to complete basic skills activities several times a week, while nearly two thirds ask gifted students to complete basic skills activities several times per month.

Almost all respondents (94%) reported the use of advanced reading material with their gifted students, with most reporting use more than once a month (84%).

Forty-seven percent reported using this strategy more than weekly. The data suggests that almost all respondents may use advanced level reading to challenge gifted students, however fifty percent of respondents still reported using this strategy once a week or less. According to the data, even though advanced reading material had the highest frequency of use of the challenge strategies, it still appears to have been used with low frequency.

Eighty-two percent of respondents reported using competitions with the gifted students in their class, with just over half reporting use more than once a month (53%). Only fifteen percent reported using this strategy more than weekly. From these data it appears that while most respondents may use competitions to challenge their gifted students, this is not done on a frequent basis.

Eighty-nine percent of respondents reported using advanced level units of work with the gifted students in their class, with nine percent reporting that they never used this strategy. However only twenty-one percent reported using this strategy more than weekly: most respondents (68%) may use this strategy only weekly or less. According to the data, it appears that the majority of respondents may use advanced level units of work to cater for gifted students, however this strategy was not reported to be used on a frequent basis.

Seventy-six percent of respondents reported providing opportunities for their gifted students to work at their own pace, while twenty-one percent reported never using this strategy. Only forty-six percent reported allowing their gifted students to work at their own pace more frequently than once a month, and only seventeen percent reported using this strategy more than weekly. The data suggests that while three quarters of respondents may provide curricula materials, which allowed their

gifted students to work at their own pace, this strategy was not used on a frequent basis. A substantial proportion of respondents may not provide any pace variation for their gifted students.

Key Findings

- Most respondents report using strategies to provide challenging learning experiences for their gifted students.
- Challenge strategies do not seem to be used to cater for gifted students with high frequency. The majority of respondents report using challenge strategies with their gifted students once a week or less.
- There appears to be little difference in the use of basic skills and extension worksheets with gifted students.
- Providing opportunity for students to work at their own pace may not be a significant strategy used to challenge gifted students. More than one in five respondents may not provide any pace variation for their gifted students.

Summary

The majority of questionnaire respondents reported having used all the challenge strategies measured in this research to some degree or another. Challenge strategies were not shown to be used frequently, however five of the challenge strategies in this research were used once a week or less by the majority of respondents (59-68%). Advanced level reading material appears to be the most frequently used strategy, however this was still reported to be used once a week or less by nearly half the respondents (47%).

4.5.2 Strategies that Promote Thinking Skills

This section provides information about the use of strategies for higher order thinking (H.O.T.), questioning and reasoning, and problem solving. Questionnaire respondents were asked to rate five items related to thinking strategies with respect to their frequency of use with gifted students:

- Teach thinking skills in the regular curriculum (e.g. CoRT Thinking strategies, Six Thinking Hats, critical thinking, creative problem solving).
- Participate in a competitive program focussing on thinking skills/problem solving, such as Tournament of Minds or Future Problem Solving.
- Provide curriculum which includes investigation of real world situations or problems.
- Provide questions which require students to explain their thinking and provide evidence of reasoning.
- Engage students in questions and activities based on higher level thinking skills (such as Bloom’s Taxonomy).

Table 17

Thinking Skills Strategies: Frequency of Use with Gifted Students

Questionnaire Item: Thinking Skills Strategies	Percentage of Respondents who Reported Use of Strategy				
	Non Response	Never	Seldom	Occasionally	Often
Teach thinking skills	1	6	32	34	27
Competition – thinking e.g. T.O.M.	2	40	33	14	11
Real-world problems/ situations	1	3	14	52	30
Questions requiring explanation/ evidence	1	3	17	47	32
Higher level thinking activities	1	6	18	47	28

Key: Seldom (once a month or less frequently); Occasionally (a few times a month/ weekly); Often (several times a week or more frequently)

Ninety-three percent of respondents who identified gifted students in their classes reported explicit teaching of thinking skills to their gifted students. Sixty-one percent reported using this strategy with their gifted students more frequently than once a month. However, only twenty-seven percent of respondents of gifted students reported using this strategy more than weekly – i.e. sixty-six percent reported teaching of thinking skills strategies with gifted students only weekly or less. Thinking skills strategies therefore appear to be explicitly taught to gifted students with low frequency.

A significantly high proportion of these respondents stated that they never used thinking-based competitions with their gifted students (40%), with fifty-eight percent reporting that they did use this strategy. Twenty-five percent reported using competitions with their gifted students more frequently than once a month and only eleven percent reported using this strategy more than weekly. The data indicates that this strategy is not used frequently, however, given the nature of these competitions (in that they are often annual), the low frequency of use is perhaps not unusual.

Use of curriculum involving real world situations or problems for their current gifted students was reported by ninety-six percent of respondents. However only thirty percent reported using this strategy more than once a week: sixty-six percent reported use of real world/problem solving curricula with gifted students only weekly or less. The data appears to indicate that real-world, problem-based curricula are not used frequently with gifted students. It appears that while most respondents use this strategy, less than a third do so more than weekly.

Ninety-six percent of respondents reported using questions requiring explanation or reasoning for the gifted students in their class, with most reporting its

use more frequently than once a month (75%). However only thirty-two percent of respondents of gifted students reported using this strategy more than weekly – i.e. sixty-one percent reported use of questioning and reasoning strategies with gifted students only once a week or less. The data suggests that while questioning and reasoning strategies may be used with gifted students, this is possibly not on a frequent basis.

Ninety-three percent of respondents who identified gifted students in their classes reported using higher level thinking activities for their gifted students. Seventy-five percent reported using this strategy with their gifted students more frequently than once a month. However only twenty-eight percent of respondents reported using thinking skills strategies more than weekly: sixty-five percent reported use of this strategy with gifted students only weekly or less. From these data, it appears that higher order thinking skills strategies may not be used with gifted students on a frequent basis. Most respondents indicated use of higher order thinking skills activities with their gifted students however less than a third of respondents may use this strategy more once a week.

Key Findings

- It appears that most respondents use strategies that promote thinking skills with their gifted students.
- Thinking skills strategies do not seem to be used to cater for gifted students with high frequency.

Summary

Four of the five thinking skills strategies identified in this research were reportedly used by over ninety percent of the respondents who completed this part of the questionnaire. However less than a third report using any of these strategies more

than once a week. The fifth strategy, thinking based competitions, is a strategy which, by its nature, may not be available for teachers to use in all situations or more frequently. The data therefore suggests that thinking strategies may not be used frequently by regular class teachers to cater for their gifted students.

4.5.3 Strategies That Provide Choice

This section explains the data obtained on the use of choice in learning activities as a strategy to cater for gifted students. Questionnaire respondents provided more specific information about the strategies of negotiated curriculum and assessment activities with gifted students, by rating their frequency of use for seven items describing various choice strategies:

- Allow students to select their own instructional reading material (apart from silent-reading material).
- Allow students to select activities for response to reading material.
- Assign creative or expository writing activities on topics selected by the teacher.
- Assign creative or expository writing activities on topics selected by the student.
- Make time available for students to pursue self-selected interests.
- Teach students how to make choices among alternate appropriate activities.
- Allow students to work in various locations around the classroom eg book corner, writing centre.

Table 18

Choice Strategies: Frequency of Use with Gifted Students

Questionnaire Item: Choice Strategies	Percentage of Respondents who Reported Use of Strategy				
	Non Response	Never	Seldom	Occasionally	Often
Select own instructional reading material	1	4	18	32	45
Select response activities	3	7	26	42	22
Writing topic selected by teacher	3	3	14	57	23
Writing topic selected by student	1	3	32	52	12
Time for self-selected interests	0	10	45	36	9
Teach – choices	3	15	34	39	9
Work in various class locations	1	5	24	35	35

Key: Seldom (once a month or less frequently); Occasionally (a few times a month/ weekly); Often (several times a week or more frequently).

Ninety-five percent of respondents who identified gifted students in their classes reported using student selection of instructional reading material for their gifted students. The majority of these reported using this strategy more frequently than once a month (77%), and forty-five percent reported using it several times a week or more. According to the data, it appears that most respondents may allow their gifted students to select their instructional reading material on some occasions, however only half (50%) use this strategy more than once a week.

Student selection of response activities was reported to be used for gifted students by ninety percent of these respondents, however only twenty-two percent of respondents of gifted students reported its use more than weekly. From these data, it appears that most respondents may allow their gifted students to select response activities to reading material at some point, however the majority (68%) use this strategy once a week or less.

Almost all of the respondents identifying gifted students in their classes reported assigning writing topics selected by the teacher for these students (97%), with the majority reporting assigning writing topics for their gifted students more than once a month (80%). Only twenty-three percent reported using this strategy more than weekly. From these data, it appears that nearly all respondents assign teacher selected writing topics for gifted students, however most use this strategy weekly or less.

Assignment of writing topics selected by the student was also reported by almost all respondents (96%), however a smaller proportion (64%) used this strategy more than once a month. Only twelve percent of these respondents reported using this strategy more than weekly. It appears that while respondents may allow students to select topics for their writing, this is not done frequently. The data also appears to indicate that writing topics for gifted students were more commonly selected by teachers than students.

Ninety percent of respondents reported that they allowed time for their gifted students to investigate self-selected interests. However half of these reported that they used this strategy once a month or less and eighty-one percent reported that they used this strategy once a week or less: only nine percent of respondents reported using this strategy more than weekly. The data suggests that while most respondents may allow time for gifted students to investigate self-selected interests, only a very small proportion allowed class-time for students' investigations more than once a week.

The strategy of explicitly teaching their gifted students how to make choices was reported by seventy-five percent of all respondents. Eighty-five percent of these respondents reported using this strategy, with fifty percent reporting that they did so more frequently than once a month. However only ten percent of respondents with

identified gifted students reported using this strategy more than weekly. From these data, it appears that most respondents (85%) may explicitly teach their gifted students how to make choices, however this strategy was not reported to be used with a high frequency.

Ninety-four percent of these respondents reported allowing their current gifted students to work in various locations, with seventy percent reporting use of this strategy more frequently than once a month. Thirty-five percent of respondents reported using this strategy more than weekly. From these data, it appears that most respondents may allow gifted students a choice of work location within the classroom for some activities, however the majority (59%) use this strategy weekly or less.

Key Findings

- It appears that most respondents use choice strategies for their gifted students.
- Choice strategies do not seem to be used to cater for gifted students with high frequency. The majority of respondents report using choice strategies with their gifted students once a week or less.

Summary

Significant proportions of participants reported or suggested use of choice strategies with their gifted students. Six of the seven of the specific choice strategies rated in this research were reported to be used over ninety percent of the respondents who completed this part of the questionnaire, with the seventh (explicit teaching) being reported by over eighty-five percent of these respondents. However this research suggests that choice strategies may not be used frequently by regular class teachers to cater for their gifted students.

4.5.4 Strategies for Curriculum Modification

This section provides information on three subgroups of strategies: curriculum compacting, research strategies and open-ended tasks. Respondents rated seven items relating to these curriculum modification strategies according to frequency of use with their gifted students:

- Provide open-ended activities.
- Use pre-tests to determine if students have mastered the material covered in a particular unit.
- Eliminate curricular material that students have mastered.
- Substitute different activities for students mastering regular material.
- Use contracts or management plans to help students organise their independent research projects.
- Provide time within the school day for students to work on their independent research projects.
- Assign long-range research projects that encourage students to organise their own work schedule.

Table 19

Curriculum Modification Strategies: Frequency of Use with Gifted Students

Questionnaire Item: Curriculum Modification Strategies	Percentage of Respondents who Reported Use of Strategy				
	Non Response	Never	Seldom	Occasionally	Often
Provide open-ended activities	1	1	7	38	53
Pre-tests	1	24	27	35	13
Eliminate material previously mastered	4	13	25	34	24
Substitute activities	5	2	18	42	33
Contracts	1	14	20	40	25
Independent research	1	3	23	46	27
Long range research	1	10	28	37	24

Key: Seldom (once a month or less frequently); Occasionally (a few times a month/ weekly); Often (several times a week or more frequently)

4.5.4.1 Curriculum Compacting

Questionnaire respondents rated three items in relation to curriculum compacting strategies. Seventy-five percent of these respondents reported using pre-testing to determine student mastery, while twenty-four percent reported that they never used this strategy. Almost half (48%) reported using pre-testing with their gifted students more frequently than once a month. However only thirteen percent of respondents reported using this strategy more than weekly: sixty-two percent reported use of pre-testing with gifted students only weekly or less. The data suggests that pre-testing appears to be used infrequently to determine gifted students' mastery of curriculum by most respondents: while three quarters of respondents may use pre-testing, only half do so more than monthly and most (86%) do so less than weekly. It also seems that almost one in four teachers may not use any pre-testing to identify mastered curriculum for their gifted students.

Eighty-three percent of these respondents reported eliminating mastered material with the gifted students in their class and thirteen percent reported that they never used this strategy. However only twenty-four percent reported using this strategy more than weekly: seventy-two percent reported eliminating mastered material for their gifted students once a week or less. From these data, it appears that elimination of mastered material may be used infrequently: while most respondents may eliminate mastered material for gifted students (59%), only a quarter do so on a frequent basis. It also seems that more than one in eight respondents may not eliminate any curriculum material that their gifted students have already mastered.

Almost all of these respondents (93%) reported substituting different activities for the gifted students in their class, with only two percent reporting never using this strategy. However only thirty-three percent of respondents reported using this strategy more than weekly and sixty percent reported use of substitution with gifted students only once a week or less frequently. From these data, it appears substitution may be used infrequently: while almost all respondents may substitute activities for their gifted students, only one third do so more than once a week.

The quantitative data suggests that pre-testing is not being used as a diagnostic measure to identify the content or skills which students have already mastered, leading to systematic decisions about elimination of unnecessary content for individual gifted students. As questionnaire respondents reported that substitution of advanced activities is used more frequently than pre-testing or elimination, it appears that substitution may be used on an ad hoc basis rather than co-ordinated with pre-testing and elimination.

Key Findings

- It appears that curriculum compacting may not be used on a frequent basis. It seems that most respondents use pre-testing, elimination and/or substitution for their gifted students less than once a week.
- Significant proportions of respondents may not use pre-testing and/or eliminate mastered material for their gifted students.

4.5.4.2 Research Strategies

Questionnaire respondents rated three items in regard to research strategies. Eighty-six percent of respondents who identified gifted students in their class reported using contracts to help these students organise their independent research projects, with fourteen percent reporting they never used contracts for research organisation. However only twenty five percent reported using this strategy more than weekly: three quarters reported use of this strategy with gifted students only once a week or less. From these data, it appears that a high proportion of respondents use contracts to help gifted students manage independent projects, however only a quarter use this strategy on a frequent basis.

Almost all these respondents (96%) reported using independent research, with most (73%) reporting they used this strategy with their gifted students more frequently than once a month. Only twenty-seven percent of respondents of gifted students reported using this strategy more than weekly: sixty-nine percent reported use of independent research with gifted students only weekly or less. The data suggests that while nearly all respondents use independent research as a strategy to cater for gifted students, this strategy may not be used on a frequent basis.

Eighty-nine percent of respondents reported using long-range research projects

with the gifted students in their class. Sixty-one percent reported using long-range research with their gifted students more frequently than once a month, and only twenty-seven percent of respondents reported using this strategy more than weekly. Given that the term ‘long range research’ indicates a longer time frame than most strategies rated here, significant use could perhaps be interpreted as ‘more than monthly’ rather than ‘more than weekly’. However, from these data, it appears that only three out of five respondents use this strategy more than monthly.

Key Findings

- Research appears to be considered a useful, or at least well known strategy to cater for gifted students. Almost all respondents with gifted students reported this strategy.
- Research strategies do not appear to be used to cater for gifted students with high frequency.

4.5.4.3 Open-Ended Activities

Ninety-eight percent of the respondents who identified gifted students in their class reported using open-ended activities as a strategy for their gifted students (Item 5). Most (91%) reported using this strategy more than once a month, with fifty-three percent reporting use of open-ended activities more than once a week. From these data, it appears almost all respondents appear to use open-ended activities to cater for gifted students. It seems that this strategy may be used frequently for gifted students: more than half the respondents may use this strategy several times a week for their gifted students.

Key Findings

- Almost all respondents reported using open-ended activities to cater for gifted

students.

- It seems that open-ended activities may be used frequently for gifted students: more than half the respondents indicated use several times a week.

4.5.5 Strategies for Grouping Gifted Students

The Classroom Practices section of the questionnaire asked respondents to rate five factors describing strategies related to grouping of gifted students by same or mixed ability for learning:

- Use same-ability grouping for learning activities.
- Use mixed-ability grouping for learning activities (e.g. co-operative learning).
- Allow students to choose between working in a group or individually.
- Group students by ability across classrooms at the same grade level (cross setting).
- Send to a higher grade for a specific area of instruction.

Table 20

Grouping Strategies: Frequency of Use with Gifted Students

Questionnaire Item: Grouping Strategies	Percentage of Respondents who Reported Use of Strategy				
	Non Response	Never	Seldom	Occasionally	Often
Same-ability grouping	2	16	18	35	29
Mixed-ability grouping	1	3	9	38	49
Allow choice – group vs. individual	0	3	24	43	30
Cross-setting	4	43	18	17	18
Send to higher grade	2	73	8	6	11

Key: Seldom (once a month or less frequently); Occasionally (a few times a month/ weekly); Often (several times a week or more frequently).

Eighty-two percent of percent of respondents who identified gifted students in their classes reported using same-ability grouping (homogeneous grouping) with the

gifted students in their class, while sixteen percent reported that they never used this strategy. Only twenty nine percent of respondents of gifted students reported using this strategy more than weekly – i.e. fifty-three percent reported use of ability grouping with gifted students only weekly or less. From these data, it appears that grouping gifted students by ability for learning activities, within their regular class, may be used by most respondents.

However, the data suggests that this strategy may not be used frequently: more than half of the respondents group gifted students by ability once a week or less, and less than a third use this strategy more than once a week. It also seems that one in six respondents may not use ability grouping as a strategy to cater for their gifted students.

Almost all of these respondents reported using mixed ability or heterogeneous grouping of gifted students for learning activities (96%). Interestingly, forty-nine percent reported using this strategy more than once a week, while eighty-seven percent reported using this strategy weekly or at least a few times a month. The data suggests that mixed ability grouping of gifted students may be commonly used by most respondents, with almost half indicating that they asked their gifted students to work in mixed ability groups for learning activities at least several times a week.

Allowing their gifted students a choice in grouping was also reported to be used by almost all respondents who identified gifted students in their class (97%), however only thirty percent reported using this strategy more than once a week. It appears that while most respondents may allow gifted students to choose whether to work collaboratively in a group or individually, two thirds allow this less than weekly.

Use of cross-setting (grouping students by ability across classrooms at the same grade level) was reported by only fifty-three percent of respondents. Thirty-five percent reported use of this strategy less than once a month and only eighteen percent reporting that they used cross-setting more than weekly. From these data, it appears that only just over half of respondents of gifted students use cross-setting as a grouping strategy for gifted students and that this strategy may not be used on a frequent basis.

Only twenty five percent of respondents identifying gifted students reported they used accelerating a gifted student to work with a higher grade. A large majority reported that they never used this strategy to cater for their gifted students (73%) and only eleven percent reported using this strategy more than weekly. The data suggests that above grade level grouping does not appear to be commonly used to group gifted students with other students of similar ability.

Key Findings

- Grouping gifted students with other students of similar ability does not appear to be a popular strategy, either within the regular class, across classes of the same grade or with students in higher grades.
- Mixed ability grouping of gifted students appears to be a commonly used strategy for gifted students. This strategy appears to be used with gifted students more frequently than same ability grouping.
- Allowing gifted students to choose whether to work in a collaborative group or individually appear to be used by most respondents, however the majority allow this choice less than once a week.

Summary

Grouping gifted students with others of similar ability (via in-class ability grouping, cross-setting, or above grade level grouping) does not appear to be used frequently: in most cases, once a week or less by the greater majority of respondents. Most significantly, the data here appears to indicate that heterogeneous/mixed-ability grouping for gifted students is preferred to homogeneous/same-ability grouping.

4.6 Analysis of the Questionnaire: Open-Response Questions

Three open-response questions were included at the end of the questionnaire to allow respondents to make further comments about strategies or issues which they thought were important in catering for gifted students. Respondents were asked to suggest strategies they thought were useful to cater for gifted students, which may have not been presented in the rating section, or to nominate strategies which they thought were especially important. Respondents were also asked to identify issues they felt affected the learning experiences provided for gifted students in their classroom. A final question allowed respondents to provide any further comments regarding provision for gifted students in the regular classroom. On analysis of the responses submitted for this final question, it was found that these corresponded to the two previous questions on strategies and issues, and the appropriate responses were therefore included in the respective data analysis for those questions. These data were analysed in both a quantitative and qualitative manner: quantitative analysis identified the frequency suggested by respondents, while qualitative analysis revealed recurring themes in responses. A table of coding categories which emerged from the data is included as appendix 11.

4.6.1 Strategies Respondents Nominated as Useful for Gifted Students

This question was included to allow respondents to nominate strategies they thought were successful to cater for gifted students. The responses allow identification of popularly used strategies, with comments indicating why respondents thought these were successful. The most common theme of strategy used to cater for gifted students reported by this sample of respondents was some form of choice via student interest/negotiation, student-centred learning or product differentiation; reported by a total of thirty-four percent of all respondents. Significant proportions also stated that they used research (26%), open-ended tasks (22%), independent work or program (17%), peer tutoring (14%), collaborative learning (12%), extension after class work (12%), problem solving (10%), or contracts (9%). Smaller proportions suggested pace differentiation (6%), technology, ability grouping or multiple intelligences (each 5%). Various other strategies were reported by 1-4% of respondents. The full results are shown in table 21.

Table 21
Strategies Nominated for Gifted Students

Strategy (In Order of Frequency Reported)	Respondents who Reported this Strategy as Useful for Gifted Students in their Regular Class	
	Number	Percentage
Research	50	26
Open-ended tasks/activities	41	22
Choice – student interest / negotiation	33	17
Independent work / program	32	17
Peer tutor / teacher	27	14
Collaborative learning	22	12
Extension (after class work)	22	12
Problem solving	19	10
Student-centred learning	18	9
Contracts	17	9
Thinking strategies	16	8
Product differentiation	14	7
Own pace	11	6
Using technology	10	5
Ability group	9	5
Multiple intelligences	9	5
Self-assessment	7	4
Internet	7	4
Thematic approaches	7	4
Literature based activities	7	4
Real life applications	5	3
Higher level thinking	5	3
Extra work	4	2
Competitions	4	2
Teacher expectation	4	2
Work with older children	4	2
Enrichment classes	3	1.6
Negotiated assessment	3	1.6
Rubrics – student made	3	1.6
Learning centres	3	1.6
Critical thinking activities	3	1.6
Visuals	3	1.6
Lane Clark – mini enquiries	3	1.6
Pre-testing	2	1
Extra homework	2	1
Rubrics – teacher provided	2	1
Critical literacy	2	1
Writing	2	1
MAG	1	0.5
Excursions / incursions	1	0.5
Michael Pohl strategies	1	0.5
Triad model	1	0.5

Percentages of 1.6 and 0.5 were not rounded due to error magnification.

Purple responses indicate use of Choice strategies. Green responses indicate use of Thinking Skills strategies. Blue responses indicate use of Grouping strategies.

4.6.1.1 Choice Strategies

Strategies involving choice were the most frequently nominated in response to this question and were often described as ‘negotiated’ or ‘student-centred’ by research participants in responses to the open-response questions (34%). Allowing students choice or negotiation of topics, activities or reading material according to interest was suggested by seventeen percent of all respondents. Student-centred learning was suggested by a further nine percent of respondents, with comments indicating that gifted students were involved in designing activities, decision making, planning, evaluation, and a recognition of students’ interests and leaning styles. Product differentiation strategies (comments indicating choice of method to present learning) were suggested by seven percent of the sample. Typical comments which showed the use of choice as a strategy included:

- “Projects that work on a points system i.e. the student chooses out of about 10 activities, must accumulate 100 points, different activities are worth different points.”
- “Depending on personality but mainly challenge and choice e.g. creative or open-ended tasks with choices for the method of exploring and producing/presenting.”
- “Having some chance to design their activity e.g. create question about topic, give them their own time to work independently.”
- “Allowing children to be involved in making decisions about what they can learn.”
- “Children determining criteria for research and assessment. Choice of topics within a theme.”

Key Findings

- Strategies involving elements of choice were commonly suggested by questionnaire respondents as successful for gifted students.
- Choice strategies were often indicated in combination with other strategies such as research or independent tasks/ programs.

4.6.1.2 Research

Research was the most frequently nominated individual strategy, reported by twenty-six percent of all respondents, suggesting that this was a popular, or at least well known strategy used to cater for gifted students. Comments indicated they thought that independent research enabled them to provide challenge for their gifted students by including choice elements such as self-selection of a topic of interest, setting own tasks/work targets and negotiation of presentation formats. Participants in this study were able to suggest a variety of research strategies including individual/independent research assignments, project-based learning, long range projects, independent technology projects, power-point presentations, internet research tasks, portfolios and investigation of real-world situations. One response described a particularly well-developed system, which the respondent claimed worked very effectively but had taken a great deal of time to prepare:

Independent research... My TAGS program has a host of projects across all learning areas and intelligences (8). Can choose their own from the comprehensive range. These focus on thinking skills and Bloom's levels.

Key Findings

- Research appears to be a popular strategy to cater for gifted students.
- A variety of research strategies were put forward as useful for gifted students.
- Comments identifying research as a successful strategy for gifted students often indicated elements of choice, which were thought to provide appropriate challenge for gifted students.

4.6.1.3 Open-Ended Activities

Nominated by twenty-two percent of all respondents, this was the second most frequently suggested individual strategy. Most comments indicated a perception that open-ended activities were useful to involve all students in the regular class as it gave students opportunity to work at their own level, therefore enabling gifted students to demonstrate their abilities and learn to potential:

- “Open-ended activities allowing students to demonstrate skills of a more advanced level.”
- “Set open-ended tasks that can be accessed by all students e.g. Venn diagram, T- charts, mind maps.”
- “Many strategies will work very effectively for a range because of their open-ended nature.”
- “I think most gifted students are catered for in normal well-run classrooms when the types of activities are open-ended.”

These types of comments appear to indicate that respondents feel that open-ended tasks at regular class level successfully cater for gifted students.

Key Findings

- Open-ended activities appear to be a popular strategy to cater for gifted students.
- Comments indicated little differentiation of open-ended activities for gifted students.

4.6.1.4 Thinking Skills

Just over eighteen percent of all respondents suggested problem solving or thinking strategies as useful to cater for gifted students. Various thinking strategies were nominated in respondents' comments, including critical, creative/lateral, higher-level and visual strategies (8%). Comments indicating problem-solving strategies (10%) included ideas about cross-curricular learning and puzzles or activities which allowed student to explore alternative solutions.

An hour block set aside each week for teaching thinking skills (building up a repertoire of choice for thinking strategies).

Key Finding

- Several thinking skills strategies were nominated as relevant for use with gifted students in regular classrooms.

4.6.1.5 Independent Work

Nearly seventeen percent of all respondents (n=32) reported the use of independent work or program to challenge gifted students. Comments indicated this was often combined with research, extension and/or choice strategies.

Key Finding

- Independent work was not reported to be used extensively with gifted students.

4.6.1.6 Peer Tutoring

Peer tutoring was nominated as a useful strategy by fourteen percent of all respondents. Comments often indicated that gifted students were asked to teach material to other students or to assist less able students in the regular class.

Typical comments included:

- “Allowing the student to research info to teach to the class as a whole.”
- “Buddying up – helping weaker students.”
- ‘Helper – go and explain and give reasons to struggling children’
- “Making worksheets for lower/high achievers. Setting up work centres for the class.”
- “Giving them responsibility to assist less capable learners.”

Key Finding

- Comments indicating peer-tutoring suggested a value for gifted students in teaching or mentoring other students.

4.6.1.7 Grouping

Almost seventeen percent of respondents made comments regarding grouping options for gifted students with more than twice as many responses suggested mixed-ability grouping (12%) than same-ability grouping (5%). Mixed-ability grouping/collaborative learning was nominated as a useful strategy by almost twelve percent of respondents, with comments indicating support for gifted children mentoring other students in co-operative learning situations or leading group activities, for example:

- “Leading brainstorming in group activities.”
- “Group leaders in collaborative tasks.”

Grouping gifted students by ability was suggested by only a small proportion of respondents (5%). Typical comments recognised a challenge value in this strategy and/or lack of opportunity to provide this in the regular class situation:

- “They do enjoy working with other like-minded students and like to challenge each other.”
- “Working with a small group/similar ability on an open-ended problem involving design/drawing (and possibly construction).”
- “Not enough opportunity to work with chn of like ability.”
- “Limited peer stimulation.”

Grouping gifted students with older children was nominated by only two percent of respondents nominated. Only one respondent mentioned cross-setting (ability grouping across the same grade level), and allowing choice in grouping students was not suggested in response to this question. The data suggests that grouping students by ability may not be a priority strategy for respondents.

Key Findings

- Grouping gifted students by ability does not seem to be a commonly used strategy.
- Mixed ability grouping appears to be preferred to same ability grouping.
- Comments indicating mixed-ability grouping often suggested a value for the gifted student in mentoring other students or providing a leadership role in group activities.

4.6.1.8 Extension

Eleven percent of respondents (n=21) reported that some form of extension was offered to gifted students as part of their regular class curriculum. Most of the responses citing 'extension' however indicated that this strategy was used after the completion of regular class activities, with typical comments including:

- “Having extension activities to carry on with when work is completed.”
- “Giving them a choice of extra work to do when they complete a task.”
- “A programme called “Passport to Success”. This is an independent programme for extension. When he/she finishes class work early then he/she chooses a task.”

Key Finding

- Gifted students are given extension tasks after completion of regular class tasks, rather than as differentiated activities.

4.6.1.9 Pace

Only 6% of respondents suggested providing materials for gifted students to work at their own pace. The data indicated that allowing gifted students to work at their own pace was not a significant differentiation strategy used for gifted students.

Key Finding

- Differentiation via pace does not appear to be a commonly used strategy.

4.6.2 Issues Identified by Respondents as Affecting Provision for Gifted Students

Respondents were asked to suggest some of the issues that affect the learning experiences provided for gifted students in their classroom. Several groups of issues were identified in the data (Table 22).

Table 22

Issues Identified as Affecting Provision for Gifted Students in Regular Classes

Issues Reported by Respondents (In Order of Frequency Reported)	Respondents who Stated this Issue Affected Provision for Gifted Students in their Regular Classes	
	Number	Percentage
Time (preparation)	47	25
Materials	46	24
Weaker students	34	18
School timetable / in-class time	30	16
Ability range	26	14
Teacher knowledge	25	13
Computer access/resources	25	13
In-class support	23	12
Classroom space	20	11
Class size (large)	20	11
Behaviour (other students)	19	10
Poor work habits	16	8
Peer relationships	15	8
Contact time with gifted students	13	7
Need special provision	12	6
Challenge	11	6
Lack of support from school	9	5
Underachievement	8	4
Gifted children often get forgotten	8	4
Identification	8	4
P.E.A.C.	8	4
Rural location	7	4
Curriculum pressures	6	3
Lack of parental support	6	3
Asynchronous development	5	3
All children are gifted (teacher belief)	5	3
Behaviour problems (gifted student)	5	3
Attitude to others	5	3
Social (teacher beliefs)	5	3
Library resources	5	3
Social skills (gifted student)	4	2
Definition of giftedness	4	2
Multi-age grouping	4	2
Parents expectations	3	2
Peer tutoring – negative attitude	3	2
Perfectionists	3	2
Inclusion (other special needs)	3	2
Non-mainstream culture	3	2
Gifted programs (access, funding)	3	2
Paperwork	2	1
Missing regular class activities	2	1
Low self-esteem /lack confidence	2	1
English Second Language	1	0.5
Benchmarks (testing, levels)	1	0.5
Home background	1	0.5

Blue responses indicate time issues; green responses indicate resource issues; red responses indicate range of students' issues, yellow responses indicate teacher knowledge issues.

The most frequent responses to this question indicate that the main groups of issues reported by respondents were:

- **Time** – Issues around the use of time to prepare learning experiences; and teaching/learning time in the classroom.
- **Resources** – access to teaching/learning materials, access to computer resources including hardware, software and the internet, and library resources.
- **Range of students** – including range of ability levels, priority for weaker students and inclusion of other special needs learners.
- **Teacher knowledge** – about giftedness/provision, identification, characteristics/ definition of giftedness.

4.6.2.1 Time Issues

The most frequent group of issues, nominated by just over fifty percent of respondents, was a range of issues associated with time, which are shown in table 23 and can be summarised in two main themes:

- Preparation time for planning of learning activities; and
- Class time for teaching and learning, including issues about school timetables, perceived overcrowded curriculum and contact time with gifted students.

Table 23

Time Issues Reported by Questionnaire Respondents

Time Issues	Respondents who Stated this Issue Affected Provision for Gifted Students in their Regular Classes	
	Number	Percentage
Time (total)	96	50
Time (preparation)	47	25
School timetable / in-class time	30	16
Curriculum pressures	6	3
Contact time with gifted students	13	7

4.6.2.1.1 Preparation Time

A lack of time for planning and preparation affecting their capacity to cater for gifted students was reported by nearly twenty-five percent of respondents. Comments strongly indicated that they felt they had insufficient time for planning extension activities or to prepare resources, for example:

- “Inadequate time to prepare individualised programs.”
- “Not enough time with so much to do just organising ‘normal’ class activities.”
- “Time to set up a TAGS program that will be effective and teachers want to implement. It took me hours and hours of holidays, after school etc. to set mine up.”
- “Time to prepare separate activities”

The teachers’ comments here appear to indicate that preparing activities for gifted students involves creating extra, separate activities, *in addition* to planning their regular curriculum activities.

4.6.2.1.2 Class Time

Class time issues were reported by just over 25% of respondents with three sub-issues identified:

- School timetable
- Overloaded curriculum
- Time with gifted students

The school timetable/learning time was reported as significant by nearly 16% of questionnaire respondents. Comments indicated that timetabling, disruptions or

competition with other learning areas impacted on the contact time with their class, creating difficulties in maintaining continuity or allowing students to complete complex tasks, for example:

- “Confines and regimentation of a regular class timetable.”
- “Interruptions to daily programs/projects by timetable demands e.g. choir, drama, music, sport – students often want to continue with projects and resent interruptions at crucial times.”

A further 3% of respondents explicitly expressed this issue as a perception of the curriculum being overcrowded. These respondents voiced their concerns in comments suggesting they felt pressure to cover what was required or that ‘covering the basics’ was difficult, with indicative comments including:

- “Finding time to cater for 1-2 students with the curriculum ‘overload’ already imposed on class respondents.”
- “As the timetable becomes fuller, expectations of teacher workload increases – with associated stress – we find we don’t have enough time to give to those who need/deserve it.”

A lack of contact time with gifted students was reported by nearly 7% of respondents (n=13). This relates to the amount of time respondents feel they have available to work specifically with the gifted students in their heterogeneous class. The respondents’ comments indicated that they felt provision of challenging learning activities for their gifted students was negatively impacted by the lack of time they were able to spend with them on an individual basis. Typical comments included:

- “Adequate one-on-one time to discuss progress on independent task.”

- “Providing time within the school day to guide them in independent research projects.”
- “Insufficient time to encourage gifted students – they may be gifted but often need as much time as struggling students to reach their potential.

The data on class time issues appears to suggest these respondents felt there was insufficient time in the school day to cover the curriculum tasks which they felt were expected, or for respondents to guide gifted students in independent learning tasks.

Key Findings

- More than half the questionnaire respondents indicated that a lack of time affected provision for their gifted students.
- Teachers believe they lack time to plan effectively for gifted students.
- Planning activities for gifted students appears to be associated with extra workload for teachers.
- Class time vs. curriculum: some teachers find that they have insufficient class time (or contact time) with their students to cover what they perceive as the required curriculum.

4.6.2.2 Resources Issues

A lack of materials or resources affecting their ability to cater for gifted students was reported by almost 40% of questionnaire respondents. This was the second most frequent group of responses, shown in three themes:

- Curricular or teaching materials;
- Access to computer and/or internet resources; and
- Library resources.

Table 24

Resources Issues Reported by Respondents

Resources issues	Respondents who Stated this Issue Affected Provision for Gifted Students in their Regular Classes	
	Number	Percentage
Resources (total)	76	40
Curricula/teaching materials	46	24
Computer access/resources	25	13
Library resources	5	3

A lack of curricular or teaching materials was identified by twenty-four percent of questionnaire respondents. The comments suggest that respondents feel that there was limited access to the curricular resources they perceive they need to teach gifted students with typical comments including:

- “Inadequate resources to pursue interests/kits of self-paced extension.”
- “Lack of resources – packages of work that can be used by classroom respondents who are inexperienced or strapped for time.”
- “There is a lack of suitable resources in our school to cater for these students.”

The respondents’ comments for this issue possibly indicate that they were looking for prepared or ready-made materials/units of work which could be used to extend their gifted students beyond regular class activities. They may also suggest a lack of knowledge or confidence in developing their own curricular materials in response to student needs.

Limited access to computer resources for such activities as student research or presentation of work was reported as an issue by thirteen percent of the sample, with

respondents raising concerns about the availability of computer hardware, appropriate software or internet access, while limited library resources were reported by three percent of respondents (n=5). Again, these comments appeared to indicate that respondents perceived there were particular resources they needed in order to be able to cater for their gifted students.

Key Findings

- Almost 40% of questionnaire respondents indicated that a lack of resources affected provision for their gifted students.
- Teachers perceive they need access to prepared higher-level curricula to cater for their gifted students.
- Teachers may lack knowledge or confidence to develop their own resources or curricula for gifted students.
- Computer access may affect provision.

4.6.2.3 Issues about the Range of Students in Regular Classes

The third most frequent group of issues identified in the open-response section of the questionnaire was the difficulties respondents perceive they face in catering for the wide range of students present in regular classes. This was reported by almost thirty-three percent of survey respondents, shown as three themes:

- Difficulties in catering for the range of learning abilities present in regular classes;
- A perceived priority for learning support needs; and
- Inclusion of other special needs learners.

Table 25

Range of Student Issues Reported by Respondents

Range of Student Issues	Respondents who Stated this Issue Affected Provision for Gifted Students in their Regular Classes	
	Number	Percentage
Range of students (total)	63	33
Range of learning abilities	26	14
Priority for learning support needs	34	18
Inclusion (other special needs)	3	2

Difficulties in catering for a wide range of learning abilities were identified as an issue by nearly fourteen percent of questionnaire respondents. Respondents commented, for example, that attempting to cater for a ‘huge’ range of ability levels affected their provision for gifted students. Typical comments included:

- “Due to the range of ability levels in the classroom, a limited amount of time is available to provide extension for gifted students.”
- “Teacher must spread oneself amongst all students and cannot always give the gifted/talented students the full time they deserve!”

The data in this research also indicated that respondents felt they were expected to give priority to students with learning support needs. Nearly eighteen percent of questionnaire respondents stated that they perceived a strong emphasis on providing remediation and support for students with learning difficulties in preference to catering for gifted students, for example:

- “Having to give more of my attention to the students at educational risk.”
- “The emphasis is still on ‘at-risk’ and underachievers. I don’t believe gifted and talented students are truly recognised as children needing specialised attention.”

- “I spend 90% of my day working with or disciplining under-achieving or behaviour problem/off-task students that gifted students tend to be left to themselves unfortunately.”

A further 2% of respondents commented that inclusion of students with other special needs (such as ADD, Aspergers, autism etc) in their classes impacted upon providing for gifted students, for example:

- “Difficult to work with gifted chn, regular chn, weak chn and autistic child all at the same time.”

Respondents’ comments for this group of issues appear to express some degree of frustration on the part of classroom respondents in being required to cater for all of the various students’ needs in their regular class simultaneously. Combined, these data indicate that one third of respondents thought that the range of students present in their regular classes, and perceived expectations about priorities for particular groups of students made it difficult for them to cater effectively for their gifted students.

Key Findings

- One third of questionnaire respondents indicated that the range of students in their class negatively affected provision for their gifted students.
- Comments indicated a sense of frustration in not being able to cater for students’ learning needs adequately.
- Almost eighteen percent of questionnaire respondents indicated that they perceived a strong emphasis on providing remediation and support for students with learning difficulties in preference to catering for gifted students.

4.6.2.4 Teacher Knowledge Issues

Almost twenty-two percent of all respondents expressed comments directly related to issues about teacher knowledge of giftedness or provision. Some comments expressed a personal concern at a lack of knowledge in this area, while some comments revealed a lack of awareness of gifted definitions or characteristics. Respondents expressed concern at their own lack of knowledge about giftedness or how to cater effectively for gifted students. These comments showed that respondents were unsure how to challenge gifted students, wanted more knowledge of appropriate strategies, or revealed concerns about the expectation on teachers to identify gifted students, with typical comments including:

- “Need more practical ideas for the classroom.”
- “Would like to be more competent with thinking skills, Bloom’s Taxonomy, organising thinking activities that demand evidence of reasoning, independent research.”
- “Are the activities challenging the gifted child or just keeping them busy?”
- “Teachers require more time and support to identify gifted students, especially in the creativity area.”

Table 26

Teacher Knowledge Issues Reported by Respondents

Teacher Knowledge Issues	Respondents who Stated this Issue Affected Provision for Gifted Students in their Regular Classes	
	Number	Percentage
Teacher Knowledge (total)	42	22
Concern about personal knowledge	25	13
Identification	8	4
All children are gifted (teacher belief)	5	3
Definition of giftedness	4	2

Some comments linked this lack of teacher knowledge to the issue of prioritising students with learning support needs, for example:

- “Many teachers cater for weaker kids but not TAGS kids because they don’t have the skills or support.”
- “We need more PD on teaching the gifted in a regular classroom – we now have help for the ‘slower learner’ but seldom for the gifted.”

Nearly 5% of respondents’ comments revealed a lack of understanding about giftedness and/or definitions, typically:

- “I feel that most students are ‘gifted’ in some area.”
- “I believe that all children have the potential to be gifted.”
- “My definition of gifted may be very different from the formal definition.”

The respondents’ comments here showed that a significant proportion felt that they either lacked knowledge about gifted characteristics or provision, or were uncertain of their knowledge in this area. The data indicates a possibility that respondents’ knowledge about gifted characteristics and/or provision may be a significant factor affecting the learning experiences of gifted students in regular classrooms.

Key Finding

- Over one fifth of teachers identified a lack of knowledge about giftedness and/or gifted pedagogy as significant in affecting their identification of, and provision for, gifted students.

4.6.2.5 Other Significant Issues

Other issues which were reported by respondents included achievement of gifted students, in class support, class size, classroom size, and behaviour of non-identified students.

4.6.2.5.1 Achievement

Issues around achievement for gifted students was reported by nearly 17% of respondents in comments about poor work habits, underachievement, asynchrony and perfectionism. The respondents reporting poor work habits or underachievement reported that some gifted students lacked motivation, interest, independence or organisation in comments such as:

- “Some gifted students do not possess the skills/strategies to work on extension programmes (e.g. independent skills, group work skills).”
- “Gifted students often work below their potential in general class activities. They will only work well in their area of specific interest or strength.”
- “These students are not always high achievers, some often are disorganised. Some are arrogant and some very untidy.”
- “Most tend to be unable to push themselves beyond anything basic even though they have the ability.”

Comments such as those above suggest that these respondents may not be aware of the relationship between cognitively challenging tasks and engagement for gifted learners. It also appears they may expect gifted students to already possess organisational and independent learning skills.

Table 27

Achievement Issues Reported by Respondents

Achievement Issues	Respondents who Stated this Issue Affected Provision for Gifted Students in their Regular Classes	
	Number	Percentage
Achievement	32	17
Poor work habits	16	8
Underachievement	8	4
Asynchronous development	5	3
Perfectionists	3	2

Additionally, ‘perfectionism’, a related issue to underachievement for gifted students, was reported by less than two percent of respondents, with comments indicating an awareness that perfectionist traits shown by some gifted students often caused a fear of failure and difficulty in completing tasks. The low numbers of respondents reporting perfectionism as an issue (1.6%) suggest that respondents may be unaware of the importance of this factor as an influence on learning and achievement for gifted students. The respondents’ comments in relation to achievement issues may also indicate a further issue about teacher understanding of giftedness and knowledge of learning traits of gifted children.

Key Findings

- Gifted students may demonstrate underachievement issues in regular classes, in not achieving to what teachers perceive as their ability.
- Teachers may perceive underachievement issues for gifted students in regular classes to be caused by poor work habits or lack of self-motivation.

4.6.5.2.2 In-Class Support

The availability of in-class support was suggested as an issue by twelve percent of questionnaire respondents. Respondents commented that increased human resources in the classroom would assist them to cater for their gifted students, typically:

- “It would be good if they were tested for ‘giftedness’ and if they are, then assistance (aide or teacher time) be given to help extend these students even further.”
- “Teachers’ aide for gifted kids would be sensational!! Or a teacher of course!”

The comments indicating this issue, are suggestive of a perceived need of respondents for ‘another pair of hands’ to assist in their regular class. Other comments suggest the possibility that this issue may be related to other issues raised here, for example an aide to assist with several groups of ability or to increase the amount of time available to work individually with gifted students.

Key Finding

- Some teachers feel that greater in-class support would assist in catering for gifted students.

4.6.2.5.3 Class Size

In relation to class size, the data indicates that respondents thought the number of students in a classroom was an issue in catering for gifted students. A large class size affecting their ability to cater for gifted students in regular classes was identified by over ten percent of questionnaire respondents. These respondents reported that individual attention was severely limited by the class size and that the student-teacher ratio affected provision for their gifted students. Similarly, two respondents from

schools located in rural areas indicated that they thought the small class size in their schools was a bonus in allowing all children to work at individual levels and enabled better provision for all levels of students, as they didn't teach at year levels.

Key Finding

- Some teachers perceive that greater numbers of students in regular classes may negatively affect provision for gifted students.

4.6.2.5.4 Classroom Size

Classroom size (physical size of regular classrooms) was indicated as an issue impacting negatively on respondents' ability to cater for gifted students by over ten percent of respondents, as exemplified by these comments:

- "Lack of space. No room for a number of work stations."
- "Space restrictions do not always allow chn to work at learning centres/corners etc."
- "Too many students, not enough space. I have 34 students and a very small room therefore it's hard to make room for floor space, group work etc."

The comments for this issue possibly indicate that these respondents' concepts of differentiation for gifted students may involve the setup of special activities, work stations or learning centres outside of the regular curriculum, and therefore a perception that lack of physical space in the classroom restricted their ability to provide for their gifted learners.

Key Finding

- Some teachers perceive that restriction in the physical space available to them negatively affects the provision for gifted students.

4.6.2.5.5 Behaviour of Non-Identified Students

Behavioural issues were a concern to 10% of respondents. The respondents commented that behaviour problems or disruptive behaviour of students in their classes required close attention or took too much time, affecting their ability to provide for gifted students.

Key Finding

- Teachers may consider that dealing with behavioural issues affects the time available for them to provide for their gifted students.

4.7 Chapter Summary

Findings from the analysis of the questionnaire data provided information about respondents' experience, identification of gifted students, use of classroom strategies, and suggestions about useful strategies and issues affecting gifted provision. In regard to respondents' professional experience, the most significant findings showed that the majority had had limited professional development in gifted education. Most respondents were also not aware of a definition of giftedness to inform their practice. One of the most concerning findings in this study showed that nearly a quarter of respondents reported that there were no gifted students present in their regular classes. The data also showed that specialist gifted programs were not available to the greater majority of identified gifted students, indicating that importance of gifted provision in the regular classroom.

Findings from Section IV: Classroom Practices showed respondents' perceptions of their use of thirty-five instructional strategies, indicating that all thirty-five strategies were claimed to be used by at least some of these teachers. Although

there was variation in the reported use of the strategies, none of the strategies were reported to be used frequently. Open-ended activities were the most frequently reported strategy, with over fifty percent of respondents reporting use several times a week. One fifth of respondents reported that they never used pace variation to differentiate learning experiences for their gifted students. Same-ability grouping strategies were not popularly used, and less preferred than mixed-ability grouping.

The open response questions revealed respondents' suggestions for successful strategies and perceived issues. Various strategies indicating use of choice were the most frequently suggested by just over one third of respondents. Research and open-ended activities were also suggested more frequently. The most frequent issues which respondents suggested as affecting their provision for gifted students were time, resources, range of students, and knowledge about giftedness/gifted pedagogy. Findings indicated that teachers felt pressured by a lack of time, an extensive workload, and a perception that they were expected to provide for struggling students in priority to gifted students.

Chapter Five

Data Analysis and Findings: Focus Group and Interview Data

5.1 Introduction

The purpose of this chapter is to analyse the qualitative data obtained from focus group discussions with practising teachers of regular classes and interviews with gifted education specialists. The aim of these discussions and interviews was to further explore issues identified in the questionnaire, as well as potentially successful strategies to cater for gifted students. Ten regular class teachers participated in two focus group discussions (five in each), and the five gifted education specialists (GES) were interviewed individually. These were conducted in a semi-structured format based on the following questions:

1. How are gifted students catered for in your school/district?
2. What do you see as some of the issues facing teachers in providing for gifted students in regular classes? What solutions do you see for these issues?
3. In a state-wide survey of teachers, four issues of concern to teachers were identified:
 - Lack of time
 - Access to resources
 - Range of students in class
 - Knowledge about giftedness/strategies for gifted students

Do you see any of these as issues in catering for your gifted students? If so, what solutions could be provided?

4. What are some successful strategies for gifted students you have used or seen used in regular classes?

Inductive analysis allowed significant themes to emerge from the data.

Transcripts of the two focus group meetings and five GES interviews were systematically read and analysed to identify recurring concepts. Similar concepts were grouped into major themes. Recurring themes were then encoded via N-Vivo9. The four main issues present in the questionnaire data were also represented in these data. Teacher professional development in gifted education was also specifically discussed by the focus group teachers and GES, and is therefore included here as a fifth issue. The information in this chapter is organised in seven sections via these five issues, a sixth section covering other issues, and a final section discussing classroom strategies which the focus group and/or interview participants thought were successful:

- **Issue 1:** Time – including ‘planning time’ and ‘class time’;
- **Issue 2:** Resources;
- **Issue 3:** Range of students – including range of learning abilities /inclusion of special needs students, and perceived priority for lower achieving students;
- **Issue 4:** Teacher knowledge – including knowledge about giftedness, identification, and provision;
- **Issue 5:** Teacher professional development in gifted education;
- **Other issues** raised by focus group and interview participants – including class size, behaviour of non-identified students, classroom size, class support, school support, and curriculum changes; and

- **Successful Classroom Strategies** – Strategies which research participants thought successful in catering for the learning needs of gifted students in regular classes.

5.2 Issue One: Time

In response to the open questions, over 50% of questionnaire respondents identified ‘time’ as an issue affecting their provision for gifted students. In this phase of the research, seven focus group teachers and all five of the GES discussed time issues in relation to class teachers catering for gifted students. The two themes around the issue of ‘time’ present in the questionnaire data (‘planning time’ and ‘class time’) were also present in the focus group and interview data:

- **Planning time** focuses on the time teachers perceive they have available to prepare effective learning experiences or organise appropriate resources to use with their students.
- **Class time** refers to the time teachers have available in class with their students, and includes sub-issues of the school timetable, curriculum and contact time with gifted students.

This section is organised according to these two themes.

5.2.1 Planning Time

In both the focus group discussions, comments about ‘planning time’ were commonly related to a perception of an extensive workload for teachers. A distinct contrast in views on the issue of ‘planning time’ was shown between the teacher data (questionnaire and focus groups) and thoughts of the GES. All five of the GES

discussed class teachers' perception of lack of time as an issue in catering for their gifted students, with their comments revealing three themes in relation to this issue:

- Acknowledgement that class teachers saw planning time as problematic;
- A view that teachers' concerns were actually due to other causes;
- Concern that teachers viewed catering for gifted students as 'extra' to their normal teaching duties.

5.2.1.1 Teachers View Lack of Time to Plan for Gifted Students

The focus group teachers' remarks indicated that they thought there was inadequate time for teachers to plan properly for all of the tasks they felt they were expected to include in their teaching role. In particular, these teachers explained that they thought the workload expected of regular class teachers made it difficult to find time to plan appropriate learning experiences for their gifted students. For example, Sandra (T6) asserted that while she recognised the importance of planning rich, multi-layered tasks, substantial time was required to do this well. Adele (T9) likewise explained that she saw the need to plan appropriate tasks for gifted learners, but felt that if teachers were expected to do so, they should be given specific time for this planning. Her opinion was that the allocated DOTT time was already too small to allow teachers to prepare what was necessary. Both Jenny (T10) and Sandra (T6) further associated this issue of workload/lack of planning time to the issue of teachers having to cater for the individual needs of a variety of learners in their classes. This theme is further discussed in section three of this chapter.

All of the GES reported that they often heard class teachers make comments similar to those expressed by the focus group teachers. Rose (GES4), for example, argued that successful teachers liked to prepare well for their classes and that this took

time, creating a perception of pressure for these teachers. The GES accepted that time/workload could therefore be seen as an issue by teachers, both in terms of time management and also in terms of accountability.

Key Findings

- It appears that teachers believe they lack time to plan effectively for gifted students.
- The GES acknowledged that teachers were concerned about a lack of planning time affecting provision for gifted students.

5.2.1.2 Teachers' Concerns about Other Causes

The GES all expressed the view that class teachers saw 'planning time' as an issue. However, they unanimously refuted the idea that of a 'lack of time' was, in itself, a valid issue affecting teachers' ability to cater for gifted learners: their comments suggested they felt that teachers' concerns in this regard were actually due to other causes. These GES explained their views that many teachers lacked an awareness of differentiation, or perhaps the skills necessary to differentiate curriculum. They commented that teachers needed to learn to negotiate activities and assessments with students, explicitly teach and assist student to use higher order thinking skills, and/or enable students to set goals for themselves to work independently in the classroom. Helen's view (GES2), for example, was that effective provision for gifted students relied on the teachers' knowledge of appropriate strategies. She reasoned that teachers would make time for what they valued, and that those who valued differentiation would make time for learning about strategies such as higher order thinking. While Lee (GES1) recognised that planning appropriate experiences for gifted students could be intensive, she was fairly direct in her

disagreement with lack of time as a factor influencing provision for gifted students, and thought that perceptions of curriculum was an underlying issue:

I don't accept lack of time as any excuse for anything. We all have the same amount of time. What they probably need to do is think smarter rather than harder. Rather than making it an add-on, as to how they are integrating. And that's what it's all about is the integration in their learning program. It's the time they spend thinking about it, and in thinking about how they're going to put it in.

Key Finding

- The perspectives of the GES in this research indicated that teachers' perceptions about time issues may be due to other issues such as lack of teacher knowledge about gifted strategies and/or differentiation.

5.2.1.3 Teachers' View of Catering for Gifted Students as 'Extra' to their Normal Teaching Duties

A theme which arose numerous times during analysis of the GES comments, was that a large proportion of regular class teachers believed provision for gifted students was an *extra* or addition to their normal teaching responsibility, as exemplified by Jody's (GES5) comment:

They see it as an extra. Just on top of everything that they've got to do. And so there is a reluctance there, to take it on board because they think it's extra work. So getting them to realise that it doesn't have to be extra work. It's not supposed to be extra work and that the strategies that you can use will work for all of your children.

All the GES disagreed with the view that providing for gifted students created ‘extra work’, and described successful provision for gifted students as thinking about learning and teaching in a ‘different’ way rather than as ‘extra’ work for the class teacher. They explained that this would be a mind-shift for teachers who thought about gifted provision as an extra to regular class teaching or as extra work for themselves. For example, Kate (GES3) explained that it was a different way of thinking about planning for learning which was required, rather than additional planning which took more of the teachers’ time:

It’s not more, teachers are not having to do more, they are having to think about and analyse what they are doing and what makes sense. So it might not necessarily be the extra. It’s about doing it efficiently and doing it effectively and making sure if you’re preparing a piece of work that it does cater for all the kids in the class rather than having to have 32 different pieces of work.

Key Findings

- Some teachers may believe that catering for gifted students is extra work in addition to their regular teaching role.
- The GES viewed catering for gifted students as different rather than extra work for teachers.

5.2.2 Class Time

Two themes emerged from the analysis of the focus group teachers and GES comments with regard to the time teachers spent with their students in class:

- Time vs. curriculum
- Potentially successful options

5.2.2.1 Time vs. Curriculum

“How do I fit it all in?” was a common theme in both focus group discussions, with participants relating that making time for the curriculum they perceived they were expected to cover within the school timetable was challenging. Comments in both the questionnaire and focus group discussions indicated that teachers felt the time needed to cover the required curriculum was greater than the time they had available with their students. Six of the focus group teachers made comments indicating that they felt time constraints in the classroom, curriculum expectations or the amount of time they were able to spend with their students during the school day had a negative impact on providing for their gifted students, as exemplified by Sandra’s (T6) comment:

There’s that attitude of ‘you’ve got to get stuff done during the school day and how do you fit that in? And how do you get everyone on board?’ And there are a lot of issues there.

These teachers’ comments indicated that that they found it difficult to make time to provide appropriate curriculum for their gifted students amongst a heterogeneous class. Tanya’s (T2) comments indicate the degree of frustration expressed by the teachers in trying to provide extended learning in the time available:

Some days I only have my kids for two periods in a whole day because they’re off at other specialist subjects and things. Finding the time to even let the kids get their teeth into something ‘cause you’ll only have them for hour and then they’re off to something else... a half hour lesson before they’re off to LOTE and so on. So I actually find finding time in class is difficult.

While the GES also acknowledged that the teachers they worked with often expressed concerns about a ‘lack of class time’, the GES again related this perception to other underlying issues, in particular teacher knowledge about gifted strategies, perceived curriculum expectations, or beliefs that catering for gifted students is extra work. Helen (GES2) and Rose (GES4) expressed concern that recent curriculum changes had caused teachers to put a lot of effort into learning about new curriculum rather than learning about differentiation in the classroom, and supporting students to learn different things in the same classroom. Similar to the comments in the previous section, Kate (GES3) linked the class time issue to teachers’ beliefs that catering for gifted students was ‘extra’ and therefore difficult to make time for in the classroom. She found that teachers would often approach her with questions such as:

“Ok, we’re happy to do something, but how do we fit it in to all of the rest of the things that we do.” I don’t think it always is an extra thing but teachers see it as an extra thing. That’s a big issue that I get asked about I think, most of anything. . . “But how do I do it all?”.

Key Findings

- Some teachers may find that they have insufficient class time with their students to cover what they perceive as the required curriculum.
- The GES acknowledged teachers’ concerns about class time, however see this as a lack of knowledge about differentiation.
- Some teachers may view provision of appropriate learning activities for gifted students as ‘extra work’.
- The perspectives of the GES in this research indicated that teachers’ perceptions about time issues may be due to other issues such as teacher

knowledge about gifted strategies/differentiation, perceived curriculum expectations, or beliefs that catering for gifted students is extra work.

5.2.2.2 *Potentially Successful Options*

While most focus group teachers indicated difficulties caused by the class time available to them, two teachers discussed ways of making their timetable work to allow them to cater for individual needs. Jenny (T10) thought that flexibility of the school timetable would allow greater in-class collaboration between teachers (ie shared teaching), allowing her to cater more effectively for her gifted students. Alice (T5) found that her project-based-learning curriculum allowed her both a degree of flexibility in her class timetable and opportunity for student-directed learning. She perceived that this flexibility enabled her to capitalise on students' enthusiasm, and allowed her time to work with her gifted students:

I don't have a timetable in my classroom, except for music and Indonesian and things like that where the kids go out of the classroom or another teacher comes in. The rest of it is, almost, *'What shall we do today?'* I mean, it's not as blasé as that, but if we're doing solar ovens, and the day before, the kids say, *'We'd like to do a power-point presentation'*, then the next day we do it. We don't leave it for a week or something, then do it, because that's when the kids are eager for it, and I get excited about stuff like that as well.

Alice appears to be indicating in this comment, that flexibility in her planned curriculum allows flexibility in her use of class time. Lee's (GES1) comments indicated how teachers could use class time effectively to cater for gifted students,

explaining several strategies and summing up the concept of ‘different rather than extra’:

It shouldn’t be more time there and also, if you’re making it transparent and explicit to the students, they are setting their own goals, with you as the one who is providing the rigour and the focus questions or sort of focusing them on where they should be working towards. And you’re going back constantly seeing where they are. So you’re encouraging them in their questions and getting them through that process. It doesn’t require more time, it’s just a different way of delivery.

Key Finding

- Comments by both focus group teachers and GES indicate that a flexible curriculum, negotiated with students may enable teachers to better cater for gifted students.

5.2.3 Summary

The data in relation to time issues indicates that class teachers appear to feel pressured by an extensive workload, leaving them with insufficient time to plan effectively for gifted students in their classes, or cover what they perceive is expected in the school curriculum. Comments from two focus group teachers indicated possibilities in collaborative teaching, as well as flexibility of timetabling and curriculum as a means to alleviate this issue.

For the GES, the issue was conclusively ‘teacher knowledge’ and ‘beliefs about teaching’ rather than ‘time’. While they recognised that the requirements of teaching a heterogeneous class needed time management skills, they all commented

that teachers' perceptions of catering for gifted students as an 'extra' rather than 'different way' of teaching regular class created or at least contributed to teachers' perception of lack of time as an issue in catering for gifted students. Their comments suggest that teachers may not be equipped to cater for gifted students in a time efficient manner. It appears teachers may need greater knowledge of appropriate strategies to be able to implement gifted provision effectively in the time they have available.

The data indicates that there is a need to recognise that teachers may see a lack of time as an issue, but also acknowledge that addressing this issue may not be straightforward. It would appear that teachers' concerns over lack of time as a factor in catering for gifted students may be linked to their level of knowledge about gifted provision.

5.3 Issue Two: Resources

Access to appropriate resources was reported as an issue affecting their ability to cater for gifted students by almost forty percent of questionnaire respondents. Qualitative analysis of these responses indicated that these teachers feel they are unable to access curricula resources which they perceive would be helpful or necessary in delivering advanced activities for gifted students. Three themes were suggested in the data:

- Lack of curricular or teaching materials;
- Limited access to computer and/or internet resources; and
- Lack of library resources.

These themes were not present in the focus group or interview data. The issue of resources did not generate discussion in either of the focus groups, nor appear an important issue for these teachers. When asked about the findings of the questionnaire indicating that lack of resources was an issue, each of the GES related respondents' concerns about resources to deeper issues, especially a lack of knowledge about giftedness, about the types of resources needed, or about appropriate strategies.

They each intensely disagreed with the idea of a 'lack of resources' as an issue in catering for gifted students, using strongly worded phrases to express their opinions. Kate (GES3) thought it was "an excuse" or "a cry for help", while Lee (GES1) stated that she thought it was "a cop-out" and "defensive": "I don't see this as a pro-active type of thinking". She further remarked that, as the Gifted Education advisor in her district: "I am not overwhelmed by people ringing me up asking me for resources".

All five of the GES explained that they had heard teachers claim of lack of resources affected their provision for their gifted students, however all thought that this claim was really based on more complex issues. Their comments indicate that they felt that teachers needed greater knowledge about characteristics of gifted learners, knowledge of appropriate strategies, and opportunity to share knowledge with peers through networking and discussion with professional colleagues:

And it just comes down to your own skills and knowledge, I think.

Because to cater for them in a mainstream classroom, it just needs that knowledge of their characteristics and their needs and how you can use what you know about the children to move them forward in the higher order levels of thinking (Helen, GES2).

Jody (GES5) explained for example, her view that the required resources are ‘in your head’ and therefore teachers’ concerns about resources were related to their level of knowledge about gifted characteristics and appropriate strategies:

I think what I would say to those teachers would be ‘Well what resources do you get for your special needs students?’ Not that ours aren’t special needs, but for the struggling ones. The resources are in your own head. You don’t need any particular piece of equipment or particular book or particular black line master to help you cater for gifted students. And again I think that just comes down to lack of knowledge.

Lee (GES1) thought that the most useful ‘resources’ were the students themselves – their knowledge and interests, explaining a student-centred approach to creating challenging activities for gifted students. In Kate’s opinion (GES3), the most valuable resource was actually the teacher themselves:

So their resource is them. The resource is the teacher. And my argument would be if you spent fifteen minutes with the gifted learners and teach them how to do things themselves, so if you spend the most valuable resource you have, which is you, with those kids, then you make a difference.

Key Findings

- The focus group teachers in this research did not appear to be concerned about lack of resources.

- The GES suggested teachers' concerns about lack of resources may be more appropriately attributed to a lack of knowledge about giftedness, the types of resources needed, and appropriate strategies.

5.3.1 Summary

While the teacher respondents to the questionnaire raised access to resources as an issue, the teachers involved in the focus groups did not appear to find this a significant issue. The comments from gifted specialists interviewed in this research suggested the issue to be a lack of knowledge about gifted education and strategies rather than a lack of material resources. They felt that teachers needed greater knowledge about characteristics of gifted learners, knowledge of appropriate provision/strategies and opportunity to share knowledge with peers through networking and discussion with professional colleagues.

5.4 Issue Three: Catering for a Wide Range of Students

Thirty-three percent of respondents to the questionnaire reported the range of students in their class as an issue in catering for their gifted students. Three main themes emerged from analysis of these open responses:

- Difficulties catering for the range of learning abilities in regular classes;
- A perceived priority for learning support needs; and
- Inclusion of students with other special needs

Each of these themes was strongly represented in the focus group teachers' comments. The teachers discussed their issues with the range of abilities they were required to cater for in a regular classroom, particularly in relation to the expectation of assisting struggling students. The GES' comments indicated that the teachers they

worked with also found these issues significant, however they related the teachers' concerns to other issues. In both focus groups, the discussion of difficulties in catering for the range of abilities was often combined with the issue of inclusion of students with other special needs in regular classes. These are therefore combined in the discussion below, which is organised in two sections:

- Range of student learning abilities / inclusion
- Priority for learning support needs

5.4.1 Range of Student Learning Abilities/Inclusion

Three themes emerged from the qualitative data regarding range of learning abilities:

- Teachers' views that catering for a range of students was difficult;
- GES views of catering for the range of students as 'different rather than extra' work; and
- Potentially successful options for catering for a range of students.

5.4.1.1 Teachers View Range of Students as Difficult

The wide-ranging needs of students in regular classes generated discussion in both focus groups. Teachers' comments focused on the wide range of students' abilities and needs creating an increased workload for teachers, and the impact on teachers' ability to cater for their gifted students. The comments of Sandra (T6), Rachel (T8) and Jenny (T10) in particular expressed a sense of being overwhelmed by having to cater for the diversity of students in their classes, both in terms of learning ability and other special needs. For example, Jenny explained trying to cater for the various groups as a "balancing act" while Rachel said thinking about catering for the range of abilities in her class left her "feeling guilty" about not being

able to provide what she thought her more capable students needed. Sandra's comment below about the different learning groups in her class exemplifies the self-doubts expressed by teachers about whether they're catering for each of the groups in their classes:

There's that state of limbo of 'am I really doing enough for them?' and 'am I really doing enough for them?', and then 'I've got all these other kids in the middle', and it's like woowwww . . . and it's really this thing of all the different groups, and it's like, the gifted and talented, not another group I've got to think about.

These teachers' comments indicated that while they felt accountable to provide for the needs of various groups of learners in their classes, they also felt it was difficult to cope with the expectation of providing appropriate tasks for the wide variety of student abilities and needs in their classes.

Again, each of the five GES agreed that the teachers they worked with in regular classes expressed concerns with this issue. For example, Kate (GES3) found that the most common concern teachers approached her about was how to create time to deal with the range of academic abilities and special needs in their regular classes, with questions such as:

So how do I teach or give my attention and time to the gifted children as well as all the other children? The children with disabilities, the children with learning difficulties, all the children in-between, the child with behaviour issues, etc.? And of course all those things overlap.

She suggested that undergraduate teachers who were exposed to a diverse way of thinking about teaching and learning were better able to differentiate:

...There are a couple of universities, I think, who are doing a great job, or seem to be doing a better job, at giving teachers that mindset that ‘you’re going to have a diverse classroom’.

Key Findings

- Teachers may find it challenging to cater simultaneously for the wide range of student abilities and special needs present in their regular, heterogeneous classes.
- The GES acknowledged teachers’ concerns about range of students.

5.4.1.2 GES Views of ‘Different Rather than Extra’

Each of the GES however explained that planning for different levels in the one classroom involved thinking about curriculum differently rather than involving an increased workload or being an ‘extra’ expectation for teachers. For example, Lee (GES1) explained a mode of thinking about curriculum involving negotiation which would allow students to learn at different levels simultaneously within the one classroom:

The whole class doesn’t have to be doing the same thing. Once you’ve set a task, or once the students have negotiated the task, so you’ve gone through those strategies, you’ve brain-stormed, you’ve mind mapped, you’ve negotiated where you’re going, then the students work at the different levels. If you’ve got the slower achieving students, they are achieving at their level, you’ve got the main group and you’ve got

those higher ability students. It's negotiated so they know where they are going and you are the facilitator.

Jody (GES5) further explained this concept as a shift from a 'deficit model' to a 'value-adding model':

So if we can just think of it in a different way because just using those strategies, as I said, with the majority of your children, it will bring them all up. And it will pull the ones even at the lower end of the spectrum...they will still gain from being offered the use of those strategies.

Key Finding

- The GES viewed the challenge of catering for a range of students as thinking differently about curriculum and learning, rather than extra work for teachers.

5.4.1.3 Potentially Successful Options

One teacher in each focus group explained a strategy which they felt had successfully enabled them to cater for a variety of abilities in their regular classes. Adele (T9) described an interview task where students worked in pairs to create a fictitious interview with a celebrity, involving a high degree of student input in both the planning and completion of the task. Alice (T5) explained that her negotiated curriculum, based on technology and enterprise projects, enabled students in her class to work at different levels simultaneously and engaged the enthusiasm of her more able students, allowing her to work with lower achieving students. The common element in these approaches seems to be an element of negotiation/student choice about creation of the task and the way in which the student is expected to complete it.

Key Finding

- Curriculum which is flexible and negotiated with students may provide opportunity to cater for the range of students in regular classes.

5.4.2 Priority for Learning Support Needs

The focus group data strongly supported the questionnaire data in teachers' perceptions that they felt they were expected to cater for students who demonstrated learning difficulties in priority over other students. These teachers explained in particular that they felt an expectation that the needs of gifted students were a lower priority than those of students who were experiencing difficulties in basic skills, particularly literacy and numeracy, and that support time in the school was commonly given to these students in preference to gifted students. For example, Rachel (T8) and Jenny (T10) found that catering for their gifted/high ability students was made difficult by the high proportion of lower achieving students in their classes, together with a perceived expectation that they would attend to these children's needs in priority. Rachel explained that ten students in her class required a basic IEP, and a corresponding assumption that a larger proportion of her efforts should be given to assist these students' development. Adele (T9) further linked this concept to a widespread view that gifted students did not really need special provision: "I think it is perceived that the gifted kids are alright. I've got to get these kids literate, I've got to get the non-readers reading."

Three of the GES (Helen, GES2; Kate, GES3; and Rose, GES4) also observed that teachers perceived a systemic/community expectation of the necessity of improving basic skills of lower achieving students over catering for gifted students. Kate's comment explains her view of teachers' concerns:

And because teachers do feel that their priority often should be... the child who is in year five and can't read yet, and so then they start to worry, how do they justify... I think they want the words too, to say to other parents, how do they justify to the rest of the school community why, "I'm spending time your child who's already doing very well, when I've got another child who's not". I think they tend to see it in that light sometimes.

Kate (GES3) also linked this issue with identification issues, explaining that she felt teachers were better trained to look for lower achieving students:

It absolutely comes back to the identification and not just how you identify but why you're identifying. And I think a lot of people don't know that. 'Why should we spend money on gifted kids?' 'Why should we spend time looking for that?' I think teachers generally are trained, I think, to look for the weak kids. The kids who are struggling. So they really don't understand why they should be looking for the kids at the other end. And not realising that that might be the very reason they're weak as well or not performing.

Key Findings

- Teachers may feel they are expected to give priority to students who demonstrate learning difficulties.
- Teachers are better able to identify learning difficulties in their students than giftedness.

5.4.3 Summary

The data here suggest that a significant proportion of these teachers found that their regular classes include a wide range of learning abilities, and that attempting to provide for this range causes them some difficulty. It seems that some teachers may feel overwhelmed by the responsibility of catering for this range, which then appears to have a negative impact on providing appropriate learning experiences for gifted students. It also appears that teachers feel they need to prioritise when faced with catering for a range of students. A significant proportion of teachers seem to feel that students who struggle to learn basic skills in literacy and numeracy need attention in priority to students who are already capable in these areas, or at least that they are expected to provide for students in that order of priority. It therefore appears justifiable that attempting to cater for gifted students is a task which can be given less attention. When difficulties in catering for a range of students is then coupled with a perceived expectation that students with learning difficulties should be catered for in priority, as suggested in the data, provision for gifted students becomes problematic for teachers. The GES however explained that catering for a variety of students required a different way of thinking about teaching and learning, rather than extra work for classroom teachers.

5.5 Issue Four: Teacher Knowledge

Teacher knowledge issues were reported as affecting their ability to cater for gifted students by a total of twenty-two percent of questionnaire respondents. Three themes related to teacher knowledge were identified from analysis of these open responses. These themes were also present in the focus group and interview data, and this section is accordingly organised via the three themes:

- Teacher knowledge about giftedness – including definition and characteristics (cognitive ability, social, work habits, behaviour, underachievement);
- Teacher knowledge about identification; and
- Teacher knowledge about provision – including teacher beliefs about/attitude towards provision, concerns about providing for gifted learners.

5.5.1 Teacher Knowledge about Giftedness

The comments from focus group teachers and GES explored teachers' understanding of characteristics of gifted students. These were categorised under five sub-themes:

- Definition of giftedness
- Cognitive ability
- Work habits
- Underachievement
- Behaviour

5.5.1.1 Definition of Giftedness

Only one of the focus group teachers mentioned definition of giftedness in the discussions. Tanya (T2) described professional development sessions at her school, for the purpose of defining giftedness in the school context, as “really quite an eye opener”. She explained that developing a shared understanding of what constituted giftedness had proved a difficult issue as teachers tried to explore differing opinions, understand concepts of giftedness/aptitude versus talent/practice, and come to a shared understanding. Tanya explained that she was surprised by the realisation that her colleagues held a range of understandings on what was meant by the term ‘gifted’.

This comment highlights that, even within one particular school, the teachers had varying views of what actually constitutes giftedness and how it was shown in a classroom situation.

Key Finding

- Teachers may hold varying definitions of giftedness.

5.5.1.2 Cognitive Ability

Comments by all focus group teachers showed awareness of this characteristic of gifted children and the resulting need for differentiated classroom provision. Their comments suggested that they observed advanced cognitive abilities in terms of thinking ability. Teachers saw gifted children as “alternative thinkers” or showing “greater development of ideas” (Cathy, T1), or as “thinking at a different level” (Karen, T4). Karen also observed gifted children's ability to think beyond adults in a class environment: “their mind is ticking over and off in other things and they think things you don’t think of.” Teachers also commented on gifted students’ capacity for learning in that they were usually “keen to pursue things in greater depth” (Christine, T3) or showed a “hunger for something more” (Rachel, T8). These comments indicate that the focus group teachers appeared to be aware of gifted students’ cognitive abilities differing from age peers. There is however a possible bias in the sample of focus group teachers, as compared to the broader population: teachers who chose to attend a focus group on gifted education were possibly already aware of some characteristics of giftedness.

The GES however expressed concern about their observations of classroom teachers’ understanding of gifted cognitive abilities, reflecting the quantitative data from the questionnaire. In their combined experience, the GES thought many teachers

didn't understand the different learning characteristics of gifted children and were not yet aware that, due to their cognitive abilities, gifted students were special needs learners or students at education risk (SAER). Rose (GES4) for example, commented on the need for teachers to become more aware of the learning and behavioural implications of gifted children's advanced cognitive abilities. She thought that teachers, as well as the wider community, still held restricted views of giftedness:

I don't think they understand gifted kids are a special needs group and that they do learn differently and that they do learn faster. And all of the aspects of the way they learn. Starting with the big picture and coming down rather than starting with the little things and building up. So . . . the difference in maturity because their cognitive age is greater than their chronological age. Accepting that a six year old can talk to you as an adult, and maybe that isn't being disrespectful. The stories I'm hearing, I think, are the teachers who are not prepared to allow kids blossom at the level they can achieve at.

Key Findings

- Focus group teachers' comments indicated an understanding of the advanced cognitive abilities of gifted students.
- GES expressed concerns about teachers' understanding of gifted students' cognitive abilities.

5.5.1.3 Work Habits

Three sets of ideas emerged from analysis of the comments in the qualitative data about gifted students' application to work in regular classes. These involved the relationship between work habits and:

- Cognitive ability
- Interests
- Preference for working individually/social relationships in regular class

Comments by both focus group teachers and gifted education specialists showed a perceived negative relationship between work habits and cognitive ability for some gifted learners, typically: “I sometimes find that the PEAC children are not the ones necessarily with the best work habits” (Cathy, T1) or that their work habits contrasted with their thinking level and hunger for learning (Karen, T4). Cathy noted an occasion where this relationship extended to a conflict with identification:

One thing I had difficulty with a few years ago with a year six boy... Orally he was so gifted and he was really gifted in the science area and in technology, computers and all that but he would never write anything down. He went to PEAC courses and the PEAC teacher used to come and speak to us and say ‘I don’t know what he’s doing with us and how he was diagnosed’.

An understanding of the relationship between gifted students’ interests and achievement was indicated in statements by five of the focus group teachers. Their comments indicated that they found gifted students’ work habits depended heavily on student interest in the given task, for example: “They tend to finish very quickly the work that they’re really interested in and more grudgingly the subject areas they’re not so interested in” (Cathy, T1). The data suggests that these teachers may be aware of a link between gifted students’ interest in a task and the display of achievement. For Lee (GES1), a critical element of teachers catering for gifted learners was recognising the importance of the students’ interests: “nurturing and fostering the

things that that student is interested in.”

An observation of gifted students’ work habits and social preference was given by four focus group teachers, who noted gifted students’ preference for working individually rather than in partnerships or collaborative groups in the regular class. Karen (T4) for example observed:

I did find that, rather than working in the classroom, they were more comfortable with an idea that was given, whatever the project was, whatever the problem might have been, given to them and then going away and doing the project on it and coming back to finish it.

Jody (GES5) discussed the lack of social contact and isolation which can occur for gifted students in regular classes. She thought that one of the main advantages of gifted children attending PEAC classes was that:

The children get to meet with each other. They have the social contact and that is really, really important for a lot of them. And some of them, it’s the only contact that they get where they don’t feel isolated.

Key Findings

- Focus group teachers perceived a negative relationship between work habits and cognitive ability.
- Focus group teachers perceived a dependent relationship between interests and work habits.
- Focus group teachers observed that some gifted students may prefer to work by themselves rather than with a group in their regular class.

5.5.1.4 Underachievement

Underachievement was mentioned briefly by two of the teachers in the focus group discussions. These comments expressed concern about whether they were actually extending gifted children enough in their classes, or whether children were actually working to capacity. The data from the teacher participants in this research suggests that the focus group teachers did not find underachievement of gifted students a significant issue.

In contrast however, the gifted education specialists' comments indicated that they perceived underachievement as an important issue for gifted learners. They each thought that school personnel (teachers and administrators) lacked understanding of underachievement issues, and were consequently susceptible to making erroneous decisions on identification and provision. All five made strong comments indicating their concerns about the prevalence and lack of awareness of underachievement in three main themes:

- Beliefs of education professionals (teachers and administrators) that giftedness displayed as high achievement;
- That this belief led to a conflict with identification;
- A resulting perception that specialised provision for gifted students was unnecessary.

Stereotypical views of gifted students as high achievers, held by teachers and school administrators, were of concern to the GES. Each of them contrasted teachers' expectations that gifted learners would automatically display a high level of achievement and productivity, with their own experience that gifted learners often underachieve in a regular class situation; for example, Jody (GES5) explained her

observation that many teachers believed giftedness presented as precocious achievement: “some four year old who can play piano concertos”. Rose (GES4) and Lee (GES1) specifically described norming behaviour, where a gifted child deliberately or unconsciously performs below their ability to blend in with age/class peers. Rose asserted that she had seen even very young children who would: “sometimes not show the teacher they can do it, because they keep wanting to fit in”, and described the efforts of a gifted boy in her school, who went to great effort to make sure that he didn’t stand out from the rest of the students: “making sure he’s never the best. He’s second, third, fourth, just never the best. And that takes enormous management to be able to do that.” Lee found that her experience matched what she had read in the research literature on norming behaviour and underachievement:

They might have one of them in the class and that one dumbs down very quickly, even in year one, you know. The statistics are terrifying, that they stop reading. They see themselves as different from the other kids, and so they do their best to fit in.

The GES were therefore concerned that many teachers were unaware of the underachievement of gifted students in their regular classes.

One of the focus group teachers (Adele, T9) noted a conflict with identification, describing her frustration in potentially “not knowing that your kids are gifted” because she had previously expected that giftedness would be shown in high achievement in her classroom: “a child hands in no work, you think that she’s not capable because you don’t see any evidence, and then the PEAC test says that she’s gifted!!”

The GES further explained a link between teachers' ideas on identification of gifted learners and this perception of high achievement. For example, Kate (GES3) and Jody (GES5) thought that this type of belief led many teachers to assuming that they didn't have any gifted children in their classes whereas statistically there would be at least two to three gifted students in most classes (according to the Gagné definition used in Western Australia – 10% of students). Referring to PEAC selection, Helen (GES2) found that for many regular class teachers, eligibility for extension programs was often linked to high achievement and productivity in the regular class: "it still is an issue of 'he doesn't deserve this, I haven't seen this kid producing in class for me'. So there's still a great issue with underachieving gifted kids." Kate (GES3) claimed the information she presented during the sessions enabled them to challenge their beliefs and expand their understanding of giftedness and identification issues:

And then when you start to do that training about what a gifted child could look like and those myths about what is a gifted child, suddenly you see teachers, and Principals, around the room going, 'Oohh, that kid that I've . . . been putting in a different box. I think I need to think about that child differently.' So I think it's those misunderstandings.

Four of the GES explicitly linked ideas about achievement of gifted students with the perception of school professionals that specialised provision for gifted students was unnecessary. For example, Jody (GES5) argued against the common assumption that gifted students didn't require specific teaching: "because you still need to teach them. There's this assumption that because they're gifted they can just do it" and Kate (GES3) explained that she found that both teachers and school

administrators often came to her professional development sessions with similar stereotypical views of giftedness. “I think a lot of the principals have the misunderstanding that gifted kids will do well anyway, so why do we need it [provision]?”

Key Findings

- Teachers may use high achievement as a criterion to identify gifted students.
- Teachers and school administrators may expect that gifted students self-identify by high achievement in regular classes.
- Some teachers may be unaware of underachievement in their regular classes.
- Teachers and school administrators may view that specialised provision for high achievers is not necessary.

5.5.1.5 Behaviour of Students Identified as Gifted

In the qualitative data, both focus group teachers and gifted education specialists noted behavioural issues for gifted learners in regular classes, which were often linked to underachievement. Karen (T4) for example described a gifted boy in her class whom she thought “tended to feel and perhaps believe that because he was bright he didn’t have to do the normal drill things that other people do, which is sometimes an attitude thing.”

Alice’s (T5) comments suggested awareness of a link between challenge in learning activities and student behaviour. She had found that her negotiated program and higher learning expectations of her gifted students had a positive impact on their behaviour, which she thought had a flow-on effect of increased achievement of students of all levels and allowed her time to work with various student ability groups.

This year I've found that I've been concentrating really strongly at the upper end of the scope, and I've found that it's dragged those ones that are down there, up, . the kids who are struggling. I do have time to get with them because the other kids are just so eager to get on. There's no behavioural issues. I've definitely found that I've put the expectations a lot higher than what some of them may ever get, but they've surprised me, term after term.

Two of the gifted education specialists expressed concern with teachers' understanding of behavioural issues for gifted children. Helen (GES2) and Rose (GES4) were both concerned that teachers often didn't realise that behavioural issues for gifted learners may be caused by underachievement and or boredom/lack of interest in presented tasks. Helen commented on her experience of teachers' perceptions of identification and eligibility for extension programs being linked to appropriate behaviour : "And there's an issue with behaviour problems. 'Why is that kid going to PEAC? – he can't behave'." She felt that early identification and provision of challenging learning experiences would avoid the development of behavioural issues in gifted children. Rose (GES4) likewise saw that many teachers could perceive gifted behaviours as problematic. She commented on a general need for awareness of the learning and behavioural implications of gifted children's advanced cognitive abilities and felt it would be difficult to promote the necessity of provision for gifted students:

Because until people recognise these aren't naughty kids, and they aren't just 'up themselves', and that they haven't had pushy parents

making them learn to read at three. That they have actually done it because they're curious and interested and capable.

Key Finding

- Regular class teachers may not be aware of the behavioural effects of gifted student underachievement.

5.5.2 Teacher Knowledge about Identification

One of the most commonly raised issues in the focus group discussions was the identification of gifted students. The GES also expressed strong views on this topic. Five themes were identified in the data:

- Methods of identifying gifted students
- Concerns about teachers' ability to identify gifted students
- Dual exceptionality
- Early identification
- Gender and identification

5.5.2.1 Methods of Identifying Gifted Students

Comments made by teachers in the focus groups about identification procedures revealed a variety of strategies used amongst their schools. Two teachers stated that their schools used forms of standardised testing (Christine (T3), Alice (T5)), while three other teachers stated that their schools used no formalised testing system (Tanya (T2), Karen (T4), Lyn (T7)). Christine (T3) and Alice (T5) explained that the testing in their schools was usually for the purpose of identifying students for a pull-out extension program rather than for activities or programs in the regular classroom.

Key Findings

- Methods used to identify gifted students vary widely between schools.
- Identification methods may be used for the purpose of providing students with out of class extension rather than differentiation within the regular class.

5.5.2.2 Concerns about Teachers' Ability to Identify Gifted Students

Comments made by these teachers expressed concern at their own level of ability and knowledge about identifying gifted students, for example:

And whether or not they're gifted and talented I'm not sure, but they're highly intelligent. I don't know whether we have the right resources or the right experience or whatever to pick out the gifted and talented children (Alice, T5).

All other teachers present nodded and/or expressed verbal agreement with these types of statements, and no teacher put forward a contrary point of view. Throughout the discussions, the teachers often expressed comments such as the difficulty of having to rely on "what I presume to be gifted" (Tanya, T2), indicating a possible lack of confidence in identifying gifted students. Alice's comments above were particularly significant as, during the focus group discussions, she identified herself as a former PEAC student – i.e. as gifted herself. Her remarks in other parts of the discussion also showed her to be highly aware of the characteristics and needs of gifted learners and that she used appropriate methods in her classroom, yet she was still doubtful of her ability to identify gifted students.

Both the focus group teachers who were gifted coordinators (GEC) in their schools (Sandra (T6), Lyn (T7), Rachel (T8), Adele (T9)) and the gifted education

specialists expressed concern that regular class teachers struggled with accurate identification of gifted students. Their comments indicated that they had all found regular class teachers lacked understanding of giftedness and the effects of this on identifying gifted children. Lee (GES1) stated that her experience matched research literature on norming behaviour and identification, noting that gifted students: “dumb down very quickly, even in year one. The statistics are terrifying. . . , that they stop reading. They see themselves as different from the other kids and so they do their best to fit in”, continuing with: “teachers are notorious at not being able to identify gifted kids because the kids blend in so well.” Helen (GES2) described the relationship found by a PEAC co-ordinator (in another district) between teachers’ nominations of gifted students and the testing for the gifted program:

She asked teachers to predict who would be the PEAC students in their year 4 classes before she would return the results to them, of their PEAC testing, and there was virtually no correlation.

All five of the gifted education specialists nominated teacher ability in identifying gifted students as an important issue and explained this issue further, commenting that teachers’ ability to identify gifted students was often compromised by misinformation and lack of knowledge about characteristics of gifted children, for example:

Because their whole knowledge is based on general knowledge of the general public. They have no more knowledge than the general public. So they might be fantastic teachers and be doing all this great stuff, but as far as gifted children are concerned, they [the teachers] haven’t been

offered anything else than anybody else in the general public (Jody, GES5).

Four of the GES also indicated teachers' ability to identify gifted learners was often affected by commonly held erroneous beliefs about giftedness such as the perceived link to high achievement. From their experience in working with regular class teachers, the GES had found that most teachers expected gifted students would self-identify through high achievement in regular classes, on regular curriculum. Their comments indicated that in their opinions, this was most often not the case. They felt that this left teachers susceptible to making inaccurate assumptions about identification, often basing this on stereotypical high achievement or precocious display of ability:

Another one is that unconscious, unknowing. That just not even realising that it's not happening. Not even realising that they have gifted children in their class. 'Oh no, they're not gifted. Gifted is a child prodigy' So they think 'OK, so I've never had a gifted kid' (Jody, GES5).

Analysis of focus group participants' comments therefore revealed a strong theme of doubt about their personal ability to identify gifted students. These teachers, in their own words, were clearly not sure about what they should be looking for in identifying gifted students. This was supported by the GES and GEC observations of class teachers: analysis of their comments regarding identification also revealed strong concerns about teachers' ability to identify gifted students, which they commonly linked to teacher knowledge. Given that all of the focus group teachers,

GEC and GES referred to identification in this manner, this is taken to be a significant issue.

The reasons for identifying gifted students was an issue raised by Kate (GES3), commenting that teachers often didn't know not only how they should identify gifted learners but why they should identify them. She thought teachers were trained to look for children who were struggling academically, but didn't understand underachievement issues for gifted students and therefore the need to actively look for potentially gifted children:

It absolutely comes back to the identification and not just how you identify but why you're identifying. And I think a lot of people don't know that. 'Why should we spend money on gifted kids?', 'Why should we spend time looking for that?' I think teachers generally are trained to look for the weak kids. The kids who are struggling. So they really don't understand why they should be looking for the kids at the other end. And not realising that that might be the very reason they're weak as well or not performing.

Key Findings

- Some teachers are concerned about their ability to identify gifted students.
- The GES and GEC felt that many teachers' ability to identify gifted students was negatively affected by a lack of understanding of gifted characteristics.
- Teachers' ability to identify gifted students may be negatively affected by a lack of understanding of gifted characteristics.
- Teachers may not be aware of norming behaviour in identifying gifted students.

5.5.2.3 Dual Exceptionality

Dual exceptionality refers to students who are both gifted and have another exceptionality such as a disability or specific learning difficulty. These students are often difficult to identify: their giftedness is often masked by their other exceptionality/ies, thus their gifted abilities are frequently not apparent in the regular classroom setting. Alice (T5) was the only focus group teacher who discussed dual exceptionality issues. She had found that some students in her class, who she thought were gifted, did not appear as gifted through their classroom achievements, particularly in writing:

An issue that I've found in our class is that some kids that I define as gifted, they might not be, but I think that are quite out there, like you were saying, with that boy not wanting to write... I mean I've got a couple of kids in my class that, give them a pen and if anyone was to read it, they would say, 'You've got to be kidding, this kid is special needs, not gifted'.

Her comments showed recognition of the impact of dual exceptionality on identification, and indicates her concern in justifying their identification as gifted to others. In their interviews, Kate (GES3) and Jody (GES5) both asserted that identification of these twice-exceptional gifted learners was a significant issue. Both had found teachers' understanding of dual exceptionality and how it affects identification, was related to stereotypical conceptions of giftedness and little teacher education, as exemplified by Jody's (GES5) comment that teachers "who are not trained in any way in gifted students can miss up to 50% of their gifted students."

Key Finding

- Teachers may have difficulty in identifying twice-exceptional learners.

5.5.2.4 Early Identification

Both Lee (GES1) and Helen (GES2) raised early identification as an issue in relation to underachievement. Following from her comments linking provision to identification, Helen found that gifted students weren't being identified early in their school career and that this led to a cycle of underachievement and further identification issues. She saw that early identification was an important issue in preventing underachievement: "That's what I was saying with the early identification - if we can get them identified earlier, and get the programmes working earlier, we may avoid that" (underachievement).

Key Finding

- Early identification of gifted students may prevent underachievement.

5.5.2.5 Gender and Identification

Gender issues in identification were not discussed in the focus groups and only mentioned by one of the GES. Lee's remarks indicated an observation that gifted boys were not being identified or catered for in regular classes and that this created a cycle of underachievement.

Key Finding

- Gender issues in identification were not shown to be significant in this research.

5.5.3 Teacher Knowledge about Provision

This section discusses the data relating to:

- Concerns about providing challenge for gifted students
- Teachers' beliefs about need for provision

5.5.3.1 Concerns about Providing Challenge for Gifted Learners

In response to the open question asking respondents to identify issues (Q37), gifted learners' need for challenge was reported as an issue by only 6% of all respondents. In contrast, all ten focus group participants acknowledged gifted students' need for challenge, as exemplified by Karen's (T4) comment: "these children would show signs that that they are thinking at a different level. Perhaps not their work habits but certainly their hunger for something more". Comments from focus group teachers commonly expressed concern about whether they were meeting this need. For example:

I would probably fall under the category of being really reflective and wondering if I'm really doing enough for the kids and not knowing... how to go about... I would not know how to go about really extending them. Even though I do lots of activities, how do I know I'm *really* meeting their needs? (Jenny, T10)

All five of the GES expressed concern about the level of challenge for gifted students in regular classes. Lee (GES1), for example, was concerned about the appropriateness of extension activities given to gifted children:

I hope it doesn't still happen but I suspect it does, they think they give them more work rather than higher level work. Giving them more

worksheets or something like that rather than looking at different ways of providing for them.

According to Jody (GES5), many gifted students had expressed to her the idea that they weren't challenged in their regular school classes; that "quite a fair proportion" used PEAC "as an escape from school, their escape from mundane and boring schoolwork." Helen (GES2) linked classroom extension for gifted students with teachers' level of training in higher order thinking (H.O.T.) strategies, explaining that she felt that there was still a problem with regular class teachers' 'toolkit', as her experience was that many teachers were not able to differentiate between questions that really challenged gifted students from those that just extend without really challenging.

Key Findings

- Focus group teachers and GES acknowledged gifted students' need for challenge.
- Focus group teachers expressed concerns about their own ability to provide challenge for or extend gifted students.
- GES concern about level of challenge for gifted students in regular classes.
- Some teachers may perceive that gifted students don't need specialised provision.

5.5.3.2 Teacher Beliefs about Need for Provision

Both focus group teachers (Sandra, T6, Adele, T9; Jenny, T10) and gifted education specialists (Lee, GES1; Rose, GES4; Jody, GES5) noted a widespread view of teachers/ colleagues that that gifted children didn't need special provision:

The accepted way of supporting highly able kids is to say ‘get on with it. You can do it, so you’re just lucky. Go and do it’. No direction, no challenge, no support, no understanding of the frustration (Rose).

Rachel (T8), who was the TAGS (Gifted) co-ordinator for her school, found that many of the teachers in her school felt they were already catering for their gifted students. At the end of each year she asked staff to provide information via survey about the school’s gifted program, finding that many of the teachers responded that they felt were catering for gifted children in their classes as they used open-ended tasks. Lee (GES1) had found that many teachers thought attending PEAC classes for one half-day per week would be sufficient provision for their gifted students. Jody (GES5) also found that many teachers thought they were already catering for gifted students, and didn’t see the need for professional development or assistance in the area:

It’s a variety. The ones that don’t seem to think they’re doing a terrific job are actually the ones who are doing the best jobs. And the ones that think that they don’t need to or they don’t need to know anything are the ones that aren’t doing much at all, in my experience. So the ones that are self-reflective and . . . ‘I need to be doing more? What can I be doing more?’ and they ask us to come in . . . they’re already doing a lot of stuff because they’re reflective teachers. They just want to do it better.

These comments appear to indicate that some regular class teachers may perceive that giftedness/ability will automatically translate into talent/ achievement in a regular class environment.

Key Finding

- Some teachers may perceive that gifted students don't need specialised provision.

5.6 Issue Five: Teacher Professional Development in Gifted Education

This section discusses the focus group and interview data on both pre-service and post-graduate teacher education, revealed in four themes:

- Lack of gifted education in pre-service courses
- Regular class vs. special needs teaching
- Lower priority for in-service professional development
- Professional development strategies which were thought to be successful

5.6.1 Lack of Gifted Education in Pre-Service Courses

The qualitative data in this research suggests that pre-service teacher education courses do not include sufficient information about teaching gifted students. Only one focus group teacher mentioned pre-service education, revealing a lack of gifted education within her undergraduate course. Adele (T9) related that during her four year pre-service degree in special education, she had received only one lecture on teaching gifted students, while the rest of the course focused on students with learning support needs. All the gifted education specialists expressed strong concerns over the level of gifted education offered in pre-service teacher education courses. For example, Kate's (GES3) experience in assisting classroom teachers to understand and provide for their gifted students, was the teachers' undergraduate courses had been "woefully lacking in gifted education". Investigation of university teacher education courses had led Jody (GES5) to form the opinion that gifted education for pre-service

teachers was “non-existent”. Rose (GES4) and Helen (GES2) commented on the need for increased pre-service content in gifted education for primary teachers: “so that there is a unit there somewhere, that allows teachers how to learn how to cater for these kids” (Helen). Jody (GES5) and Lee (GES1) both mentioned the 2001 Australian Senate review of gifted education, concerned that it was “extremely critical of teacher training” (Lee). Referring back to include the 1988 Senate Review (Senate Select Committee, 1988), Jody commented that there had been no change in inclusion of gifted education in undergraduate courses even though it had been recommended in both reviews:

For 22 years the Senate enquiry has said this is what is needed, that undergraduate teachers need to be trained, that it needs to be a full time unit. And 22 years they’ve been saying it. And 22 years nothing has happened.

Concerns about the means by which undergraduate teachers obtained information about gifted education were expressed by two of the GES. Both Lee (GES1) and Helen (GES2) stated that they were often contacted by undergraduate teacher education students, asking for information about teaching gifted students for their special needs units. These students were often requesting information to present to other students in a seminar group. The GES expressed concern that the small amount of information on gifted education that pre-service teachers were gaining was from fellow undergraduates rather than experienced teachers of gifted students. After receiving frequent requests for information from undergraduate students, Lee attempted to address the situation she saw in pre-service teacher education courses. She stated she had twice approached two local universities which provided

undergraduate teacher education courses, offering to give presentations to pre-service teachers on gifted education, including practical strategies on teaching gifted students, however neither university had responded to her offer.

Jody (GES5) described a recent initiative in a pre-service course at a local university where Graduate Diploma students were given an expanded three hour seminar class on gifted education. This had been running for the past two years. She thought that this was a positive development from the previous one hour session, but as it wasn't yet a full unit, it was still not enough to provide teachers with the information they needed.

Kate (GES3) was also concerned that the small amount of information gained by pre-service teachers may actually be a disadvantage rather than a benefit. Stating that her observations agreed with existing research, her comments indicate that she thought that the pre-service education currently available was not adequate to provide teachers with the information to cater for their gifted students. She had found that many teachers assumed that, as they had attended the one available lecture on gifted education offered in their pre-service course, they knew how to cater for their gifted students:

I do sometimes hear teachers say, 'Oh yeah, I did a unit on gifted education.', and sometimes I think that can be worse, because they sort of think then that they know about gifted when perhaps they don't, because they only get maybe one lecture on gifted. What's that saying?, "A little knowledge can be dangerous", 'cause then they say 'Yeah, I know all about gifted. I did the lecture at uni.'.

Key Finding

- Teachers may not have access to adequate information about understanding and providing for gifted students in their pre-service course.

5.6.2 Regular Class vs. Special Needs Teaching

The theme of ‘regular class vs. special needs teaching’ arose in Kate’s comments about the views created by teacher pre-service courses. With regard to pre-service teachers’ perceptions of regular classes, Kate (GES3) expressed the view that pre-service teachers needed to develop the understanding that all classrooms are diverse, and that catering for a diverse range was ‘different rather than extra’ work. She found it frustrating that many of the teachers she worked with held a mindset that teaching a ‘regular class’ was distinct from teaching ‘special needs’ students (including gifted students). In Kate’s experience, teachers who held this traditional concept of a ‘regular class’ lacked the skills to deal with diverse learning needs. Conversely, she found that teachers who came to the profession with a concept of a diverse class, rather than a regular homogeneous class, were more open to learning about how to address the needs of various students, and were thus more able to think about catering for gifted students as a different way of teaching rather than extra work. She thought that university courses should help teachers to develop the concept of diversity within regular classes.

Kate (GES3) also contended that the means by which information on gifted education was presented in pre-service courses was a related issue, which created and/or reinforced the perception of regular class vs. special needs teaching. She had observed that information about gifted learners and their educational needs was often taught only within special needs units, and felt that this situation encouraged teachers

to see catering for gifted students as an additional responsibility rather than an integral part of their regular work:

It also makes teachers think that it's an extra. Not a normal part of regular class teaching. Like there's teaching a 'normal' class and then catering for the gifted kid and the disability child, and the autistic child, and the child with behaviour difficulties. And they're all separate things rather than just a part of normal everyday teaching.

Four of the five gifted education specialists (Lee, GES1; Kate, GES3; Rose, GES4; and Jody, GES5) expressed their opinion that more experienced teachers had greater difficulty in making the adjustments necessary to cater for gifted children. Their comments indicate that initial teacher education courses for these teachers may not have included information about teaching diverse learners (including gifted students), nor expectations of differentiation in regular classes. The GES were concerned that these teachers had not developed skills in differentiating curriculum, as Lee (GES1) commented:

It's also that we have a lot of older teachers who are finding it difficult to take on change and take on the different teaching styles that they need to work with the outcomes based learning and curriculum frameworks.

In contrast, Kate (GES3) described a new graduate she had worked with, who coped easily with differentiation. This teacher explained to Kate that she had been taught to create differentiated programs in her under-graduate course. Her comment is

significant in revealing that, the inclusion of teaching for diversity in pre-service course enabled this teacher to cater for gifted students early in her career.

Key Findings

- Teachers' perceptions of a 'regular class' may contribute to views of teaching gifted students as 'extra' work for the teacher.
- The delivery of gifted education in special needs units within pre-service courses may contribute to or reinforce views that teaching gifted students in the regular class is extra work for the teacher.
- More experienced teachers may not have had access to gifted education or teaching for diversity in their undergraduate course.

5.6.3 Lower Priority for In-Service Professional Development

Two of the GES commented on in-service opportunities for teachers in gifted education. Lee (GES1) explained her frustration in attempting to provide professional development on gifted education for teachers in her district:

I run professional developments sessions and I don't get a huge response rate, in fact I get an appallingly low response rate. In fact, I cancelled a PD last Friday because I only had one response from seventy-five schools across the district.

Rose (GES4) conceptualised a link between teachers' professional development and a focus in schools on learning support needs. She thought that teachers received extensive professional learning to support children with literacy and basic needs but there hadn't yet been similar attention paid to professional development for teachers in gifted education.

Key Finding

- Professional development in gifted education may not be a priority for practising teachers.

5.6.4 Professional Development Strategies Suggested as Successful

All five of the GES had been involved in delivering gifted education professional development, and each identified strategies which they had found successful for teachers in developing their knowledge about giftedness and supporting gifted students. In addition, two focus group teachers described professional development strategies which they thought were valuable in improving their ability to support gifted students. Similarities between strategies enabled them to be categorised into three types, each discussed in the sections below:

- Access to information about teaching gifted students
- Collaboration or networking with professional colleagues; and
- Practical or in-class experience

5.6.4.1 Access to Information about Teaching Gifted Students

One type of professional development described by research participants involved access to information about giftedness and providing for gifted students' learning in regular classrooms. One focus group teacher and four of the GES discussed professional development strategies which involved providing practicing teachers with access to accurate information about gifted learners and their needs as successful in increasing teacher knowledge. These included specific sessions on strategies such as thinking skills or the characteristics of gifted learners, the use of the

DEST modules, application of gifted education models or even online delivery of information based professional development.

Sandra (T6), Helen (GES2) and Jody (GES5) found that professional development specifically on the use of higher order thinking strategies in regular classes was useful. Sandra described how a session involving all of the teachers in her school had been valuable in this regard. Relating this theme of a belief of 'extra' work, to the previous theme of teachers' knowledge of strategies, Jody referred to a professional development session on higher order thinking skills she had recently delivered for teachers with the intent of: "showing them how they can use those in their everyday teaching. Not something extra on top, but how they can use it to do what they're already doing, except do it better." Helen's observation was that this type of professional development encouraged teachers to use these strategies in their regular classes, enabling teachers to cater for their gifted students more successfully. Moreover, she thought it enabled previously un-identified gifted students to display their thinking abilities, allowing teachers to recognise that they were actually gifted.

Several of the GES also mentioned professional development which they thought had been successful in giving teachers access to information about gifted provision. Kate (GES3) described that differentiation had become a big focus in the professional development she delivered for teachers. She felt that this addressed the issue of 'different rather than extra':

Just being aware of 'What are the issues for this child?' as opposed to 'What are the issues for that child?' So it might not necessarily be the extra. It's about doing it efficiently, and doing it effectively, and making sure if you're preparing a piece of work, that it does cater for

all the kids in the class, rather than having to have 32 different pieces of work. So we do focus a lot on trying to answer that question for teachers.

In discussing teachers' knowledge of the characteristics of gifted students, Rose (GES4) referred to recent professional development for teachers at her school on personality types and how this affects the display of gifted behaviours. She thought this type of professional development assisted teachers to understand that gifted learners are not a homogeneous group, and display a wide range of personality characteristics. The teachers also learnt about how personality mediates demonstration of ability and achievement, and their role as a catalyst in developing gifted abilities: “How do you work with their personality to enable the giftedness to come out?” Jody (GES5) and Kate (GES3) both referred to the online DEST modules developed by GERRIC in 2004, which were designed to assist schools and teachers in understanding giftedness and catering for gifted learners. Kate thought the research basis of the modules enhanced credibility amongst teachers as they respected information based on real research. She had found that the modules were valuable in giving teachers a common language to discuss gifted education, both within schools and between different schools. She thought it also gave the teacher appointed as the gifted coordinator (whom she acknowledged may not have specific training in gifted education) accurate language and information to explain giftedness and associated issues to other personnel in their school. Jody had recently been using the Maker Model (1982) as a resource to assist teachers with gifted provision, and found that this gave teachers practical strategies to use with their classes, as well as increasing their confidence to differentiate curriculum. She also referred to a recent professional development initiative, still in the early stages, in which she was trying to establish an

online professional development for teachers. She thought that this could overcome difficulties of time, travel and expense for teachers.

5.6.4.2 Networking or Collaboration with Professional Colleagues

Networking or collaboration with professional colleagues was another type of professional development which research participants thought was successful in developing teachers' knowledge about catering for gifted students. The teachers in focus group two developed a conversation on the value of networking in assisting their provision for gifted students, as exemplified by Sandra's comment: "It would be great to hear what different programs people have in their own classroom." Sandra (T6) also stated that she found this research focus group meeting valuable in terms of networking:

Just in the first few minutes of here, when I heard about what everyone's been doing, wouldn't it be great to network with people all the time and hear what she's been doing and everything. You sort of think, 'Wouldn't it be great if we just had the time, not just to collaborate within our school but to collaborate across [schools]'.

Helen (GES2) thought that networking, allowing time to discuss issues and strategies with other teachers, was the main 'resource' that teachers needed to improve their provision for gifted students, enabling them to challenge their understanding of what worked and what was less successful. Kate (GES3) described the importance of networking, both within schools and between schools. Within any particular school, she thought that networking developed a 'critical mass' of teachers talking about gifted education in their situation while networking between schools gave some teachers who were perhaps a "lone voice" in their own school, an

opportunity to communicate ideas with colleagues in other schools.

Collaborative planning was a related strategy which arose in the discussion of focus group two. For example, Sandra (T6) described the value and difficulties of being able to share ideas and plan collaboratively with colleagues:

And to plan really good tasks. It's the planning and preparation of good, rich, multi-layered tasks that takes a little bit of time and, I mean we're supposed to be able to collaborate with our peers but... with all the paperwork and the running around, we don't often get the chance.

Comments indicated that teachers would find it beneficial to work in a team to share ideas and responsibility for planning activities for multiple groups/classes. Some of the teachers described various means of creating opportunities for teachers to have shared time for collaborative planning which had been used in their schools. In Adele's school (T9), the Principal conducted a Junior school assembly, while the teachers spent the time collaborating to plan curriculum/learning activities. In Lyn's school (T7), the timetable was altered to allow an early finish for students on one day of the week, so that teachers could use the time for collaborative planning.

Longer term collaboration was an issue raised by Jody (GES5), distinguishing between 'professional learning' and 'professional development'. From her experience, she explained that single information sessions on gifted education weren't particularly successful in helping teachers to develop skills in the classroom. She used the term 'professional learning' to describe ongoing learning over a longer period of time with teachers engaging in action research, collaborating with colleagues and/or being supported by a more experienced mentor. She thought that this type of learning for

teachers made a more significant difference in the classroom.

5.6.4.3 Practical or In-Class Experience

A third type of professional development involved practical or in-class experience with gifted students. Adele (T9) had found that observation in other teachers' classrooms was more constructive than traditional forms of professional development. She explained that her district manager encouraged and funded teachers to spend time in classrooms of successful teachers to view best practice: "And that is better PD than listening to a lecture or anything like that. . . so actually when this program is up and running, to have someone come and spend a day watching it and then taking it back to their school..."

Lee (GES1) and Rachel (T8) described a strategy of deliberately involving regular class teachers in delivering courses to classes of gifted students. Lee asked class teachers to deliver PEAC courses, while Rachel, the gifted co-ordinator in her school, encouraged colleagues to develop and deliver extension courses to gifted students as part of the school TAGS program. Both thought this was a successful strategy as it gave teachers 'hands-on' experience with a self-contained class of gifted learners: "It gives them a chance to work with a group of absolutely motivated and able students so they can experience that and know what that's like" (Rachel)

Their comments indicate that both of these participants thought this was a successful strategy in giving teachers 'hands-on' experience with gifted learners and provided these teachers with an opportunity to use the strategies they developed working with gifted students in their regular classes. Lee (GES1) noted a possible wider effect of this strategy, reasoning that the knowledge these teachers gained from

teaching self-contained classes of gifted children enabled them to dispel misunderstandings about giftedness.

Key Findings

- Professional development which involves access to information, collaboration with colleagues and/or practical work with gifted students may be successful in assisting teachers to understand and cater for their gifted students.
- Collaboration and support may need to extend over longer periods to be successful in assisting teachers to cater for their gifted students.

5.7 Other Issues

Six other issues were also identified in the focus group discussions and/or GES interviews:

- Support for teachers
- Class size (number of students)
- Classroom size (physical space)
- Behaviour of non-identified students
- Curriculum changes
- Teachers' personal connection to giftedness

5.7.1 Support for Teachers

Both focus group teachers and gifted education specialists expressed concern about the level of support provided for regular class teachers in catering for gifted students in their classes. Three focus group teachers discussed in-class support as assisting them in providing for gifted students. The current situation in Tanya's school was that class teachers were expected to provide for gifted learners within the regular

class program: “so it’s very much up to what we do in the classroom.” Sandra (T6) agreed that within the school system there didn’t seem to be a focus for administration support to class teachers in providing for gifted learners. In describing a project-based learning experience she had developed for her regular class, Adele (T9) thought that extra teaching support would have enabled further extension for her gifted students:

They were out going off to I.T., and they were going out (of the class). And that’s where the support would have been wonderful. To have a teacher take a group off to the lab, the tech lab, and be able to do something there, and a teacher work with the kids who are doing the drama aspect, and another teacher. It would have been great if we had the support.

The teachers’ comments suggested that they may feel isolated in attempting to cater for their gifted students in regular classes, or that perhaps that they feel they lack skills in specialist areas such as I.T. or drama.

For the GES, support for teachers in their school situation was a significant issue, with four of the GES expressing an opinion that class teachers needed support from the wider school system to cater for gifted students. They acknowledged challenges for teachers in this area and agreed that “a whole school approach” was essential to assist teachers in catering more effectively for their gifted learners, as exemplified by Lee’s (GES1) comment: “I don’t think teachers should be expected to cater for them in isolation. I think that’s where the whole school program needs to come in and support them.” Helen (GES2) explained the value of school/systemic support in generating positive value for teachers:

And the confidence thing. Some of them are doing the right thing and they just need a little bit of support to say, “Yes, you’re on the right track”. We don’t often support teachers out there who are doing the good things and help them along (Lee, GES1).

Key Findings

- Teachers may feel isolated in catering for gifted students in their regular class.
- Teachers expressed a need for increased in-class support to be able to cater for their gifted students.
- Teachers feel they need increased support from their school administration/school system to be able to cater more effectively for their gifted students.

5.7.2 Class Size (Number of Students)

Two focus group teachers (Cathy, T1 and Alice, T5) raised large class size as an issue for them personally in catering for their gifted students. Most others agreed with the direct question: ‘So you see class size as an issue in being able to cater for your gifted students?’. Cathy’s school had arranged their classes to have smaller numbers of students for the intended purpose of improving outcomes for all students. The school had chosen to forego a support teacher in favour of having smaller classes, finding that children: “tend to work better with the teacher they know than anyone else”. Alice stated that she felt having thirty-four children in her class created difficulties in catering for individual differences in her class. Kate (GES3) referred to large classes affecting provision for gifted students. Many of the teachers she worked with who had large numbers of students (30-32) in their classes, found it difficult to cater for individual needs. She observed they would commonly ask her questions such as: “How do I deal with 30 kids in a class?” The data suggests that some teachers may

find it more difficult to cater for individual learning differences with larger numbers of students in their classes, which may then have a negative impact on their ability to cater for gifted students.

Key Finding

- Some teachers indicated that the number of students in their class affects their ability to cater for individual differences between students.

5.7.3 Classroom Size (Physical Space)

The space available in regular classrooms was also indicated as an issue impacting teachers' ability to cater for gifted students. Two of the focus group teachers (Cathy, T1; Alice, T5) thought that physical space in their classroom made a difference to the types of activities they could offer students. Alice (T5) found that the combination of a large class and a small room was a concern to her:

Well, 34 kids in a classroom. I've got kids so close to the board that I can't pull the board around. They've got to duck for it and at the back they're only that far from the cupboards. Like it's like sardines. I think it's just badly designed.

Given that Alice described some very effective differentiation strategies used within her class, it was clear that, while she thought a lack of space made this difficult, she was however still able to cater for her gifted students. The GES did not mention physical space in classrooms. The teacher data appears to indicate that some teachers feel the amount of space available affects the type of learning experience they are able to provide for their (gifted) students. It appears that some teachers may

link provision of higher level tasks with the need for increased space in their classrooms.

Key Finding

- Some teachers may see a lack of physical space in their classroom as a negative factor in catering for their gifted students.

5.7.4 Behaviour of Non-Identified Students

The issue of students' behaviour also arose in the qualitative data. Two focus group teachers and one of the GES (Kate, GES3) discussed the impact of managing student behaviour on provision for gifted students. In the context of discussing difficulties of catering for various groups in regular classes, Jenny (T10) stated that several of her students required an Individual Behaviour Plan (IBP). As this required more of her time and attention, she thought that this made it difficult for her to cater for gifted students. Rachel (T8) found that spending time to adjust the learning activities for her students experiencing difficulties was necessary to reduce behavioural issues. She explained that this left her feeling guilty about what she was able to provide for her more able students.

Key Finding

- Some teachers find that dealing with behavioural issues in regular classes has an impact on their ability to cater for gifted students.

5.7.5 Curriculum Changes

In Western Australia, the School Curriculum and Standards Authority (SCSA) set the curriculum expectations for schools. During the early course of this research, there was much debate about the effectiveness of an Outcomes-Based Curriculum,

and moves to redevelop school curriculum with a more syllabus-based approach. More recently, a national curriculum, developed under the auspices of The Australian Curriculum, Assessment and Reporting Authority (ACARA), has been implemented in the schools. While teachers have a fair degree of control over how these are implemented, and the specific activities they choose to engage students, they are still required to demonstrate that the current SCSA requirements are being met.

Kate (GES3) and Rose (GES4) thought that teachers had faced a lot of curriculum changes in a short space of time, and that such changes caused stress for teachers and thus a negative impact on provision for gifted learners. Kate explained that as teachers realised that the new National Curriculum was set out by grade level, she often faced questions about catering for students' different leaning needs from concerned teachers such as: “ ‘Can I still differentiate, or will I just have to teach one year level?’ And of course the answer is, ‘Yes, you should still differentiate’, but teachers are really stressed about the changes.” Rose (GES4) found that the changes caused a loss of confidence for teachers as they questioned what they were doing, and tried to adapt to the new requirements. She thought that this had created “a perception of pressure” for teachers, particularly in focusing on individual students, as she felt the curriculum changes had been lacking in practical support. She found that effectively, “not much has changed” in schools in regards to new curriculum developments:

In which case there's been a lot of fuss and bother and a lot of anxiety and no gain. If that gain had been applied to learning about differentiation in the classroom and supporting students to learn different things within the same classroom. But it was really applied to a curriculum. And it's still asking the same stuff.

According to the data, it appears that there may not be appropriate support for teachers to implement curriculum changes.

Key Findings

- Teachers may find adjusting to new curriculum challenging, which has a negative impact on catering for gifted students.
- Teachers need greater support in understanding differentiation in relation to new curricula.

5.7.6 Teachers' Personal Connection to Giftedness

A surprising issue which arose in the focus group discussions and interviews, was that several of these teachers identified themselves, their children or family members as gifted. Three teachers (Sandra, T6; Rachel, T8; Adele, T9), and all five of the gifted education specialists, discussed how finding that their own children/family members were gifted and negotiating learning experiences for them, led to them developing a professional interest in gifted education. For example, Alice (T5) identified herself as a former PEAC student, preferring this to her regular classes: "I loved the PEAC programme. I hated the classroom, couldn't wait to get out", and Rachel commented on the effect on her professional understanding of discovering that her son was gifted:

So I guess that's where I started to get interested in it . . . and I've just attended the PD and really got involved and, . . . no special training but just had an interest because I thought these are kids that we need to be doing something about. And I thought of all the kids I that had in my

class, 'Ok I've got to be doing something for them because I know what my son's going through'.

For these teachers, personal experiences appeared to have created an awareness of the issues faced by gifted learners and a professional interest in learning how to cater for the gifted students in their classes. It was significant that of this sample, nine of fifteen participants identified themselves or family members as gifted (i.e. 60% - vastly more than the 10% in the Gagné definition), suggesting that personal ability or experiences could possibly be linked with an interest in understanding gifted learners. It is also therefore a probable bias in the sample – teachers who elected to attend a focus group discussion on giftedness, or teachers who chose to work as GES, were more likely to have a personal connection to giftedness.

Key Finding

- Teachers' personal connection to giftedness may create interest/ awareness of need.

5.8 Classroom Strategies Described as Successful for Gifted Students

The focus group teachers and GES discussed strategies they regarded as successful in simultaneously engaging students with a range of learning levels. While this research identified catering for a range of student abilities and behaviour as significant issues, the data also provided some information about practical ways of coping with these issues. Strong themes which emerged from the data included:

- Negotiated / student-centred learning
- Research / project-based learning
- Open-ended tasks

- Higher order thinking strategies
- Peer tutoring
- Curriculum compacting

5.8.1 Negotiated/Student-Centred Learning

Strategies involving an element of negotiation or student choice were identified as successful by just over a third of respondents to the questionnaire. Focus group participants and GES also discussed this strategy (similarly described as ‘student-centred’ learning. Eight focus group teachers discussed negotiated learning tasks which they thought used choice strategies to cater for their gifted students.

Karen (T4), for example, described a student-centered activity which allowed students to work at their own level, by setting their own goals in negotiation with the teacher. Sandra (T6) described a multi-modal language activity in which students worked in pairs to create fictitious interviews with celebrities, negotiating both the task and outcome criteria. Students were provided with a framework to script their interview and taught to ask in-depth questions. Sandra thought that the ‘choice’ factor made these activities intrinsically motivating to students. She noted that while this type of activity was valuable in catering for the variety of levels in her class, they were also time-consuming and created difficulties in teacher workload. A significant common element in these comments was the combination of choice in other strategies such as research and independent tasks.

Alice (T5) discussed a non-traditional approach to organising learning in her classroom. Describing her teaching strategy as ‘open-ended’, she explained how the learning tasks in her project-based-learning program were negotiated with students. Rather than having a set time-table and program in her class, the time allocation and

learning activities were designed in negotiation with her students, according to their interests and abilities. She gave several examples of negotiated planning and learning experiences, which were used for all students in her class. She had found that this 'open' structure (in contrast to open-ended tasks), and planning activities in negotiation with students allowed her to cater more effectively for her gifted students, as well as the various ability levels in her regular class: "everyone's doing their own things. They all have different tasks and different projects and different levels." When asked by another participant how her lower achieving students coped with her very open-ended curriculum structure, Alice's response was that she perceived the higher expectations and focus on higher levels of understanding had improved the results of all students. She also thought that negotiating activities which were intrinsically motivating to her more able or gifted students enabled them to stay on task, allowing her more time to work directly with students of all abilities rather than having to spend time dealing with off-task behaviours.

Four of the GES also discussed negotiated learning and goal setting strategies, with the comments suggesting they saw negotiated curriculum as a key strategy to cater for diverse abilities. Each explained that negotiating tasks with students allowed learners to work at different levels simultaneously and saw this type of curriculum organisation as readily manageable in a regular classroom, best exemplified by Lee's (GES1) comments.

The whole class doesn't have to be doing the same thing. Once you've set a task, or once the students have negotiated the task, so you've gone through those strategies, you've brain-stormed, you've mind mapped, you've negotiated where you're going, then the students work at the

different levels. If you've got the slower achieving students, they are achieving at their level, you've got the main group and you've got those higher ability students.

Helen's comments reflected the GES' views that negotiated learning was an essential part of catering for gifted learners, noting that some teachers had difficulty in doing this:

I think it depends on what their teaching style is. If they're not differentiating their curriculum, they are having a teacher focused program, it's very difficult to cater for gifted kids because as we know, to cater for them you have to give them a lot of leeway. You have to give them an opportunity to negotiate, and if teachers aren't in that mode of delivery, it is very difficult for them to change (GES2).

Lee (GES1) also stressed the importance of negotiated and student self-assessment, explaining that she felt that gifted students particularly were less interested in a teacher's opinion of their work and more concerned in how they had achieved according to self-perceived or negotiated criteria.

Key Findings

- Negotiated curriculum strategies involving choice / student input were suggested as successful in catering for gifted students by both focus group teachers and GES.
- The GES saw choice as an essential element in differentiation for gifted students.
- Choice strategies were often discussed in combination with other strategies.

5.8.2 Research/Project Based Learning

Four themes emerged from analysis of the comments in focus groups and GES interviews, regarding research or project-style learning strategies:

- Support for use of research as a strategy for gifted students in regular classes.
- Various research/project style activities were considered successful for gifted students.
- Elements of research tasks made it successful for use with gifted students.
- Concern about the level of research tasks undertaken by gifted students.

Comments from the focus group teachers and GES indicated support for the use of research strategies to cater for gifted students. While the focus group discussions did not specifically identify student research, project-based learning was a strong theme of discussion in both focus groups, with many of the project-based strategies suggested involving student research to develop the project. The teacher comments suggested that learning experiences which were based on in-depth, project-style activities were useful in their classrooms to cater for a variety of academic levels. Four of the five GES discussed use of research strategies with gifted students, also indicating support for use in regular classes.

Eight of the focus group teachers discussed a variety of specific activities in which they used research/project strategies to successfully cater for their gifted students in a regular class setting. These ranged from student interest projects, to further research on class topics, to investigation of information to present to other students. The teacher comments suggested that learning experiences which were based on in-depth, project-style activities were useful in their classrooms to cater for a variety of academic levels. For example, Adele (T9) and Sandra (T6) both described

project-based learning activities in which they felt their students were able to work at multiple levels simultaneously. Sandra described how her students worked in pairs to select and research a celebrity or famous person, presenting their learning in a dramatised interview. Within those parameters, students were able to negotiate elements of the tasks, and organise their time to create the required product. Both teachers thought that the students found these types of activities highly motivational and that they allowed children of all abilities to work at their own level. From a teaching perspective, these teachers also felt that this allowed them more time to work with each student.

The focus group teachers who discussed research as a successful strategy in their regular classrooms also commented on other elements combined with research. In particular comments often suggested that research tasks could be structured to allow for a variety of learning levels, thereby providing challenge for gifted students. Respondents' comments also suggested choice elements combined with a research strategy, such as: choice of topic (often within a theme or a guided range, eg famous people); choice of methods of investigation; and/or negotiation of differentiated products. Their comments indicate that they felt that these elements were what made the strategy successful for gifted students.

All four of the GES who discussed research strategies, expressed concerns that this strategy may not be used in a differentiated manner or at a high enough level to effectively cater for gifted learners. For example, Helen (GES2) explained that although she had seen many teachers use individual research as a strategy to cater for their gifted learners, the work tended to be at a low level:

There's a lot of just sending kids off to research but it's not a very high level thinking at all. It's still just regurgitation information and not thinking about what they do with it, or how they can apply it and evaluate it, or anything.

She further asserted that teachers who taught students to formulate their own questions at varying cognitive levels (using strategies such as Bloom's Taxonomy) were more successful in using research as a challenging strategy for gifted students.

Key Findings

- Focus group teachers and GES supported use of research/project based learning for gifted students in regular classes.
- Focus group teachers identified a variety of research/project based learning strategies as appropriate for gifted students in the regular class situation.
- Comments identifying research as a successful strategy for gifted students also indicated other elements such as challenge and choice.
- The GES expressed concerns about the low level of research tasks being required of gifted students.

5.8.3 Open-Ended Activities

Two sets of opinions emerged from the focus group data regarding use of open-ended activities, supporting and questioning use of this strategy. Two focus group teachers nominated open-ended activities as one of their favoured strategies to cater for gifted learners, after completion of set work in the regular class. Cathy (T1), for example, described how she gave open-ended activities to her gifted students: "So they're also ones that are often finish set work quickly, so I'll give them open-ended tasks". In contrast, Adele (T9, GEC) and Rachel (T8, GEC), were concerned that

teachers thought open-ended activities in themselves would sufficiently cater for gifted students. At the end of each year, Rachel (T8, GEC), as the TAGS (Gifted) coordinator for her school, asked staff to provide information via survey about the school's gifted program, finding that many of the teachers responded that they felt were catering for gifted children in their classes as they used open-ended tasks. These two GEC both distinguished between open-ended tasks and "rich" tasks, explaining that they felt that the open-ended activities they saw in classrooms were not at a high enough level to cater for gifted learners:

I think that some teachers think that PEAC is not so important anymore 'because we're giving open-ended activities'. It's like open-ended tasks are now the answer to everything, but their open-ended tasks aren't really . . . they're not rich tasks (Adele, T9).

These opinions reveal possible variability in the level of challenge in open-ended activities presented to gifted students. None of the GES suggested open-ended activities when asked about strategies to cater for gifted students.

Key Findings

- Open-ended tasks were suggested as useful to provide for gifted students in the focus group discussions.
- GEC comments suggest that open-ended activities may not be sufficiently differentiated for gifted students.

5.8.4 Thinking Skills Strategies

Thinking skills strategies were discussed in both focus groups, and by the GES with three themes identified in the data:

- Support for use;
- Low frequency of use; and
- Concerns about use of thinking skills.

5.8.4.1 Support for Use with Gifted Students in Regular Classes

Strategies involving thinking skills were discussed in both of the focus groups and by the gifted education specialists, with some specific reference to Bloom's Taxonomy (1953, 2002). In the focus group discussions, Rachel (T8) for example, described a higher order thinking curriculum developed in negotiation with her students. The students were required to design activities at various levels of Bloom's Taxonomy, around a common theme, and present them to other students. She found that the students were successfully able to develop the activities, but did not enjoy teaching these to the other students.

An important observation was also made by Helen (GES2) when she commented that it was important for *all* students to learn thinking skills, not just the gifted and talented, acknowledging the relevance of thinking skills in the regular class curriculum. She further explained her thoughts that, in addition to *teachers* using higher order thinking strategies in activities with their students, *students also* needed to be taught how to create higher-order questions for themselves, which would then empower the students to ask more effective questions.

5.8.4.2 Low Frequency of Use

All three of the GES (Lee, GES1; Helen, GES2; and Jody, GES5) who discussed thinking skills strategies expressed their opinions that many teachers they had observed were not using, or even aware of strategies such as Bloom's Taxonomy, SCAMPER, critical thinking, mind-mapping or brainstorming. Their comments

indicated that they had expected to see teachers using thinking skills strategies in regular classes, however these were not frequently observed, or even absent from many classes.

5.8.4.3 Concerns about Use of Thinking Skills

Three distinct concerns about the use of thinking skills strategies emerged from qualitative analysis of the GES and GEC comments:

- Low level of thinking in regular classes;
- Teacher perceptions of extra work; and
- Lack of teacher knowledge.

Comments by both GEC and GES revealed a concern that most tasks they observed in regular classes were actually at a low cognitive level. The GES each thought that unless teachers were using higher order thinking strategies, class activities tended to be at a low level of thinking, expressing a concern that it was easy for teachers to ignore the higher levels of thinking skills and just present activities at the ‘remembering’ and ‘understanding’ levels. For example, Helen (GES2) described how she had often seen “regurgitation of information” presented as student research due to teachers not using higher order thinking strategies with their students. Two of the GEC (Sandra T6, Rachel T8) also commented on the low thinking level of strategies used in their schools.

The GES also found that teachers perceived thinking skills use as extra work. The concept of ‘different rather than extra’ emerged from the GES discussions of their observations of thinking skills use in regular classes: their comments suggest that the teachers they worked with saw thinking skills as an *addition* to the regular curriculum

rather than a *different* way of teaching. This was exemplified by Jody's comment describing how she was encouraging teachers to use thinking skills to create differentiated learning experiences for gifted students:

. . . showing them how they can use those in their everyday teaching. Not something extra on top, but how they can use it to do what they're already doing, except do it better (Jody, GES5).

A comment by one of the GEC reflected a positive understanding of this concept: Rachel's (T8) commented on developing curricula based on Bloom's Taxonomy, where she described a practical use of thinking skills to develop a different way of teaching and learning.

Strong concern about lack of teacher knowledge in regard to the use of thinking skills strategies also emerged from qualitative analysis of the GES' comments. Observing infrequent or non-existent use of these strategies in regular classes, the GES explicitly linked this to a lack of teacher knowledge about thinking skills strategies. The GES also linked the conception of 'extra work' to teachers' lack of knowledge about use of thinking skills. Their comments seem to support a suggestion that a lack of teacher knowledge about the application of thinking skills strategies had a negative effect on their use in regular classes.

Further, these GES expressed opinions that this lack of knowledge could be improved by greater professional development in thinking skills strategies, to enable teachers to use these in their regular classes, and thereby allowing all students to develop and demonstrate their capabilities in this area. They thought that such professional development would increase teachers' awareness that incorporating

thinking skills in activities involved creating different learning tasks rather than adding extra tasks to the regular class curriculum. For example, Jody (GES5) described a recent initiative she had developed for teachers using de Bono thinking strategies. She explained that the intention here was to show teachers how thinking skills strategies could be used as a different approach to teaching, rather than an addition to the curriculum. More recent interest in teachers learning about thinking skills strategies and using these with their students, had been observed by both Helen (GES2) and Jody (GES5), with an increased interest in professional development sessions particularly from whole schools. Sandra (T6) also referred to a higher order thinking strategies professional development for the staff at her school, which led to discussion about and increased awareness of catering for gifted students.

The GES directly linked use of thinking skills strategies to identification issues. For example, Helen (GES2) commented she had found teachers who used thinking skills strategies in their classes were better able to identify gifted students in their classes, as these strategies enabled gifted students who excelled at using higher level thinking, but who may not otherwise be seen as gifted, to display their abilities:

Because that's opening them up to find kids that they didn't realise, who could actually think but maybe not please them in what they were producing... it's also allowing other kids to shine that they didn't notice because they're not into teacher pleasing but they're certainly into thinking and questioning.

Key Findings

- Focus group teachers and GES supported the relevance of thinking skills strategies for gifted students in regular classes.

- GES comments suggest that regular class curricula may not include thinking skills strategies.
- GES and GEC suggested that regular class tasks are often presented at a low level of thinking.
- Some teachers may lack knowledge about use of thinking skills strategies.
- The GES thought that teachers need greater awareness that thinking skills could be used to create differentiated learning experiences, rather than as addition to the regular curriculum.
- The GES suggested teachers need increased professional development in use of thinking skills.
- The GES linked use of thinking skills strategies in regular classes to broader identification methods.

5.8.5 Peer Tutoring

In the context of discussion on strategies appropriate for gifted students, four focus group teachers described various forms of peer-tutoring which they felt catered for gifted students in their regular classes. Three teachers (Cathy, T1; Karen, T4; Rachel, T8) described activities where gifted students were asked to act as a tutor or mentor to “less able” students in their peer-aged class. This included researching and teaching activities for other students, reading aloud to the class, a technology project, and movie making, as exemplified by Cathy’s comment: “I use quite a lot of peer tutoring so, assisting students who are not so capable”, or Rachel’s: “so they can actually become lighthouse people in the classroom”. Jenny (T10) described a cross-aged tutoring activity where year six students mentored year one students in computer skills, explaining that she also found this activity valuable for her less able year six students, as they benefitted from the example of/exposure to the skills of her gifted

students:

I think that was another way of extending some of the kids and consolidating what they already know. And the weaker kids actually learnt from watching the modelling from the other kids that were quite capable.

In the focus group discussions, both Karen (T4) and Rachel (T8) noted a negative response to peer tutoring from their gifted students. For example, in discussing a gifted boy who was asked to read to the class and explain information to other students, Karen commented:

He wasn't very happy to share... he didn't have the patience to or want to handle that, so it was interesting to note that he just wanted to do what he wanted to do and get on with that. He wasn't bothered with anybody who wasn't at his level.

When asked about strategies for gifted students, the GES did not discuss peer tutoring.

Key Findings

- Comments by focus group teachers indicated support for use of peer tutoring as strategy for gifted students.
- Some focus group teachers appeared to regard peer tutoring as an appropriate learning strategy for gifted students.
- Teachers' comments suggested that gifted students may not like, or participate willingly in, peer tutoring activities.

5.8.6 Curriculum Compacting

Four GES discussed curriculum compacting, stating that this was used infrequently to modify curriculum for gifted students. For example, Lee (GES1) found that, in her experience, teachers rarely modified curriculum for gifted students by compacting, and gave students more work rather than different learning experiences: “They think they give them more work than higher level work. Giving them more worksheets or something like that rather than looking at different ways of providing for them.” Rose (GES4) observed teachers often didn’t provide coordinated substitution or compacting, also describing the impact on gifted learners’ self-perceptions where teachers weren’t prepared to compact curriculum in early reading:

Teachers who are not prepared to allow kids to blossom at the level they can achieve at and are keeping them . . . It’s like ‘we’re still doing sounds and words, so your kid won’t fit in, so they can sit in the corner and read a book’. So they’re made to feel different and disadvantaged because they happen to be able to read already.

Kate’s (GES3) comments reflect teachers’ concerns about altering curriculum to suit their students:

Changes in curriculum really stress teachers out. ...the National curriculum is set out by grade level, and teachers are concerned about what they are required to teach. So I have teachers asking me, ‘Can I still differentiate, or will I just have to teach one year level?’ And of course the answer is, ‘Yes, you should still differentiate’, but teachers are really stressed about the changes.

The focus group teachers did not discuss compacting, nor was it suggested in comments for the open-response section of the questionnaire.

Key Finding

- The GES comments suggest that curriculum compacting was not commonly used to provide systematic differentiation of learning experiences for gifted students.

5.9 Chapter Summary

Analysis of the focus group discussions and interview data revealed five main themes regarding issues for teachers in providing for gifted students in regular classes (the first four of which concurred with questionnaire respondents' suggestions about issues): time, resources, range of students, teacher knowledge, and professional development. Analysis of the data showed that the first three of these issues (time, resources, range of students) were often inter-related. The findings showed that class teachers were concerned about the time required for planning differentiated activities in relation to perceptions about curriculum pressures, availability of specialist resources, and expectations to provide for struggling students in priority. Comments commonly expressed views that differentiation for gifted students was 'extra work' for the class teacher, suggesting that teachers viewed gifted provision as extraneous to their central role. While acknowledging the teachers' concerns, the GES however viewed differentiation in the regular class as a different way of thinking about teaching and learning, rather than extra work. Analysis of the data regarding teacher knowledge issues revealed that some teachers may possess limited knowledge about gifted characteristics, identification and provision. Findings strongly suggest that teachers' professional development in gifted education may not be sufficient to

support adequate provision in regular classes. Successful strategies suggested by the focus group teachers and GES revealed two main themes: flexible curriculum options which are negotiated with students; and student research / project based learning.

Chapter Six

Synthesis of Findings and Discussion

6.1 Introduction

The purpose of this chapter is to provide a synthesis of the findings from both the quantitative and qualitative data, and discuss these in relation to the three research questions and relevant literature. Three separate sections discuss the data sources and key themes which emerged from the findings in relation to each question, with possible interpretations provided. As discussed in the methodology chapter, the quantitative and qualitative findings were combined in the analysis stage of the sequential, explanatory mixed-methods design used for this study. Where available, the quantitative findings are discussed first, providing an initial interpretation of teachers' self-reports of their strategies and issues. Qualitative findings are then used to expand these interpretations and provide possible explanations. The chapter concludes with a summary, linking findings between the research questions.

6.2 Research Question 1

What instructional strategies do teachers use to differentiate learning experiences for gifted students in regular classrooms?

Findings in relation to this question are drawn from both the quantitative and qualitative data. Quantitative findings are derived from Section IV of the questionnaire (Classroom Practices), in which teachers were asked to rate their use of thirty-five instructional strategies with gifted students in their regular classes. Data for this part of the questionnaire was obtained from teachers who currently had gifted students in their classes. Section IV of the questionnaire also included an open response section, in which teachers were asked to suggest strategies which they

thought were successful to cater for their gifted students. Analysis of the data was based on the categorisation of the thirty-five strategies into the following five dimensions which were derived from the literature:

- Challenge
- Thinking skills
- Choice
- Curriculum Modification
- Grouping

The quantitative findings for each of these dimensions are discussed first, and are used to provide information about the frequency respondents used the thirty-five instructional strategies, or nominated strategies in response to the open question. Qualitative findings, from questionnaire respondents' reports of their suggested strategies, combined with suggestions from focus group teachers/GEC and the GES, are used to expand on this initial analysis, and provide a wider picture of teaching practice in regular classes aimed at differentiating learning experiences of gifted students. Four key themes regarding teachers' reported use of strategies for gifted students emerged from the findings in this study:

- Teachers recognise and use most recommended strategies identified in the literature.
- Teachers used these strategies for gifted students infrequently.
- Teachers' understanding about use of differentiation strategies may be limited.
- Teacher knowledge about differentiation may be limited.

6.2.1 Teachers Recognise and Use Most Recommended Strategies

The findings in this research indicate that regular class teachers are aware of most strategies recommended as appropriate for gifted students. Findings from the quantitative data identified that the majority of teachers report using these strategies to some extent. Findings from the qualitative data further supported this position: participants were able to suggest and/or discuss various forms of strategies (particularly for thinking skills, research and extension) which they thought were suitable for use in a regular class. In addition, analysis of the qualitative data revealed that participants were able to indicate or propose elements of strategies which they felt were successfully implemented in regular classes to create appropriate learning for gifted students. These results suggest that the teacher participants in this study were aware of various uses of these strategies, recognised that they are relevant to use in the regular class situation, and consider that they are able to use them to differentiate learning experiences for their gifted students. There are however several important exceptions to this assertion, as discussed in section 6.2.3 Teachers' Understanding.

An interpretation which could be drawn from these results is that classroom teachers appear to be aware, to some degree, that gifted students need different, more challenging activities than the regular class curriculum. It seems that teachers do possess some knowledge about appropriate strategies for gifted students, and feel that they are able to use these strategies in their practice. It could also be interpreted that teachers do attempt to make practical application of this knowledge in order to provide appropriate learning experiences for their gifted students. It therefore seems that class teachers, to the extent of their understanding and capacity, are endeavouring to work in the best interests of their gifted students.

6.2.2 Infrequent Use of Strategies for Gifted Students

The frequency of use of most strategies however, appears to be problematic. According to the quantitative findings here, most individual strategies included in this study were used once a week or less by the majority of respondents. Of the thirty-five differentiation strategies teachers were asked to report on, it appears that none are being used frequently for gifted students in regular classes. Given that relevant literature considers the five dimensions of differentiation explored in this study as critical in the development of intellectual giftedness (Bernal, 2003; Reis et al., 2011; Tomlinson et al., 2003), and most strategies here as useful, it is of concern that these strategies appear to be used infrequently by teachers in their regular classroom. A deeper understanding of this situation is provided by findings from the qualitative data, in which professional colleagues who were more experienced in catering for gifted students (GES, GEC), questioned teachers' use of differentiation strategies, and reflected on observing a common absence of differentiation strategies in regular classes. Qualitative analysis of the GES and GEC comments revealed concerns about the lack of differentiation in activities they observed in regular classes, a low cognitive level of activities, and teacher perceptions of differentiation as 'extra work', rather than a different way of teaching.

These findings are consistent with previous research investigating differentiation strategies used with gifted students. For example, as mentioned in the literature review, the Classroom Practices Study (Archambault, Westberg, Brown, Hallmark, Zhang, et al., 1993) found that very little differentiation for gifted students took place in regular primary classes. While these researchers had expected that strategies such as curriculum modification, advanced content, independent study or challenging curriculum units would be used on a daily or weekly basis, they in fact

found far less frequent use (1993, p.98). Further research by the NRCG/T, including an observation study (Westberg, 1993; Westberg, Archambault, Dobyns, & Salvin, 1993), and a follow up study to the CPS (Westberg & Daoust, 2003), found similar results. More recent studies have also discovered that little differentiation takes place for gifted students in regular classes (Al-Lawati & Hunsaker, 2007; Assouline et al., 2013; Farkas & Duffett, 2008; J. J. Gallagher et al., 1997; Grubb, 2009; Olenchak, 2001; Young & Balli, 2014). Comparable results have been shown in an Australian context (The Australian Senate, 2001; Whitton, 1997). It appears therefore that teachers' awareness of differentiation strategies may not be translating into practice at a rate which research recommends is needed by gifted students. If teachers know about differentiation strategies, are able to identify elements which make them successful, and consider that they are able to use these strategies in a regular class context (as found in this study), it seems incongruous that these strategies are not used more frequently than once a week (at most), or not at all according to the qualitative findings. The following five sections discuss the findings with regard to the five dimensions of differentiation explored in this study.

6.2.2.1 Use of Challenge Strategies

This research found that challenge strategies were not reported to be used frequently with gifted students. In relation to the use of challenging strategies, it thus seems possible that some teachers may not be aware of the frequency that more challenging activities are needed for gifted students. The low frequency of challenge may also relate to teacher beliefs about challenge for gifted students, or understandings of the level of challenge needed by gifted students. In investigating the effects of middle school teachers' beliefs on their classroom practice, Brighton (2003) found that teachers were cautious about setting tasks which may cause students to

struggle. Her results suggested that teachers reduced the level of challenge in set tasks, fearing that the learner would find an unsuccessful learning experience (and therefore the teacher, an unsuccessful teaching experience). She argued that in doing this, teachers effectively removed students' opportunities to achieve success through sustained effort, or develop personal characteristics such as persistence and resilience (non-intellective factors essential to development of giftedness). Put simply, in Vygotskian terms, perhaps some teachers have difficulty in judging the ZPD of challenge for gifted students.

6.2.2.2 Use of Thinking Skills Strategies

Thinking skills were also shown to be used infrequently: the majority of respondents reported using most thinking strategies with their gifted students once a week or less. In addition, qualitative analysis of the GES and GEC comments revealed concerns about the low level of thinking in activities they observed in regular classes, and teacher perceptions of thinking skills strategies as extra work rather than a different way of teaching. These more experienced teachers explicitly linked their concerns to a lack of teacher knowledge about thinking skills strategies. In combination with the quantitative findings (in which teacher participants claim they know about, and do actually use higher order thinking skills), these qualitative findings bring into question teachers' understandings about the level of thinking in the curriculum they present in their regular classes.

This suggests that teachers may not be aware that the cognitive level they present in their activities is possibly at a low level, or it could be that they may not analyse the curriculum they present in this regard. These findings are consistent with research on teachers' use of thinking skills strategies (Ratcliff et al., 2012). It also

appears that teachers' conceptions of thinking skills as an addition to the regular curriculum may be having a negative impact on the use of thinking strategies, and could offer an explanation to the low frequency of use of these strategies. From the lens of the GES comments, teachers may need greater information about integrating thinking skills into regular class curriculum. Another explanation for these findings could be teachers' beliefs about their ability to teach thinking skills. Burns and Reis (1991) found that not all teachers were comfortable with using these strategies in their teaching. Their results indicated that extensive and specific professional development, opportunity for planning, and on-going support were all necessary to increase teachers' confidence in using these strategies. It therefore appears that teachers' understanding of giftedness, and the cognitive level required to challenge their thinking may contribute to infrequent use of differentiation strategies which involve higher level thinking.

6.2.2.3 Use of Choice Strategies

Choice appears to be the most popular of the dimensions of differentiation examined in this research: the quantitative findings here suggest that research participants recognised choice strategies as particularly relevant to provide appropriate differentiation for gifted students. Additionally, findings from all three qualitative data sources (questionnaire – open questions, focus groups, interviews) indicated that research participants thought student-teacher negotiation of various choice elements (topic, goals, investigation methods, and/or means of presentation) made learning activities such as independent tasks, extension or research successful for gifted students. These qualitative findings further suggest that allowing students to make choices about their learning experiences encourages student-directed learning, and enables the potential to provide appropriately challenging activities. Alice's (T5)

comments in particular suggested that if challenged by negotiated, student-centered learning, gifted students engaged more fully with learning tasks, were less inclined to produce negative behaviour, and therefore achieve higher outcomes.

However, similarly to findings on other dimensions of differentiation in this study, the findings here suggest that choice strategies are not used frequently by regular class teachers to cater for their gifted students. Despite being aware of choice strategies, and being able to identify areas for successful use, it appears that participants in this research use choice strategies for their gifted students, on average, once a week or less. The Classroom Practices Study (Archambault, Westberg, Brown, Hallmark, Emmons, et al., 1993)(1993) similarly found that gifted students engaged in choice activities less than a few times a month, and therefore that choice was not frequently used to provide differentiated learning experiences for gifted students in regular classes. Other studies have also found a low frequency for choice strategies in regular primary classes (Blanchard, 2013; Gentry et al., 2001; Gentry et al., 2002).

There are several possible explanations for the infrequent use of choice shown in this study. One is reflected by the teachers' comments in the open-responses and focus group discussions about the amount of work and time these participants thought that it took to design curricula which allowed students to make choices. Another possible explanation for this finding can be shown in the insights of the GES, particularly in Lee's comments (GES1) about teaching styles when she asserted that if teachers were using a very teacher focussed style, rather than negotiating with their students, then it may be difficult for them to allow opportunities for choice for their gifted students. This suggests issues for teachers related to power-sharing with students (Jung, 2014).

6.2.2.4 Use of Curriculum Modification Strategies

All but one of the curriculum modification strategies explored in this study were reported to be used infrequently. This research found that almost all respondents reported frequent use of open-ended activities for their gifted students, with ninety-one percent reporting use at least once a week, and more than half reporting use of this strategy several times a week. It appears then that teachers may find this strategy useful to differentiate learning for gifted students. However all other strategies in this dimension were reportedly used far less frequently: once a week or less by at least two thirds of respondents. Pre-testing was reported to be the least used strategy, with only thirteen percent of respondents using this strategy more than once a week. The use of these strategies also revealed key indicators about teachers' understandings about differentiation strategies, and are discussed in more detail in the Teacher Understandings section below as curriculum compacting, research strategies and open-ended activities.

6.2.2.5 Use of Grouping Strategies

Grouping strategies were likewise found to be reported as used infrequently by research participants, apart from mixed-ability grouping, which was reported to be used several times a week by almost half of the respondents. In particular, it was found that grouping students by ability was not used frequently, either within regular classes, across classes or with higher grade students. Significantly, it was found that teachers reported more frequent use of mixed-ability grouping than same-ability grouping. Similarly to the previous section, comments about use of grouping strategies revealed evidence about teachers' understanding of differentiation for gifted students, and are discussed in following section.

6.2.3 Teachers' Understanding of the Use of Differentiation Strategies for Gifted Students

Findings about teachers' use of six strategies (from three of the five dimensions of differentiation) revealed evidence about their understanding of the use of differentiation strategies with gifted students, in relation to the difficulties they reported in implementing these strategies. These key indicators exemplified the complexities of providing differentiation for gifted students in regular classes, and perhaps illustrates lack of understanding of intent of strategies. This section discusses findings in regard to these six strategies:

- Pace of learning (Challenge dimension)
- Curriculum compacting (Curriculum modification dimension)
- Research (Curriculum modification dimension)
- Open-ended activities (Curriculum modification dimension)
- Ability grouping (same vs. mixed) (Grouping dimension)
- Gifted students assisting learning of others (Grouping dimension)

A final section then synthesises these findings in regard to teacher knowledge about use of differentiation strategies.

6.2.3.1 *Pace of Learning*

Pace of learning is one of the Challenge strategies, which, according to the literature, is an essential differentiation strategy for gifted students. However, evidence from the quantitative data suggests that a substantial proportion of teachers may not provide any opportunity for students to work at their own pace: more than one in five respondents indicated that they did not ever use this strategy. In effect, this

indicates that gifted students could spend at least 1-2 whole years of primary school (>1:5 teachers) having no pace variation at all, with their curriculum completely paced to the regular class. Additionally, where respondents did indicate use of this strategy, most reported use only once a week or less. This suggests that, in the years when they do encounter teachers who adapt the pace of learning, gifted students possibly spend more than eighty percent of their time working at the pace of the class. This situation clearly would not provide sufficient challenge for gifted students. Other studies have similarly found that pace variation was rarely used for gifted students in regular classes (Assouline et al., 2013; Hunsaker, Nielsen, & Bartlett, 2010; S.-Y. Lee & Olszewski-Kubilius, 2006; Peine & Coleman, 2010). Relevant research however finds that allowing gifted students to work at their own pace is an essential element of differentiation (Fredricks et al., 2010; Little, 2012), and highly preferred by gifted students themselves (Delisle, 2012b; Kanevsky, 2011; D. D. Thompson & McDonald, 2007). The findings here thus suggest a lack of understanding for teachers about the learning needs of gifted students.

It is possible to interpret these findings in two main ways. Firstly, one could question teachers' knowledge about the pace of learning of gifted students: they may simply be unaware that that gifted students are able to process information *several times* faster than chronologically aged peers and, as a result, often need to learn at a faster pace. It is possible that teachers lack knowledge about the degree of difference in this processing speed, and thus may not understand the need to provide opportunity for gifted students to learn at a faster pace. This suggests that teachers' understanding of giftedness may not be sufficient for them to recognise the critical nature of this strategy. Secondly, to be able to adjust the pace of learning for gifted students, teachers would require knowledge about appropriate extension tasks, awareness of

curriculum compacting, and understanding of how to manage this in a regular class. It is therefore possible to question teachers' knowledge about how to differentiate pace for gifted students.

6.2.3.2 Curriculum Compacting

Curriculum compacting systematically condenses learning to allow a faster pace and extended learning options for able students (Reis et al., 1998). The findings here suggest that while elements of curriculum compacting are used with gifted students, this does not seem to be as an organised strategy involving pre-testing, elimination and substitution. Findings from the quantitative data suggest that substitution may be used on an ad hoc basis rather than co-ordinated with pre-testing and elimination. The qualitative data suggests similar findings: while the class teacher participants in this study did not discuss compacting curriculum, comments from the GES indicate a lack of observed use of curriculum compacting for gifted students in regular classes.

A possible interpretation from these findings is that teachers may not be aware of curriculum compacting, or a formal process of making decisions about providing advanced learning activities for gifted students. It could also be that teachers' interpretation of a 'set' curriculum interferes with their perception about altering curriculum to match the needs of individual students, as indicated in Kate's (GES3) and Rose's (GES4) comments on changes in curriculum. The low use of curriculum compacting could also be related to findings about the use of extension activities and/or pace variation.

6.2.3.3 Research Strategies

Student research, in various forms, also seems to be a widely accepted strategy, as indicated by the findings from both the quantitative and qualitative data here. The qualitative findings from several sources in this study further identified particular elements which were thought to make the use of research strategies successful. Most often the types of research activity described included elements of choice (topic, goals, tasks, methods and/or presentation), which the research participants thought created challenge and/or developed thinking skills. This supports the literature regarding use of research as a strategy for gifted students, which recommends that students should develop independent inquiry skills (Rosselli, 1993; Rowley, 2008; Van Tassel-Baska & Brown, 2007). Student choice of topic was very frequently suggested in combination with research, often indicating that these were tailored to the student's personal interests. Relevant literature on the characteristics of gifted students has found that they often have very specific and focused interests they wish to explore (Gentry & Gable, 2001), and therefore suggests the use of choice in creating viable research or independent study options for gifted students (Bishop, 2000; Powers, 2008). It appears from the findings here, that participants in this study recognise using this focus in research tasks as a useful means of creating personal differentiation for gifted students. However, while student research was shown to be a well-known strategy, it was also shown to be used infrequently: once a week or less by most respondents. One possible explanation for this finding is that research is perhaps being used in regular classes as a whole class strategy, with little or no differentiation for gifted students.

In addition, all of the GES expressed strong concerns about whether independent research is being used effectively to cater for the needs of gifted students.

An interpretation of this finding is that perhaps not all teachers use the elements identified in the qualitative data, such as choice of topic, setting own tasks/work targets or negotiating presentation formats, to create challenging research tasks for their gifted students. While participants in this study were able to identify elements which made research a successful activity for gifted students, it is possible that these are not widely used in regular class situations. Rosselli's (1993) assertions may also provide useful insight to interpret these findings. In order for research to be used effectively for gifted students, Rosselli contends that teachers must change their role from 'data giver' to 'data validator'. This involves elements suggested by participants in this study such as investigation of topic of interest, choice of tasks/goals, and/or negotiation of presentation method. If teachers are working in the mode of 'data giver' rather than 'data validator', they may set low-level research activities which require students to retrieve already known information rather than develop inquiry and information synthesis skills. Another interpretation, suggested by Helen's (GES2) comment in particular ('...sending kids off to research...') is that teachers may be setting research tasks for gifted students without creating situations for them to learn the skills required for independent research (Bishop, 2000). If students don't possess appropriate research skills, it would be extremely difficult for them to produce high level research. It therefore appears that, while a significant proportion of teachers find research tasks a useful strategy to cater for their gifted students, this strategy may not be used in a differentiated manner, or at an appropriate level for gifted learners.

6.2.3.4 Open-Ended Activities

The findings in this research indicated that while open-ended activities are used more frequently than other strategies, teachers' understanding of open-ended activities may not be sufficient for this strategy to be used effectively. Findings from

the quantitative data suggest that a high proportion of participants may regard open-ended activities as a highly suitable strategy for gifted students. Teachers' comments suggested a perception that open-ended activities allowed gifted students to demonstrate an advanced level of achievement in regular classrooms. The findings from qualitative analysis of the data however also revealed that open-ended activities in regular classes may not be differentiated to create appropriate learning experiences for gifted students. While the literature supports use of open-ended activities with gifted students, it also clearly suggests that care must be taken to pose these at a level commensurate with students abilities (Hertzog, 1997, 1998; Rosselli, 1993). To provide appropriate learning for gifted students, open-ended activities need to be set at a higher level than regular class activities. According to this study, gifted students may be frequently set tasks which teachers view as open-ended, however these may not be at a level which provides appropriate learning for gifted students.

Given these results, it is possible to question teachers' understanding of the use of open-ended activities with gifted students. One explanation for this result may be the ambiguity of the term 'open-ended activity': there is no standard definition of the cognitive level required. In essence, 'colouring-in' is an open-ended activity: students could theoretically colour in a picture to their own wishes, degree or style. It is not however, fundamentally a task which provides cognitive challenge. Recognising the ambiguity of open-ended activities, Hertzog (1998) noted the issues of teacher knowledge and beliefs in both planning and assessing open-ended tasks. It appears then that there may be variance on the understanding of open-ended activities, and that teachers may need greater awareness that the open-ended nature of the tasks must also be challenging to the gifted students' abilities.

6.2.3.5 Ability Grouping (Same vs. Mixed)

This study found that, within the regular class/school context, gifted students may not be commonly grouped by ability, with other gifted students, or with older students. Qualitative analysis of teachers' comments suggest a lack of opportunity for teachers to provide ability grouping in regular situations. Similar to the findings in previous studies of classroom grouping practices for gifted students (Archambault, Westberg, Brown, Hallmark, Zhang, et al., 1993; Brulles et al., 2010; Fisher & Frey, 2012; Westberg et al., 1993; Whitton, 1997), the results here appear to confirm that ability grouping is not usual practice for gifted students in regular classes.

Additionally, the results here indicate that mixed ability or heterogeneous grouping appears to be a preferred grouping strategy for gifted students. Findings from the quantitative data suggested that mixed-ability grouping was used with gifted students frequently, and certainly more often than same ability grouping. This was supported by findings from the qualitative data, with participants' comments indicating popular support for mixed-ability learning strategies.

Some early research and meta-analyses of grouping studies included positive recommendations for grouping students of varying ability levels, but did not specifically identify gifted students. It would thus seem that research specifically in the field of gifted education offers a more reliable basis to interpret these results. Recent research on each of the ability grouping options included in this study (within class, across classes, with higher grades), has consistently shown both academic and social benefits for gifted students (Azano et al., 2011; Colangelo et al., 2004b; Neihart, 2007; Rogers, 1993, 2007; Sellers, 2008; Shields, 1996; Tieso, 2003, 2005; Westberg et al., 1997). While such research recommends that gifted students should be grouped with similar ability students for at least part of each day, this does not

appear to be reflected in classroom practice. Given these findings, it is possible to query whether teachers are aware of the research on the benefits of same-ability grouping for gifted students.

Another explanation could be that teachers are concerned about possible negative effects of ability grouping on gifted or other students. However, as explained in the literature review, this concern has been shown not to have foundation (Missett, Brunner, Callahan, Moon, & Azano, 2014; Neihart, 2007; Rogers, 2002). Researchers have also found that use of ability grouping is affected by teacher beliefs (Azano et al., 2011; Missett et al., 2014; Moon & Brighton, 2008). Missett for example, found that teachers' orientation toward either individual student needs or group needs affected their decisions about grouping: "teachers with an individual student orientation typically seemed more likely to use personalized pacing, ability grouping, and formative assessment" (2014, p. 256).

This research suggests that teachers' personal beliefs about grouping, giftedness, and education in general, have an impact on their grouping practices. It seems that the preference for mixed-ability grouping may also explain the low prevalence of same-ability grouping. One possible explanation could be the popularity of co-operative learning in the current zeitgeist of general education, and a perceived conjunction of co-operative learning with mixed-ability grouping (Mills & Durden, 1992; Missett et al., 2014). However Mills and Durden (1992) argue that co-operative learning and ability grouping are not mutually exclusive practices. Even Slavin, a major proponent of cooperative learning, has stated that, "use of co-operative learning does not require dismantling ability group programs" (1990, p. 7).

Research in gifted education is clearly less positive about the use of mixed-ability grouping with gifted students. It is possible (especially given the information about teacher professional development in gifted education in this research and elsewhere (Hong et al., 2011; Jarvis & Henderson, 2012)), that class teachers are unaware of the negative effects of mixed-ability grouping on gifted students. It is interesting that, despite these recommendations, the results of this research indicate high usage of mixed-ability grouping with gifted students (Ramsay & Richards, 1997; Sellers, 2008). The findings of this study indicate that teachers may not be aware of these recommendations. This suggests that teachers at all stages of development need greater information about the use of mixed-ability learning with gifted students. While there are undoubtedly benefits in co-operative learning under some circumstances, it appears that teachers need to be more cautious in using mixed-ability grouping with gifted students, and consider both the range of abilities mixed together in a group, and purpose of the activity (academic vs. social). Both of these interpretations suggest that teachers may need greater access to information about recommended grouping practices for gifted students.

6.2.3.6 Gifted Students Assisting the Learning of Other Students

A distinct but related theme, which frequently appeared in teachers' comments about both mixed ability grouping and peer tutoring, was that of 'gifted students being used to assist the learning of other students.' This was shown in both the open-response and focus group data sets. The comments suggest that a popular social value of gifted students in regular classes is that they provide a role model of efficient or high level learning for other students (particularly in collaborative learning situations) which promotes increased achievement for the class as a whole, or in explicitly teaching/guiding the learning of other students. Relevant literature has shown strong

support for this perception of both pre-service and classroom teachers (Agne, 2001; Al-Lawati & Hunsaker, 2007; Bain et al., 2007; Carman, 2013; Gross, 1993; Hertberg-Davis, 2009; Maguire, 2008; Missett et al., 2014; Moon & Brighton, 2008; Persson, 2010; Siegle, Moore, Mann, & Wilson, 2010).

The findings here also suggest teachers' perceptions that this type of learning situation is beneficial to gifted students. However teachers' comments also indicated that gifted students may not like or participate willingly in peer tutoring activities. Peer-tutoring was not included as one of the thirty-five strategies in the Classroom Practices section of the questionnaire in this study, nor did the gifted education specialists identify this strategy. Learning in mixed-ability groupings has not been shown to have academic or social benefits for gifted students; in contrast it has been shown to be a restrictive environment which causes frustration and limited learning (Hertberg-Davis, 2009; Nelson, 2012). The current study suggests that teachers may not be aware of such research outcomes.

To explain these results, one perhaps needs to consider the ethical question of reasons for gifted students (or any student) being used to facilitate the learning of others. This suggests a value of egalitarianism which may influence teachers' decisions about grouping for gifted students. This theme extends to a wider philosophical discussion about whether the purpose of education is to promote the achievement of individuals or the development of society. If higher priority is placed on social goals, the need for gifted students to maximise achievement could be seen as secondary to the needs of the wider group, and the use of gifted students to teach others could be seen as acceptable. If it is believed that each individual's achievement is of greater value, all students must be free to learn at their optimal level. One could

then question the use of gifted students to teach other students, thereby restricting their opportunities to learn at an appropriate level. It could also be argued that the high achievement of gifted students does actually contribute to a greater social capital (Renzulli, Koehler, & Fogarty, 2006). This interpretation suggests that teachers' personal values and beliefs about giftedness have a significant impact on their choices of instructional methods.

6.2.4 Teacher Knowledge about Differentiation

The findings of infrequent use of strategies here, also suggest that it is perhaps possible to question teachers' knowledge about how to differentiate, or perhaps even their confidence to replace regular class strategies, with strategies that produce higher-level learning. Other researchers have also found that teachers' knowledge about differentiation affected their abilities to create appropriate activities for gifted students (Endepohls-Ulpe & Thömmes, 2014; Grubb, 2009; Logan, 2011; Rowley, 2008; Sellers, 2008; Tomlinson, 1995; Van Tassel-Baska, 2012). This study further suggested that teachers viewed differentiation as 'extra work', rather than a different way of teaching. It therefore appears that teachers' understandings about differentiation, and conceptions of differentiation strategies as an addition to the regular curriculum may be having a negative impact, and could offer an explanation to the low frequency of use of these strategies. Particularly from the lens of the GES comments in this study, teachers may need greater information about integrating differentiation into regular class curriculum.

A more problematic explanation for these findings may be teachers' concepts of differentiation via 'extension'. The term 'extension' itself implies 'building on from the basic' rather than 'replacing' curriculum. If teachers conceptualise extension

as an ‘add-on’ to the regular curriculum, it is possible that they require gifted students to complete the regular-class, basic-skills activities to demonstrate their competence on grade-level content before being given extension activities, as indicated by the finding from the focus group data. Unfortunately, gifted students often do not engage with the regular curriculum (Clinkenbeard, 2012; Delisle, 2012b; Little, 2012) therefore, if they don’t complete regular tasks quickly and correctly, it will not appear that they *need* extension or further challenge and differentiation of the regular curriculum, which may offer an explanation for the low frequency reported here. The findings in this research indicate that challenge or extension activities may be given after completion of regular class tasks. The nature of this circular argument may thus contribute to a low frequency of differentiation in regular classes.

A possible explanation for a lack of differentiation in regular classes can be shown in the insights of the GES, particularly in Lee’s comments (GES1) about teaching styles. She asserted that if teachers were using a very teacher focussed style, rather than negotiating with their students, then it may be difficult for them to allow opportunities for choice for their gifted students. This possibly suggests issues for teachers in power-sharing with students (Jung, 2014). Another possible explanation for these findings is reflected by the comments in the open-responses and focus group discussion regarding the amount of work and time these participants thought that it took to design higher-level or multi-layered curricula, or which included elements of student-choice in the activity. It seems this perception again reflects the concept that differentiation is extra work than a different way of teaching. Further, if teachers perceive, as suggested in other parts of this research, that other environmental factors (such as class size, resources, range of students etc.) impact on their provision for

gifted students, it makes it difficult to provide differentiation (Endepohls-Ulpe & Thömmes, 2014).

6.2.5 Summary of Research Question One

According to the findings of this research classroom teachers are using appropriate instructional strategies to differentiate learning experiences for gifted students in regular classrooms. However, given the reported infrequent use of differentiation strategies, it also seems that these strategies are not used often enough to provide gifted students with sufficient differentiation in regular classroom settings. While the teachers who responded to this questionnaire seem to recognise that differentiation is needed, they do not seem to be aware of the frequency or level of differentiation required by gifted students. Findings from the qualitative data support this interpretation. In effect, according to the findings discussed in this section, it appears that very little differentiation takes place for gifted students in regular classrooms.

6.3 Research Question Two

What are some of the issues identified by teachers affecting the provision of differentiated learning experiences for gifted student in regular classrooms?

The purpose of this section is to provide a synthesis of the findings regarding research question two, and discuss these in relation to relevant literature. To address this question, findings are drawn from both the quantitative and qualitative data. Quantitative findings are represented from Questionnaire sections II, III and IV, as well as the open response section. Qualitative findings from respondents' reports of

their classroom issues are combined with suggestions from focus group teachers, GEC and the GES, to provide a deeper understanding of the issues.

The open response section of the questionnaire asked respondents to report issues which affected their provision for gifted students. Four main issues were identified in the data: time, resources, range of students, and teacher knowledge. To further explore these issues, they were specifically included in the questions for the qualitative phase of the study. Focus group teachers and GES were also asked to comment on other issues which they saw as relevant to provision for gifted students. On analysis of the sets of data, comments indicating the first three of the main issues (time, resource and range of students) often appeared to be inter-connected, and for discussion these have grouped under the theme of class management. Analysis of comments regarding teacher knowledge provided three themes: identification, teacher understanding of giftedness, and teacher professional development in gifted education. Four key themes regarding teachers' issues in catering for gifted students in regular classes thus emerged from the findings in this study:

- Class Management Issues (time, resources, range of students)
- Identification Issues
- Teacher Understanding of Giftedness Issues
- Teacher Professional Development in Gifted Education Issues

6.3.1 Class Management Issues

The findings in this study indicate that from the class teacher participants' perspectives, the most pressing issues in catering for gifted students centre around the practical day-to-day concerns of classroom management. The issues of time, resources and range of students were strongly represented in both the quantitative and

qualitative findings, each raised by large proportions of questionnaire respondents (time 52%, resources 40%, range of students 33%). Other issues raised less frequently included student numbers, student behaviour, physical space and curriculum changes. Qualitative analysis of open-response, focus group and GES comments regarding these issues augments understanding of the complexities of teaching a diverse range of students.

Findings from the teacher participants' comments indicated that these issues were often interconnected, particularly the three main issues identified (time, resources, range of students). For example, the teacher participants' comments suggested that the time available to them is impacted by other issues such as an excessive workload, number of students, timetabling, curriculum difficulties and/or behaviour management; or a perception that students with learning difficulties need to be prioritised, which then restricted the time available to plan for, and spend with gifted students. Thus the overwhelming perception of teachers about issues directly affecting provision for gifted students is that catering for gifted students is seen as an *extra* to their role as a regular class teacher and that additional work is required to cater for gifted students within a 'regular class'. The theme of 'extra work' appeared most strongly in teachers' comments about their difficulties in catering for a range of students. These comments about 'extra work' reveal teachers' disposition towards differentiation as beyond their role as a regular classroom teacher. This research thus clearly shows how teachers perceive that a range of interconnected issues negatively affects their ability to provide effectively for their gifted students.

However qualitative analysis of the GES/GEC comments regarding time, resources and range of students showed a clear dichotomy between the concerns of

the classroom teacher participants, and the concerns of these practitioners, who were more experienced in catering for gifted students. While the GES acknowledged that classroom teachers expressed concerns about class management issues to them, they strongly linked these teachers' concerns to wider issues of teacher understanding of giftedness, knowledge about appropriate strategies, and/or ability to differentiate activities. Their comments also indicated that they thought catering for gifted students required teachers to think differently about how they approached planning learning activities and use of class time, rather than viewing it as *extra* to their role. This discrepancy in opinions is significant as it reveals important implications regarding teachers' perceptions of their role, and their knowledge about understanding of giftedness. Similarly to findings from the GES in this study, education researchers have also found that teachers commonly perceive similar difficulties in providing for their gifted students, and available literature links these concerns to wider issues (Dixon et al., 2014; Page, 2000; Ratcliff et al., 2012; Tomlinson et al., 1995; Van Tassel-Baska, 2012; Van Tassel-Baska & Stambaugh, 2005; Welsh, 2011).

There are several possible explanations for the discrepancy between classroom teachers' and GES views of classroom management issues affecting provision for gifted students found in this study. The strongest explanation shown here seems to be the teachers' perceptions of 'extra' work and their disposition towards differentiated curriculum. The evidence here seems to suggest that teachers view differentiation as an aspect they consider after planning their regular curriculum. These findings further suggest that teachers perceive curriculum as a standard, grade-level concept, and view teaching as presenting an average curriculum at the prescribed grade-level to a 'regular' class. To use Kate's (GES3) term, if a teacher's 'mindset' is that their role is to teach a 'regular'/same ability class in this manner, it is possible to understand how

they view catering for gifted students as ‘extra’ to their primary role. It was also suggested that recent moves to a national curriculum in Australia, which is organised via year levels, may have compounded this perception. The findings here indicate that in order to be effective with gifted students, teachers need to view differentiation as ‘normal’ classroom teaching, rather than as an addition to regular curricula.

It is also possible to consider whether teachers have the necessary knowledge and skills to incorporate differentiation into their regular class teaching role. In order to be able to cater for a range of abilities simultaneously, teachers would need an extensive knowledge of differentiated strategies, as well as a wider understanding of curricula at multiple levels. It is thus possible that class teachers may not be able to use their planning time effectively, due to lack of confidence or knowledge about how to create advanced activities for gifted students within the context of the regular class (Dimitriadis, 2012). The low frequency of use of differentiated strategies, as discussed in the previous section, perhaps supports this idea: it may be that while teachers claim they know about differentiation strategies, they actually lack confidence in planning and using these strategies. It appears that teachers may lack knowledge about planning differentiated curricula which encompass a range of student abilities, and therefore their working model of differentiation may be to plan activities for ‘regular’ students, then create extra higher level activities for gifted students. It is also possible that teachers lack confidence about planning curricula using differentiation strategies in place of what they consider regular curriculum activities. The findings in this study seem to indicate that teachers need greater knowledge and/or support in planning curricula which cater for a range of learning abilities simultaneously.

The second most frequent issue identified by teachers concerned a perceived

lack of resources. One possible explanation might be that teachers think they need specific resources to teach gifted students. Comments from the GES however indicated opinions that specific resources were not necessary to differentiate curricula, suggesting that the students themselves, and their interests, were the main resource needed. Another possible explanation may be that teachers are not aware of support material or published resources which are available to assist in planning curricula appropriate for gifted students. The findings in this research indicate that teachers may be looking for access to prepared higher-level curricula to cater for their gifted students. Such resources are in fact, easily available. University research centres such as G.E.R.R.I.C. (U.N.S.W.); the Center for Gifted Education (College of William and Mary); commercial publishers such as Hawker Brownlow, Prufrock Press, Great Potential Press; and websites (e.g. Project Byrdseed), publish a range of prepared differentiated curricula which may be adapted for use in the classroom or used to inspire teachers to develop their own. Many of these have been written in the United States and may need adapting for the Australian context. The findings here could therefore suggest that teachers are not aware of, or do not have access to such resources. This could also possibly explain the difference of opinion between the GES and classroom teachers about resources: it is highly likely that the specialist teachers were well aware of the wide range of resources available, and how they could be used as a basis to develop relevant differentiation.

Teachers' comments also indicated that while 'range of students' can be seen as a class management issue, this particular concern was further compounded by teachers' perceived expectations to provide for the needs of students who were achieving at lower levels. Findings from all three data sets suggested that teachers felt pressured to prioritise learning support for low achieving students over gifted

students. Relevant literature also describes pressures on teacher to provide for lower achieving students, at the expense of providing for gifted students (Farkas & Duffett, 2008; Jarvis & Henderson, 2012; Johnsen, 2013; S. M. Moon, 2009; Vialle & Rogers, 2012). One explanation could relate to findings that some teachers may perceive that specialised provision for gifted students is not necessary. Provision for lower achieving students appears to be considered more necessary, therefore it is understandable that teachers may feel that they need to give more attention to students with learning support needs. It is also possible that teachers' concerns about range are a reflection of their commitment to supporting the learning of students who struggle to meet the required level of outcomes.

A stronger and more concerning explanation could be the current educational standards movement, and pressures on teachers to be accountable for all students' performance on standardised tests. Achievement tests (NAPLAN) in reading, writing, language conventions and numeracy are currently mandatory across Australia for all students in Years 3, 5, 7 and 9, with the collated data about each school's performance being made publicly available. In theory, these tests help teachers to challenge high achieving students (Australian Curriculum Assessment and Reporting Authority, 2013), however research suggests that high stakes testing actually results in less differentiation in regular classes, as well as provision for gifted students (T. R. Moon, 2009; Moon et al., 2003; Rakow, 2008; Ryan & Weinstein, 2009; Scot et al., 2008). It is highly likely that teachers' concerns about student performance on these tests affects their disposition to differentiate learning activities in their classes. Teachers' concerns about range of students' abilities may thus be viewed in recognition of the complex and demanding pressures on teachers for underachieving students to meet essential standards, as defined by scores on these tests.

6.3.2 Identification Issues

Identification of gifted students was also identified as a significant issue by teachers in this research in two main areas:

- Potentially unidentified gifted students
- Identification methods

6.3.2.1 *Potentially Unidentified Gifted Students*

Comments by teachers indicated a lack of confidence in their ability to identify gifted students and an acknowledgement that there may be potentially unidentified gifted students in their classes. This is further supported by the quantitative data. The findings in this study with regard to numbers of gifted students identified appear to indicate a contradiction between reports of identified gifted students and the expected proportion of gifted students. The quantitative results here showed that one third of questionnaire respondents reported no formally identified gifted students in their class, while more than one fifth reported no gifted students at all, either formally or informally identified. These findings seem to suggest high proportions of classes without any gifted students. In contrast, the Gagné definition of giftedness (1995, 2004b, 2009), suggests that ten percent of students could be identified as gifted. Statistically, this would mean an average of two to three gifted students in each class. At face value, while the arbitrariness of a ‘ten percent’ definition of giftedness can be acknowledged, the findings then appear to suggest that more than one in five classes in W.A. include none of these ten percent of students. However, it seems highly improbable that twenty-three percent of classes actually include no gifted students at all, and therefore far more likely that there are gifted students in these classes who have not yet been identified.

Similarly to this study, the Classroom Practices Study (Archambault, Westberg, Brown, Hallmark, Emmons, et al., 1993) found that higher than expected proportions of teachers reported no formally identified gifted students (>37%), and no gifted students, either formally or informally identified (45% public schools, almost 30% private schools). The researchers concluded that these were relatively high percentages, and thus “may indicate that many schools are still without formal programs and identification procedures.” (Archambault, Westberg, Brown, Hallmark, Emmons, et al., 1993, p. 98). Similar results were found by Whitton in New South Wales (Whitton, 1997). It is possible that this may also be the case in the current study. Findings in other parts of this research add support to this explanation, indicating that most schools in this study may not have formal programs catering for gifted students in regular classes, or formal identification procedures. Identification was revealed as a potentially difficult issue for teachers in the findings from this research.

Identification of gifted students is a key issue in the literature, closely linked to the lack of consistent definition, and teacher understanding of giftedness (Bracken & Brown, 2008; Brown, Renzulli, Gubbins, Siegle, & et al., 2005; Elhoweris, 2008; Endepohls-Ulpe & Ruf, 2006). As acknowledged in the literature review, one of the challenges facing the field of gifted education, is a lack of agreed definition of the phenomenon. The current study also highlighted the lack of a shared definition and understanding of giftedness amongst classroom teachers. It appears then, that these may have an impact on identification of gifted students. Teacher understanding of giftedness, as a factor in low identification rates, is discussed further in the following section. Much of the literature on under-identification focuses on diverse student populations. Research has clearly and consistently shown that students from socially,

economically, culturally and/or linguistically diverse backgrounds are very commonly under-represented in gifted programs (Baldwin, 2005; Brighton et al., 2007; Elhoweris, Mutua, & Alsheikh, 2005; B. Harris, Plucker, Rapp, & Martínez, 2009; Lakin & Lohman, 2011; McBee, 2010; Sunday et al., 2014) This may be an explanation for low identification in this research: it is possible that gifted students of diverse backgrounds were less frequently identified. This study did not collect information about students' backgrounds, thus this may be a potential area for future investigation in the W.A. context. Girls are also commonly under-identified in the literature (Endepohls-Ulpe & Ruf, 2006), however this was not found in the current study.

6.3.2.2 Methods of Identification

The methods used to identify gifted students were also identified as an issue by the teacher participants in this study. Findings from the focus group discussions indicated that teachers were not confident in their knowledge about methods to identify gifted students. Again, this is supported by the quantitative data. According to findings in this study, teacher identification methods (teacher nomination, rating scales) were the most common means of identifying gifted students, closely followed by achievement methods (tests, student products, grades). Findings from the qualitative data however revealed difficulties with both of these methods. Additionally, the variance in both the quantitative and qualitative data in this research indicates that each school and/or teacher may use their own methods, and that there was a lack of common procedures for identifying gifted students.

This research revealed a strong theme of doubt in teachers' perception of their personal ability to identify gifted students. Analysis of focus group participants'

comments showed that these teachers, in their own words, were clearly not sure about what they should be looking for in identifying gifted students. This was supported by the GES and GEC observations of class teachers: analysis of their comments regarding identification also revealed strong concerns about teachers' ability to identify gifted students, which they commonly linked to teacher knowledge. Given that all of the focus group teachers, GEC and GES referred to concerns about teacher identification, this is taken to be a significant issue. Therefore, while the effectiveness of teacher identification of gifted students is still a controversial issue (Gagné, 1994), the evidence in this research seems to support the position that teacher identification may not be reliable as the primary means of identifying gifted students.

Similarly to this study, the literature on identification of gifted students indicates that teacher identification methods are widely used in practice (Archambault, Westberg, Brown, Hallmark, Zhang, et al., 1993; Schroth & Heifer, 2008), and suggests that there may be weaknesses in teacher identification of gifted students (Brighton et al., 2007; Curby, Rudasill, Rimm-Kaufman, & Konold, 2008; Geake & Gross, 2008; Hodge & Kemp, 2006; Siegle et al., 2010; Siegle & Powell, 2004). According to the findings here, teacher knowledge about giftedness appears to be the most plausible explanation for the concerns raised by teachers in this study about teacher identification of gifted students. The literature suggests that ability to identify gifted students depends on a secure knowledge and understanding of giftedness (Endepohls-Ulpe & Ruf, 2006; Miller, 2009; Neumeister et al., 2007). The findings in this research suggest however that teachers understanding about giftedness may not be sufficient, and that teachers themselves are unsure about their ability to identify gifted students. This explanation may be further supported by the information gathered in this study about teacher professional development in gifted

education. While research indicates that teacher ability to identify gifted students may be increased by specific professional development (Ashman & Vukelich, 1983; Dalia & Agnè, 2013; Hunsaker et al., 2010), it appears that this type of professional development is not widely available in Australia (Kronborg & Moltzen, 1999; Taylor & Milton, 2006, 2008; The Australian Senate, 2001). This may also be a factor in the low identification rates discussed in the previous section: if teachers are the main method of identifying gifted students, and teachers struggle to accurately identify, it is highly likely that there are students who are actually gifted but have not yet been identified by their teachers.

This study similarly revealed difficulties with achievement methods of identification. While the qualitative findings showed that achievement methods were the second most frequent means of identification, qualitative analysis of participants' comments revealed problems with the use of achievement methods. The findings in this study suggested that while teachers and administrators in schools may expect gifted students to self-identify through high achievement, they may also be unaware of the prevalence of underachievement in gifted students, making identification via student achievement unreliable. Relevant literature clearly suggests that gifted students will often not be engaged by the regular curriculum and, as a result, will underachieve if appropriate differentiation is not provided (Brighton et al., 2007; Persson, 2010; Tomlinson et al., 2003). In this situation, identification becomes a negatively circular proposition: if high achievement is seen as an identifier, an underachieving gifted student does not appear to be gifted, and is therefore not provided with challenging activities which would allow them to show as gifted or achieve at a high level (Endepohls-Ulpe & Ruf, 2006; Grubb, 2009). Given the infrequent use of differentiation strategies discussed in the previous chapter, it is

highly possible that appropriate differentiation may not be provided for most gifted students in regular classes. This creates a palpable concern about the use of achievement in the identification of gifted students.

6.3.3 Teachers' Understanding of Giftedness Issues

Three themes were revealed in the findings of this study regarding understanding of giftedness:

- Definitions or conceptions of giftedness;
- About underachievement; and
- Awareness of the need for provision.

6.3.3.1 *Definitions and Conceptions of Giftedness*

The quantitative findings in this study indicate that most teachers were either not aware of the definition of giftedness used by their school or school system, or reported that their school did not use a definition. The findings therefore suggest that provision for gifted students may be affected by teachers' lack of knowledge about definitions and conceptions of giftedness. Given that the Gagné definition (2009) is used by both the W.A. Department of Education and C.E.O.W.A. (which together include 90% of schools in W.A., and of the questionnaire sample), it appears then that many of these teachers are not aware of this endorsement, and are thus not able to use this definition to inform their practice. Findings from the qualitative data extend this assertion, suggesting that practising teachers held varying definitions of giftedness. This seems a clear indicator that W.A. teachers' understandings about giftedness may not be informed by a consistent definition.

While the field is not yet able to agree on a standard definition, there does nevertheless exist a large body of literature describing general conceptions which are widely understood to indicate gifted potential (as outlined in the Chapter 2). In contrast to this literature, the findings here indicate that teachers in schools do not hold a commonly shared understanding of giftedness. This supports findings in the research regarding classroom teachers' varying definitions and conceptions of giftedness (Archambault, Westberg, Brown, Hallmark, Emmons, et al., 1993; Davies, 2012; Diket, 2001; L. Lee, 1999; Lewis & Milton, 2005; Miller, 2009; Skuse, 2014). An extremely probable explanation for the similar findings here may be the lack of definition in the field, as discussed in the literature chapter: it appears that classroom practice reflects the literature in lack of a common definition. It also appears that the definition adopted by Western Australian education authorities may not be sufficiently known by classroom teachers to be of practical use, which could lead to the suggestion that teachers may not have been involved in professional development explaining the definition used in their school system. A further reason for these findings could be that the greater majority of teachers may not have been involved in professional development activities which allowed them to explore their own understandings of giftedness, or to become aware of the conceptions of giftedness described in the literature. This assertion is supported by findings in this research regarding teacher professional development (discussed in Section 6.3.4).

6.3.3.2 Underachievement

This research suggests that education professionals' understanding of achievement levels for gifted students may be an issue. The findings here indicate that regular class teachers may expect that the advanced cognitive abilities of gifted students would automatically translate into high achievement in a regular class

situation. It thus appears that school personnel may be unaware of underachievement issues for gifted students. Given the findings about norming behaviour, teacher understanding of norming and its link to underachievement could also be questioned. It further appears that teachers may link underachievement to gifted students' lack of effort or poor work habits. Researchers in gifted education have similarly found that teachers were commonly not aware of underachievement in gifted students (Gross, 1999; Seedorf, 2014), and more likely to view students as gifted if they were internally motivated and able to work independently (Brighton et al., 2007; Neumeister et al., 2007).

It seems the most likely explanation for these findings may be related to teachers' conceptions of a 'regular' class, and their understanding of potential achievement levels for gifted students. It is conceivable that teachers' expectations of student achievement in their 'regular' class may be influenced by ascribed grade/curriculum levels (which are closely related to chronological age), and that teachers may not be aware that gifted students are actually capable of achievement *several grade levels above* their age-grade. This assertion is further supported by the findings that teachers make minimal differentiation for gifted students, as discussed previously, which could suggest that teachers expect regular class activities would be sufficient for gifted students to demonstrate their abilities. Gagné's (2005) findings on achievement levels however, showed that one third of students were capable of achievement *at least one year level* higher than their current grade, extending to one student in every fifty capable of achievement *at least four grade levels* above their age-grade expectation. It could perhaps be hypothesised that that a similar investigation of the NAPLAN data would reveal similar levels of and ranges in ability.

An alternative explanation for a lack of awareness about underachievement issues is that teachers may not be aware that the high cognitive ability of gifted students actually makes it difficult for some of them to achieve, or even engage with the regular curriculum. In this study, the teacher participants' comments about work habits and achievement particularly gave a sense of not understanding why gifted students were (sometimes) not able to demonstrate high achievement on regular class curriculum. Another highly plausible explanation may be that acknowledgement of underachievement in high-ability students could be seen as personally challenging for some teachers. This consideration may contribute to teacher reasoning that if a gifted student is not achieving at a high level, the students' own work habits are the underlying cause: explaining underachievement as a student issue, rather than a teacher/provision issue may be less confronting for some teachers.

It is also possible that teachers may not be aware of the widening gap phenomenon (Gagné, 2005; J. J. Gallagher & Gallagher, 1994; Van Tassel-Baska, 2015). Indeed, 'closing the gap' has become a popular catchphrase in education circles in recent years. When applied in the context of closing the gap for an *individual* student, between the student's abilities and their learning opportunities, the concept of 'closing the gap' has some merit. From a gifted education perspective, this could also include underachieving gifted students, and therefore has much support. However, unfortunately, this term also seems to be applied in the context of 'closing the gap between low achieving and high achieving students', or *comparatively* between learners. From a gifted education perspective this is not logically possible, unless one restricts the opportunities of those capable of stratospheric achievement. Gagné (2005) strongly asserts the argument that if gifted students are provided with appropriate opportunities to develop their abilities, this gap should actually become

wider. While it would be seen as extremely unethical to restrict the learning opportunities of lower achieving students, underachievement of gifted students does not seem to garner the same level of understanding.

6.3.3.3 Need for Provision

A related issue revealed in the data here was teachers' lack of awareness about the need for specialised provision for gifted students. While some findings in this study support teacher awareness of gifted students' *need* for challenge, other findings also appear to indicate that teachers view specialised provision to meet this challenge as unnecessary. This contradiction seems to suggest that teachers expect the regular curriculum (perhaps with minimal modification) will provide sufficient challenge for gifted students, and provides further support for teacher expectations that gifted students will achieve highly on the regular curriculum, as discussed in the previous section. Significantly, qualitative findings also indicated that teachers may be unsure about their own ability to provide challenge for their gifted students. The findings in this research, which suggested that teachers lacked knowledge about key issues in catering for gifted students, therefore seem to be supported by qualitative findings regarding teachers' lack of understanding about underachievement, norming behaviour and need for provision.

An initial explanation for these findings could be teacher understanding of giftedness. Findings consistent across this research indicate that teacher knowledge about giftedness and gifted provision may be lacking, and provide a reasonable explanation for teachers' lack of awareness about gifted students' need for provision. This also supports the literature regarding teachers' knowledge about giftedness and gifted pedagogy (Davies, 2012; Dixon et al., 2014; Finley, 2008; Logan, 2011;

Schroth & Helfer, 2009). It appears then that practising class teachers may be, as Jody (GES5) states, in possession of no more knowledge about giftedness and gifted provision than the general public.

Possibly an even stronger and more concerning explanation may be teachers' pre-conceived beliefs about giftedness and gifted provision. Teacher understanding about the need for gifted provision has been shown to be significantly affected by their beliefs about giftedness. Research suggests that teachers commonly hold stereotypical beliefs about giftedness, which affect their perceptions about the need to develop both their understanding of giftedness, and ability to differentiate learning experiences to meet the learning needs of gifted students (Bain et al., 2007; Baudson & Preckel, 2013; Berman et al., 2012; Carman, 2011b; S. Gallagher, Smith, & Merrotsy, 2011; Geake & Gross, 2008; Lassig, 2009). This seems to be the most likely explanation for the level of teacher understanding about the need for provision found in this study, as well as the low level of differentiation as discussed in the previous chapter.

A significant finding of this study was that where a teacher had a personal connection to giftedness this appeared to create interest in and awareness of the need for specialised provision. Similarly to Jung (2014), it seems that contact with gifted persons increases teachers' understanding of giftedness, and awareness of the needs of these students. It is possible then that this contact affects personal beliefs, allowing for greater than stereotypical views, particularly in relation to achievement and need for provision.

6.3.4 Teacher Professional Development in Gifted Education Issues

According to the findings in this study, teacher professional development appears to be a highly significant issue affecting provision for gifted students in regular classes. This section addresses issues in both pre-service teacher education, and in-service professional development of practising teachers.

6.3.4.1 Pre-Service Teacher Education

A significant issue identified in this research was a substantial lack of pre-service teacher education about giftedness and gifted pedagogy. The majority of teacher participants in this study (75%) claimed that they had received no information about gifted students in their undergraduate course. The qualitative findings strongly supported this assertion: focus groups teachers indicated that their pre-service courses contained very little or no information about gifted learners; while the GES expressed their views that current pre-service courses also do not contain sufficient information which enables teachers to understand, or cater for gifted students. In effect, it appears that very little professional development in gifted education takes place in pre-service courses. These findings also clearly support previously discussed findings regarding classroom provision, teacher knowledge, and identification of gifted students. A further finding in this study, was that the way gifted education was included in pre-service courses may reinforce teachers' perceptions of gifted provision as 'extra work'. Given the findings discussed in previous sections of this chapter, Kate's (GES3) comment regarding inclusion of gifted education in the special needs unit, leading teachers to view gifted provision as *extra* rather than a normal part of everyday teaching, is significant. It thus appears that the findings in this research suggest that newly graduated teachers may be expected to face gifted students in their first years of teaching, without an adequate understanding of how to do so effectively.

The findings here strongly support the literature, which indicates that teacher education courses do not include sufficient information to enable graduates to be knowledgeable or confident in teaching gifted students (Archambault, Westberg, Brown, Hallmark, Zhang, et al., 1993; Berman et al., 2012; Curtis, 2005; Farkas & Duffett, 2008; A. M. Harris & Hemmings, 2008; Kronborg & Moltzen, 1999; Megay-Nespoli, 2001; Nowikowski, 2011). Reviews of teacher education courses in Australia suggest that most teachers have not had the opportunity to engage in gifted education in their pre-service course (Taylor & Milton, 2006, 2008; Whitton, 2006) (Appendix 2). Researchers have however clearly shown that pre-service teachers who participate in targeted gifted education experiences in their undergraduate course, develop more positive opinions, a greater awareness of the needs of these students, and increased ability to differentiate curriculum (Bangel et al., 2010; Chamberlin & Chamberlin, 2010; Hudson, Hudson, Lewis, & Watters, 2010; Jung, 2014; Plunkett & Kronborg, 2011). Current research into best-practice methods of including gifted education in undergraduate courses, indicates that positive outcomes are achieved through pre-service teachers engaging in actual teaching experiences with gifted students (Chamberlin & Chamberlin, 2010; Hudson & Hudson, 2012; Taplin, 1996; Watters et al., 2013), however these sources also acknowledge logistical difficulties in providing this exposure for all pre-service teachers.

Since all teachers will be expected to teach gifted students in most, if not all of their classes, it seems strange that gifted education is not mandated in pre-service teacher education courses. Perhaps the most plausible explanation for such findings lies in prevailing beliefs, both in the general community and amongst teachers, that specialised provision for gifted students is unnecessary, and that no specific

knowledge is required to teach them (as discussed in the previous section). A significant implication of the omission of gifted education in undergraduate courses is that it may actually perpetuate such myths. Graduating teachers and the teaching profession are thus allowed to hold on to misconceptions common in the wider community, assuming the training they have undertaken will enable them to teach gifted children.

The consistent lack of improvement in the status of gifted education in undergraduate courses, particularly in view of the Australian Senate recommendations (The Australian Senate, 1988, 2001) implies that this facet of teacher preparation is not seen as critical or even necessary by universities or employment authorities. The lack of gifted education in undergraduate teacher courses could also be due to competing priorities in these courses. Primary teachers are expected to be qualified to teach the full range of curriculum subjects, and the current policy of inclusion means that teachers are required to teach not only a wide range of student abilities, but also students with varying special needs, as well as those from culturally and linguistically diverse backgrounds. Teacher preparation courses are thus obliged to include experiences which develop pre-service teachers' understanding and abilities in all of these areas. Gifted education must then compete for time in lectures and classes and, if not seen as a priority, may not be given more attention in pre-service courses. Proponents of gifted education however claim that many gifted education strategies can be used successfully in general education environments, and that increased training in gifted education results in increased teacher ability to differentiate for all students (Dixon et al., 2014; George, 2005; Johnsen et al., 2002).

6.3.4.2 In-Service Professional Development Opportunities

If teachers do not gain sufficient information about gifted education in their pre-service experiences, perhaps this understanding is developed in their post-graduate professional development. The findings in this study however indicate that this may not be the case: newly graduated teachers' lack of exposure to gifted education does not seem to be improved during their teaching service. This research found that less than half of the teachers surveyed reported participation in district in-service courses in gifted education, with much lower rates for workshops, conferences or post-graduate study. Of greatest significance was the finding that one-third of teachers had not been engaged in any professional development in gifted education. Statistically, this could effectively mean that every third year, every gifted student could be in a class with a teacher who has had absolutely no training to meet their needs. For other special needs, it is doubtful whether this would be considered acceptable. In addition, investigation of post-graduate opportunities in gifted education shows that, in most states of Australia, university level courses for practising teachers are limited or non-existent (Plunkett & Kronborg, 2011; Taylor & Milton, 2006, 2008) (Appendix 2). The qualitative findings support this lack of professional development for practising teachers, and further suggest that gifted education may not be a priority for teacher professional development. It therefore appears that current teacher professional development does not provide sufficient opportunities for regular class teachers to develop the skills shown to be necessary to effectively cater for gifted students.

According to the findings of this study, it appears that the greater majority of teachers have not had the opportunity to engage in sufficient professional development to understand the needs of gifted students, or how to cater for them

effectively. Given that almost all regular classes include gifted students, and therefore all class teachers will teach gifted students during most years of their careers, this seems to be an unfair expectation for teachers. When one further considers that gifted students spend most, or even all of their time at school in regular classes, with teachers who apparently do not have specific training in how to understand or deal with their needs, these findings are of even greater concern.

It is clearly established in the literature that teachers with specific professional development in gifted education are better able to provide appropriate programs for gifted students, while those without such training struggle to do so. Researchers have consistently found that specific professional development in gifted education improves teacher attitudes towards the gifted (Hoogeveen et al., 2005; Lassig, 2009; McCoach & Siegle, 2007); efficacy in catering for them (Hansen & Feldhusen, 1994; Johnsen et al., 2002; Rowley, 2012; Sellers, 2008); and outcomes for gifted students (Hong et al., 2011; Horsley, 2012). Research has also clearly identified the need for improved in-service professional development opportunities for teachers (Avery & VanTassel-Baska, 2001; Koshy & Pinheiro-Torres, 2013; Nowikowski, 2011). In Australia, there appears to have been little change over the past twenty years, despite two Senate enquiries recommending increased professional development for teachers (Kronborg & Moltzen, 1999; Taylor & Milton, 2006, 2008; The Australian Senate, 1988, 2001).

It is perplexing that this situation is allowed to continue. Possible explanations appear to be similar to those discussed above in relation to pre-service teacher education. Beliefs about giftedness seem the most likely reason: while uninformed beliefs about gifted students and achievement prevail, teachers, school systems, or

perhaps society in general simply doesn't see the need for teachers to develop skills in teaching gifted students. It also appears that professional development in gifted education is not a priority for schools or school systems. The lack of teacher professional development in gifted education is a most likely explanation for lack of differentiation discussed in regard to research question one.

6.3.5 Summary: Research Question Two

The findings here indicate that teachers feel that several issues have an impact on their capacity to cater for their gifted students. Classroom management issues were the most strongly reported, with teachers claiming they lack time to spend with their gifted students during class, and linking timetabling, curriculum, resources and/or range of student concerns to this issue. Identification of gifted students was also shown to be an issue, with a large proportion of gifted students potentially unidentified. Additionally, the main methods of identifying gifted students revealed problems in regard to teacher understanding of giftedness. Teachers also identified their understanding of giftedness as an issue affecting regular class provision. It appears that teachers may lack understanding of definitions of giftedness, as well as the relationship between underachievement and the need for appropriate provision. Professional development in gifted education was identified by the teachers as a highly significant issue, with the majority of teachers reporting little or no professional development in this area.

6.4 Research Question Three

What do teachers suggest as some possible solutions to these issues?

While the data discussed in the previous two sections revealed difficulties and possible issues for teachers in catering for gifted students in regular classes, this research also explicitly asked both classroom teachers and gifted education specialists to suggest solutions to the issues teachers identified. The aim was to listen to voices from the field regarding means which may assist teachers to better cater for their gifted students. Thus the findings here also provided evidence of potentially successful solutions from these teachers' point of view. The purpose of this section is therefore to provide a synthesis of these findings, and discuss them in relation to research questions three and relevant literature.

To address this question, data from questionnaire respondents' comments, as well as data from the focus group discussions and GES interviews, were gathered and analysed according to procedures described in chapter three. Teachers and GES were asked to suggest possible solutions to the issues they had identified. The solutions offered were matched as far as possible to the four key issues identified in the previous section. Two areas regarding possible suggestions for overcoming three of these issues emerged from the findings in this study:

- Potentially successful classroom strategies
- In-service teacher professional development

6.4.1 Potentially Successful Classroom Strategies

Classroom management was identified as a key issue by teacher participants in this research. In response to this, participants made a number of suggestions about solutions that linked to their concerns about classroom management. These involved

strategies which participants identified as potentially successful for teaching gifted students:

- Negotiated/flexible curriculum and choice strategies
- Independent research/project based learning

6.4.1.1 Negotiated/Flexible Curriculum and Choice Strategies

Although classroom management issues were strongly suggested by teacher participants in this research, the findings also suggest potential solutions to these issues, in the form of flexible curriculum options and negotiation of learning activities with students. The theme of negotiated/flexible curriculum, developed *with students* via choice strategies, was shown in findings from all three qualitative data sources. Both regular class teachers and GES identified a flexible curriculum as a potential solution to management challenges, claiming it allowed flexible use of time, as well as increasing opportunity to cater for the range of students in regular classes. The GES' comments were particularly strong in recommending choice strategies as essential in gifted provision.

As discussed in the literature review, choice strategies and negotiation of learning activities are well-recognised means of differentiating for gifted students (Friedman & Lee, 1996; Gentry, 1999; Houghton, 2014; Lambert, 2005; Maker, 2005, 1993; Renzulli, 1997; Rosselli, 1993; Ryser & Johnsen, 1996; Tomlinson, 2004; Tomlinson et al., 2003; Walker et al., 1999). Research in gifted education has shown that negotiation of learning experiences with gifted students improves intrinsic motivation and engagement, thus reducing underachievement (Caraisco, 2007; Colangelo et al., 1993; Gentry et al., 2002; Hughes, 1999; Kanevsky, 2011; Kanevsky & Keighley, 2003; Willard-Holt et al., 2013; Zentall et al., 2001). One possible

interpretation of the findings here could be that teachers are aware of these aspects of learning for gifted students. It could also be suggested that teachers recognise the important nature of strategies which involved choice in providing differentiated curricula.

6.4.1.2 Independent Research/Project-Based Learning

Independent research or project-based learning was also identified by participants as a possible solution, and was often described as used in conjunction with choice strategies. Findings indicated that research was a popular strategy, and that teachers were able to suggest various forms of research or project-based learning as means of differentiating for gifted students. Teacher recognition of research as a relevant strategy to differentiate learning for gifted students indicates an understanding that research provides a basis for providing challenge at an individual level, as well as offering a place for choice strategies to be implemented. This is also reflected in the literature, where independent research is strongly identified as a relevant means of differentiating learning for gifted students (Bishop, 2000; Housand & Housand, 2012; Kanevsky, 2011; Repinc & Juznic, 2013; Rowley, 2008; van Deur, 2011).

The common element in these two strategies which were thought to be successful appears to be the project-based context, and negotiation of tasks with students, which allowed for a diversity of interests, levels of ability and thus increased intrinsic motivation. Project based learning is characterised by in-depth, authentic activities, which are as close as possible to those engaged in by participants in the real-world discipline. Tasks need to be carefully planned for students to research or investigate a problem of personal interest. It was suggested in this study that project-

based learning/negotiated tasks encourage student-directed learning, allowing students to make choices about their activities and products. Some degree of student choice in learning activities appears a key ingredient in engaging gifted students. The context of project-based learning allows activities to be negotiated between student and teacher, involving discussion about goals, methods of inquiry and activities, which are then set by mutual agreement. This negotiation allows a high degree of individual learning with respect to level and interests, which then enables provision at an appropriate level for individual gifted students.

6.4.2 In-Service Teacher Professional Development

A second key area suggested by research participants as possible solutions to teachers' issues in gifted provision involved several ideas for professional development. Given findings in this study, and in the wider literature, regarding teacher professional development in gifted education, discovering effective ways to provide this for teachers is an important issue (Geake & Gross, 2008; Jarvis & Henderson, 2012; Rowley, 2012). While this study exposed some concerning trends in teacher knowledge about giftedness and gifted pedagogy, it did however reveal some positive suggestions for teacher professional development. Focus group teachers discussed several professional development strategies which they thought would assist them in improving their abilities to cater for their gifted students. The GES also offered suggestions as to potentially successful professional development strategies for the teachers they worked with. Three strategies emerged from the data:

- Improved access to information about giftedness and gifted pedagogy;
- Collaboration with professional colleagues; and
- Practical work with gifted students.

6.4.2.1 Improved Access to Information about Giftedness and Gifted Pedagogy

Findings from both focus group teachers and GES suggested teachers require greater access to information about gifted students and their learning. This need for increased information for teachers was strongly supported by findings in other areas of this study, and by other research (Bain et al., 2007; Carman, 2011b; Carrington & Bailey, 2000; Davies, 2012; A. M. Harris & Hemmings, 2008; Megay-Nespoli, 2001; Plunkett & Kronborg, 2011; Siegle et al., 2010). These findings indicated that teachers perceive they needed to ‘know more’ to be able to cater for their gifted students. One interpretation could then be that these teachers are suggesting that they have not yet gained sufficient information to feel confident in their abilities to cater for gifted students. A second and very likely interpretation could be that teachers don’t know where information about giftedness/gifted pedagogy is available. While information about gifted education is actually readily obtainable, these findings suggest that teachers may not be aware of how to access this information. A further interpretation could arise from teachers’ perceptions of gifted provision as ‘extra work’, as findings in other areas of this research showed that teachers may not consider gifted education as a central part of their role. It is possible in this case that teachers feel that they don’t have time or capacity to access information about gifted education, against the other demands of their classroom role.

6.4.2.2 Collaboration with Professional Colleagues

In addition to information, findings suggested that opportunities to collaborate with professional colleagues would be of value in developing teachers’ capacity to cater for their gifted students. Three forms of collaboration were suggested: networking; co-planning learning activities with colleagues; and longer term collaboration. With regard to networking, it seems to be the exchange of ideas, and

the opportunity to consult and discuss with others which participants suggest would support teachers' provision for gifted students. Suggestions about collaborative planning appear to acknowledge the time and effort required to plan 'rich' tasks and activities which allow learning at multiple levels. These findings indicate that teachers require more than just information to support their development in teaching gifted students. It was also found that that longer term collaboration, perhaps involving mentoring with more experienced colleagues, may assist teachers to cater for their gifted students. The findings here seem to suggest that teachers feel they need greater assistance in understanding and implementing differentiated curriculum.

The findings here are reflected in the literature, which recommends that teachers need extended professional development, supported by mentoring in the classroom, to be able to differentiate sufficiently for gifted students. It has also been shown that this type of professional development is more successful than professional development solely by information type sessions, which have minimal impact in classrooms (Gubbins et al., 2002; Hurford, 2013; Johnsen et al., 2002; Latz, Neumeister, Adams, & Pierce, 2008; Page, 2000; Van Tassel-Baska, 1986; Van Tassel-Baska & Johnsen, 2007; Van Tassel-Baska et al., 2008; Wood, 2009). Westberg and Archambault (1997) found that collaboration with colleagues (either at their grade level or with district curriculum specialists) allowed teachers to provide more academic challenge for their gifted students.

Thus one interpretation of the findings regarding collaborative professional development strategies could be that research participants were aware that information sessions can be difficult to translate into classroom practice. It is possible that they have attended such sessions and experienced challenges in translating the

information presented into their classroom practice. Another interpretation of the findings in regard to collaboration for teachers is possibly that teachers feel unsupported in catering for gifted students by themselves in their regular class. This interpretation is reinforced by other findings in this study, which indicate that teachers may experience a sense of isolation, and feel that they need more in-class support and/or assistance from their school administration or system. A third possible interpretation could also relate to teachers' confidence in their level of knowledge about catering for gifted students. If teachers are unsure about their understandings in this area, as suggested by other findings in this research, it is possible they would find discussion and working alongside colleagues reassuring.

6.4.2.3 Practical Work with Gifted Students

Findings also suggested that 'hands-on' experiences in teaching gifted students would develop teachers' capacity in this area. Research participants' comments gave a sense that this would allow teachers to develop an understanding of the learning characteristics of gifted students through focused teaching of gifted students. This approach is strongly supported in recent research efforts (Bangel et al., 2006; Chamberlin & Chamberlin, 2010; Hudson & Hudson, 2012; Karp, 2010; Taplin, 1996; Tomlinson et al., 1995; Watters et al., 2013), with Bangel, Moon and Capobianco (2010), for example, finding that, "Participants perceived an increase in their understanding of the needs and characteristics of gifted students through participation in the interventions as well as increased confidence in their general teaching abilities" (2010, p. 209).

One interpretation of the findings in this research could be participants' understanding that this allows teachers to gain knowledge about gifted students from a

practical situation, providing a bridge between information style professional development and classroom practice. This reflects wider literature, which certainly suggests that this model of teacher professional development creates an authentic, applied learning situation for teachers to develop their understanding of giftedness and gifted pedagogy (Bangel et al., 2006; Hudson & Hudson, 2012; Taplin, 1996; Watters et al., 2013). A further interpretation could be related to issues revealed in this research about the range of students affecting provision for gifted students. Reducing the range of students in the class may allow teachers to focus on the gifted learners' needs, while they develop the knowledge and skills required to cater for them. If, as discussed in challenge strategies teachers appear to have difficulty in judging the level of challenge needed by gifted students, explicit teaching of gifted students allows teacher the opportunity to develop appropriate understandings of their learning needs.

6.4.3 Summary of Research Question Three

This research found that teachers were able to make several practical suggestions to address issues in providing for gifted students. Such findings enable positive interpretations of the issues involved in catering for gifted students. The findings in this research indicate that teachers perceive they need more information and support to be able to cater for their gifted students. In addition to information access, research participants suggested that practical assistance in their teaching would be of value in developing their capacity to cater for their gifted students. All of these are strongly supported in the literature and worthy of further consideration.

6.5 Chapter Summary

The literature in gifted education contends that factors external to the individual have a significant impact on the process of developing gifted abilities into talented achievement/performance. This study explored the external factors of provision and teachers, in particular regular class provision via differentiation strategies, and issues for teachers in offering appropriate learning experiences for gifted students. With regard to provision, the evidence in this research suggests that little differentiation occurs for gifted students in regular classes. While teachers report that they are aware of and use appropriate strategies, it seems that these may not be used in a manner which provides appropriate learning opportunities for gifted students. According to these findings, the main issues affecting provision for gifted students appear to be managing a classroom for diverse learning abilities, and teacher knowledge about giftedness, specifically identification, understanding of giftedness, and professional development. Recurring themes in the findings for all three of the research questions were teachers' perceptions of an extensive workload, and of provision for gifted students as 'extra work'.

Chapter Seven

Conclusions and Recommendations

7.1 Introduction

The present study was designed to explore the use of differentiated strategies, and the issues and solutions identified by teachers in provision for gifted students in the local context. The purpose of this chapter is to draw conclusions for each of the three research questions, and to provide some recommendations for future practice and research.

7.2 Research Questions

1. What instructional strategies do teachers use to differentiate learning experiences for gifted students in regular classrooms?
2. What are some of the issues identified by teachers affecting the provision of differentiated learning experiences for gifted students in regular classrooms?
3. What do teachers suggest as some possible solutions to these issues?

7.3 Conclusions - Research Question One

What instructional strategies do teachers use to differentiate learning experiences for gifted students in regular classrooms?

The findings in this study show that teachers reportedly use appropriate instructional strategies to differentiate curriculum for gifted students. Of the dimensions of differentiation explored here, teachers claimed they were using strategies to demonstrate all five dimensions (challenge, choice, thinking skills, curriculum modification, and grouping). It is therefore possible to conclude that most regular class teachers in this study were aware that their gifted students need more

challenging learning experiences, and attempt to provide these through the use of suitable strategies.

However, there appear to be two main issues with teachers' reported use of instructional strategies to differentiate for gifted students: lack of frequency; and teachers' level of understanding about gifted learning. The first issue shown in this research was the infrequent use of differentiation strategies. While teachers were aware of, and used a wide variety of appropriate strategies, it was also shown that these were not used frequently enough to provide effective differentiation for gifted students. There is a clear mismatch between recommended strategy use in the literature, and the results shown in this study. While research on the learning needs of gifted students shows differentiation is required in all learning experiences, most strategies in this research were used once a week or less. According to relevant research, this is not adequate to provide stimulating learning experiences for gifted students. The lack of frequency shown here suggests that teachers may be unsure of how to go about using effective strategies to differentiate for gifted students.

A second issue seems to be teachers' level of understandings about the learning needs of gifted students, revealed in evidence suggesting low frequency, or inappropriate use of particular strategies (or groups of strategies) explored in this study. While research suggests that adjusting the pace of learning is a critical strategy to differentiate for gifted students, findings in this study revealed markedly infrequent use of this strategy, with over one-fifth of teachers reporting that they never adjusted the pace of learning for their gifted students. Open-ended activities and student research strategies were reported as used more frequently, however the evidence suggests that these were still not used with sufficient frequency, and that they are most

likely not used at an appropriate level for gifted students. Findings in regard to curriculum compacting strategies suggest that substitution may be being used on an ‘ad hoc’ basis, rather than co-ordinated with pre-testing and/or planned elimination of mastered material. Ability grouping was explored in three forms in this study: grouping within the regular class, cross-setting with same-grade class, and grouping with older students. None of these were shown to be used frequently. Mixed-ability grouping appears to be the preferred grouping option in regular classes, however this suggests that teachers may not be aware of the difficulties for gifted students in this learning situation. Additionally, it was shown that teachers find value in gifted students teaching others, which may indicate lack of understanding of the learning needs of gifted students. It is therefore possible to conclude that while teachers do use appropriate strategies to differentiate learning experiences for gifted students in regular classes, these strategies may not be used in a manner which creates effective learning experiences for gifted students, and that teachers’ understandings of the learning needs of gifted students may be a significant factor contributing to this lack of effective differentiation.

7.4 Conclusions: Research Question Two

What are some of the issues identified by teachers affecting the provision of differentiated learning experiences for gifted student in regular classrooms?

This research shows that teachers experience challenges in implementing a differentiated curriculum for gifted students in regular classes. Classroom management issues were found to negatively affect teachers’ provision for gifted students, suggesting that teachers’ strategies for classroom management are not able

to support provision for gifted students in the regular class context. On the surface, it therefore appears that this is a major cause of lack of differentiation for gifted students.

However, qualitative analysis of comments from both classroom teachers and GES revealed several underlying factors which seemingly contribute to the classroom management issues raised by teachers. While teachers claim that issues of time, resources, student diversity, or numbers of students negatively influence their ability to cater for gifted students, it seems that the capacity to deal effectively with these aspects of classroom management stems from more fundamental issues. According to the findings in this research, these include perceptions of curriculum and ‘regular class’, concerns with lower achieving students, understanding of giftedness, and lack of teacher professional development in gifted education.

7.4.1 Perceptions of Curriculum and ‘Regular Class’

At a broad level, this research shows that teachers’ perceptions of curriculum have a significant impact on provision for gifted students. Findings in several areas revealed teachers’ views of gifted provision as ‘extra work’, rather than a different way to manage learning experiences. The implication is that teachers plan a ‘regular’ curriculum for their ‘regular’ class, and *subsequently* plan activities for their gifted students as an ‘add-on’, rather than planning a differentiated curriculum which allows for learning at multiple levels simultaneously. These findings further suggest that teachers perceive curriculum as a standard concept relating to a ‘normal’, grade-level progression, and view their role as presenting an average, grade-level curriculum, whereby catering for diverse learning needs becomes ‘extra’ to this role. An initial

conclusion of this research is therefore that teachers view gifted provision as extraneous to their primary role.

Effective differentiation for gifted students (and for all other students) requires teachers to conceptualise curriculum as applied to individual learning needs, rather than as a standard concept. This standard vision of curriculum seems to extend from a concept of standardised education in a ‘regular class’ by age level, which provides a less complex means to view classroom practice. While such standardised concepts allow shared meanings and facilitate communication, the concept of a ‘regular class’ needs to be seen as an overgeneralisation; relevant in the abstract rather than reality. Teachers perhaps need to be encouraged to recognise that the concept of a regular class, where all children of the same age learn at the same level, is actually a fallacy: it doesn’t exist in the real world. This change of philosophy may assist teachers in developing a more positive disposition to implementing differentiated curricula as standard practice. One possible conclusion could thus be that teachers’ current perceptions of curriculum and ‘regular classes’ have a significant negative impact on provision for gifted students. It could also be concluded that teachers may require more assistance in understanding concepts of differentiated curriculum and diverse learning needs.

7.4.2 Concerns about Lower Achieving Students

Findings in this research suggest that the wide range of student abilities present in regular classes creates class management issues for teachers. Combined with the findings indicating that teachers feel pressured to give attention to their lower achieving students, this suggests that provision for gifted students may be a lesser priority. It appears that teachers may feel a greater responsibility to provide for the

learning needs of lower achieving students, than gifted students. This research links teachers' concerns about a standardised national curriculum with teachers' understanding of how to differentiate for the range of students in their classes. Wider research also links concerns about high-stakes testing with reducing teacher capacity and willingness to differentiate learning experiences in their classes. It is easily conceivable that if teachers are held publicly accountable for their students' test results, they may feel the need to make greater efforts to ensure that lower achieving students are able to meet benchmark standards. It appears that differentiation for gifted students may be negatively impacted by a combination of a wide range in classes and expectations about supporting the learning of lower achieving students.

7.4.3 Understanding of Giftedness

More specifically to giftedness, the findings in this study indicate that teachers may lack understanding of the learning needs of gifted students. In particular, it appears that teachers' understanding of essential concepts such as characteristics of giftedness, identification methods, underachievement, and differentiation strategies are not sufficient to be able to cater for gifted students effectively. While it seems teachers understand gifted students' need for challenge, it also appears that they *first* expect gifted students to display competence in basic curricula *before* allowing them extension. These findings suggest that teachers may not understand engagement issues for gifted students: that a gifted student is unlikely to engage with basic tasks, become bored, and therefore highly likely to underachieve. It also appears that teachers may lack understanding of the scope of giftedness: that a gifted student functions cognitively like a student *several years older*, hence merely adjusting regular curricula will not provide appropriate learning. Additionally, this research shows that this level of understanding may be related to a lack of exposure to information about

gifted students in both pre-service courses and in-service professional development (discussed further in the following section). It is possible to conclude that teachers may lack sufficient understanding about giftedness and gifted pedagogy, and that this could be a significant issue in enabling them to differentiate learning experiences for gifted students.

7.4.4 Teacher Professional Development in Gifted Education

This research also clearly indicates that teachers' professional development in gifted education is still extremely scarce, to the extent of being almost non-existent. Findings across this research demonstrate a critical need for increased professional development in gifted education, both at pre-service and in-service levels. If gifted students are to be placed in regular classes, all teachers need adequate pre-service education in how to cater for these students. It is not appropriate for teachers to be expected to cater for gifted students without adequate preparation: upon graduation, every teacher should be able to teach gifted students. It is also not appropriate for ten percent of students to consistently have teachers who may not know how to cater for them. Greater in-service professional development for practising teachers would allow opportunities to develop the understandings needed to confidently cater for their gifted students.

7.5 Conclusions: Research Question Three

What do teachers suggest as some possible solutions to these issues?

This research provided evidence of teachers' views on possible solutions to the issues raised which affect provision for gifted students. Teachers suggested that flexible curriculum options, which are negotiated to individual students' needs and interests, may provide solutions for classroom management issues. Options for

professional development, which may address the three issues identified in the research related to teacher knowledge (identification, professional development and teacher understanding of giftedness), were also suggested. Teachers felt that increased access to information about giftedness and learning strategies would improve their knowledge about providing for gifted students. Collaboration with colleagues was suggested as a strategy to support teachers in implementation of differentiated learning experiences. Practical work with gifted students was suggested by teachers who were more experienced in providing for gifted students as a means of exposing regular class teachers to a cohort of students with gifted abilities, and allowing the generation of knowledge in an applied setting. All of these professional development options are supported in the literature.

7.6 Overall Conclusions

The findings here suggest that a differentiated curriculum for gifted students is difficult for teachers to implement, and that teachers are concerned with management and knowledge issues in attempting to provide for their gifted students. It seems then, that this study supports previous research on provision for gifted students. Findings from this research suggest that while teachers in Western Australia appear to be aware of appropriate strategies, they are challenged in applying these for their gifted students, and little differentiation for gifted students occurs in the regular class setting. With regard to the differentiation strategies used for gifted students, this research did not reveal any new information: findings support the available evidence suggesting a lack of differentiation for gifted students in regular classes. It appears then that previous research may not have been effective in supporting teachers to differentiate for gifted students in their regular classes, and that differentiation for

gifted students continues to be a challenging concept to understand and implement in regular classes. This study shows that this also applies to the WA context.

Additionally, this study explored teachers' views on providing differentiation for gifted students. The results indicated that teachers are concerned with class management issues, and knowledge about giftedness and differentiation. Both quantitative and qualitative findings revealed information regarding teachers' concerns about classroom management issues such as time, resources and range of students. Teacher knowledge issues included identification of gifted students, understanding of giftedness, and professional development in gifted education. This is consistent with previous research, which has also found that teachers are concerned with both classroom management and knowledge issues.

Where this study can perhaps offer new insights, is in the teachers' perceptions about the pressures of their workload, and their views on differentiation, which impact on their capacity to provide differentiation for gifted students. Teachers' beliefs of gifted provision as extraneous to their primary role suggests that providing for gifted students may not be seen a priority, or even as relevant in a regular class. The findings in this study indicate that the level of differentiation which occurs in regular classrooms may be significantly impacted by these perceptions.

In recognizing this aspect from the available literature, this study specifically sought teachers' perspectives on what would work for them. Teachers in this study were able to suggest potential solutions for these issues, including developing flexible, project-based curricula negotiated with students, and professional development which involves access to information, collaboration with colleagues, and practical

experiences with gifted students. Several recommendations for addressing the findings in this research are outlined in sections 7.9 and 7.10.

7.7 Revised Conceptual Framework

The conceptual framework has been augmented to illustrate the findings and conclusions from this study (shown in Figure 5). Once again giftedness is shown on the left of the diagram. This research investigated two external factors affecting gifted development: teachers and provision.

In regard to regular class provision, this research indicated that while teachers were aware of instructional strategies for differentiation, these were not frequently used for gifted students in regular classes. This is shown by a circle surrounding the instructional strategies (represented via the five dimensions of differentiation - challenge, thinking skills, choice, curriculum modification and grouping).

The teacher factor was investigated via issues affecting provision, and potential solutions for these issues, from the perspective of regular class teachers. This research found that teacher issues affecting the provision for gifted students can be seen in two main themes, and are represented here in two clusters: class management which includes the issues of time, resources, and range of students; and teacher knowledge which includes the issues of identification, understanding of giftedness, and professional development in gifted education. Teachers' beliefs and attitudes, while not specifically explored in this research, were identified in the literature and are included in this framework. These are shown linked to the two main clusters, as it is expected that teacher attitudes and beliefs would influence both class management and teacher knowledge issues.

Possible solutions, suggested by regular class teachers in this research, are shown linked to the relevant issues. Classroom strategies are shown linked to the classroom management issues; and professional development strategies are linked with the teacher knowledge issues.

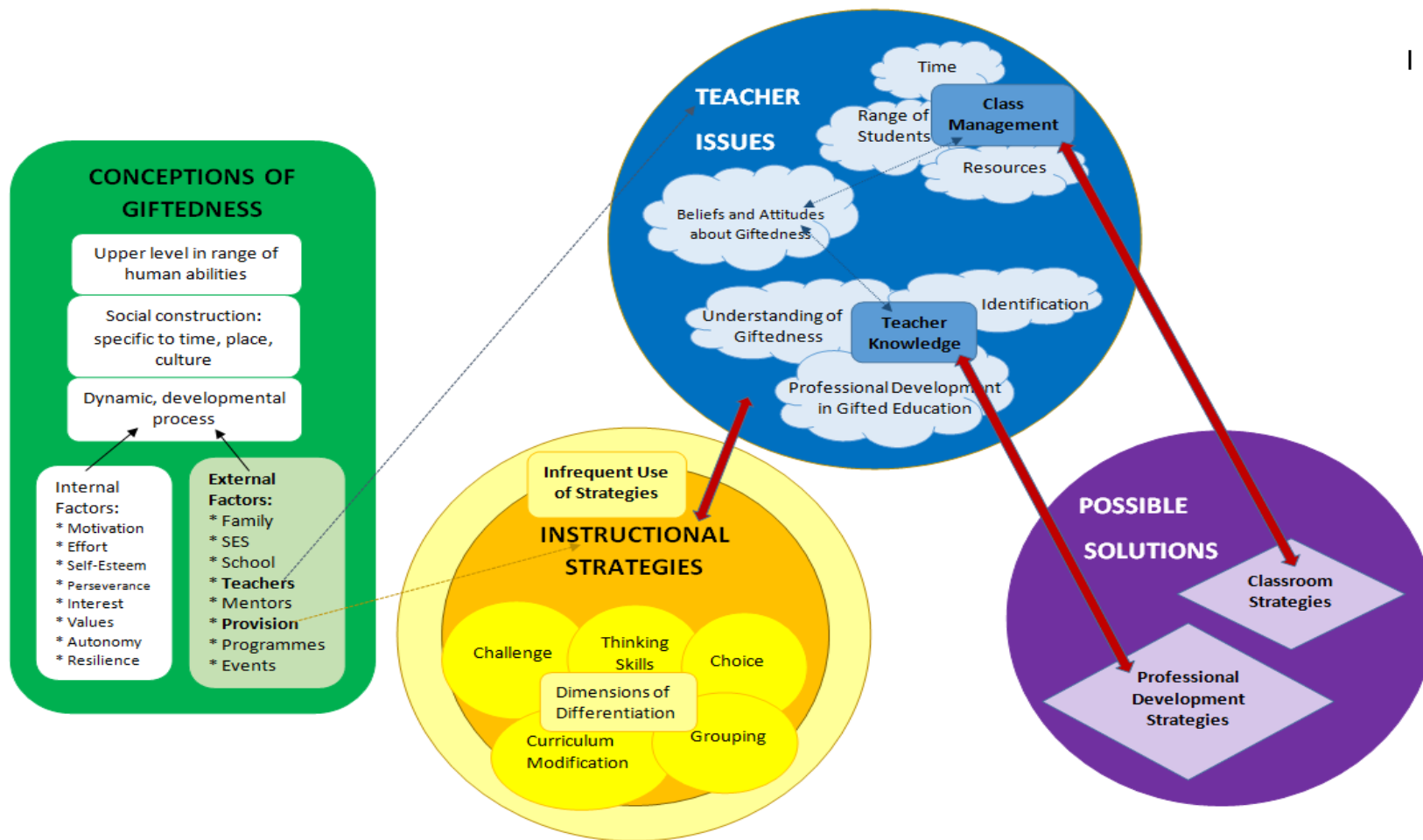


Figure 5. Revised Conceptual Framework

7.8 Limitations of the Research and Generalisability

The generalisability of these results is subject to certain limitations. The most important limitations lie in the fact that this research was conducted within WA, which may restrict the ability to make broader generalisations from the study. The systematic stratified sampling and return rate of the questionnaire enables confidence that this sample was representative of primary schools throughout WA, from all three sectors (government, Catholic and independent), and both rural and metropolitan locations, therefore the recommendations could be seen to apply in this context. In setting the research in WA, the scope of this study was also limited in terms of the population size available for sampling. In comparison to larger studies, the actual sample sizes for both phases of this research were quite small. Due to these limitations, it is perhaps not possible to generalise these findings beyond WA. However the findings here are also consistent with those found in other settings and can be seen to add significant information to the body of knowledge regarding teachers' perceptions of provisions for gifted students.

By geographical necessity, data collection for the focus groups and GES interviews was limited to the Perth metropolitan area. The project used a convenience sample in interviewing GES who were available during the study. While it must be recognised that these may not be representative of all GES, there was considerable commonalities in the data generated from these interviews, and consistency both with other data collected in this study and with wider research.

7.9 Recommendations for Practice

According to the findings in this study, regular class teachers struggle to implement a differentiated curriculum for gifted students. It appears then that teachers require more information and support in order to be able to cater effectively for their gifted students.

Recommendations for practice include:

Improve teacher knowledge of giftedness and gifted pedagogy via increased professional development.

To provide effectively for their gifted students, this research indicates that teachers need greater information about characteristics of gifted learners, identification strategies, available resources, as well as understanding and implementing differentiated curriculum. With respect to pre-service teacher education, increased information about gifted education needs to be included for all teachers during their undergraduate course. Less specific to giftedness, but highly relevant to gifted provision, undergraduate courses could further assist pre-service teachers to see *all* classes as diverse, rather than homogeneous, and develop a view of curriculum as a differentiated rather than a standardised concept.

Suffusing a mindset of diversity through all units of undergraduate courses, rather than just in special needs units, may provide teachers with opportunity to develop a philosophy of differentiation. Practising teachers also need improved access to ongoing professional development in gifted education, during their teaching career. Suggestions from this study included greater access/encouragement to knowledge based professional development and opportunity to teach gifted classes.

Provide teachers with direct support to implement differentiation in regular classrooms.

This study suggests that increased knowledge-based professional development alone will not be sufficient to improve provision for gifted students, and that teachers need explicit support to implement the knowledge and understandings gained through professional development into their classroom practice. Increased classroom support for teachers to develop and implement differentiated curricula in their regular classes therefore seems valuable. Teachers in this study

specifically suggested that they would find it useful to be able to collaborate with colleagues *while* developing their skills in differentiating learning for gifted students. This suggestion has wide support in relevant literature (Davies, 2012; Gentry & Keilty, 2004; Hurford, 2013; Lassig, 2009; Page, 2000; Riley & Sturgess, 2005; Tieso, 2004; Van Tassel-Baska, 1986; Van Tassel-Baska & Johnsen, 2007).

This recommendation could perhaps extend to increased access to, or possibly even mentoring from, colleagues with experience in differentiating curriculum for gifted students. Expanding the role of GES teachers may also be useful, to make them more readily available to assist regular class teachers within their classes during the implementation phase following professional development. GES could also review available curriculum units for gifted students, adapt these for use in W.A., and assist teachers in learning to use and further adapt these to the needs of individual gifted students.

7.10 Recommendations for Research

Examine use of differentiated strategies/curricula for gifted students in regular classrooms.

This study collected data about use of classroom strategies via teacher self-report. Further research to examine teachers' actual use of strategies in the local context could be recommended, perhaps via observation studies or action research. Tools such as the Classroom Observation Scale (COS-R) (Van Tassel-Baska, Quek, & Annie Xuemei, 2007; Van Tassel-Baska et al., 2008), or Hong et al. (2006) Instructional Practices Questionnaire, may be useful in assisting teachers to review their use of differentiation strategies with gifted students.

Further exploration of inclusion of gifted education in teacher pre-service courses.

The need for increased pre-service professional development in gifted education was strongly highlighted in this research. While there has been considerable recent research in regard to means of including gifted education in pre-service courses, it appears that this has not increased. Further research is required to ascertain viable means of increasing the information about giftedness and gifted pedagogy in teacher pre-service courses, and to identify possible reasons for the lack of change in inclusion.

Explore appropriate methods for supporting teachers to implement differentiation strategies in classrooms.

As classroom support for teachers is recommended for practice, further research efforts would need to be directed as to how best to achieve this. Collegiate support and mentoring were suggested as practical means of classroom support for teachers in differentiating learning for gifted students. Further research efforts would need to advance the understanding of professional support which assists teachers to explore their own solutions to catering for gifted students.

Investigate the impact of classroom practice on outcomes for gifted students.

It would be useful to examine whether, and to what degree, the recommendations in this study improve student outcomes. Further research is needed to investigate the efficacy of differentiation strategies, teacher professional development, and classroom support for teachers on the outcomes for gifted students, in terms of both achievement and socio-affective development.

References

- Adelson, J. L., & Carpenter, B. D. (2011). Grouping for achievement gains: for whom does achievement grouping increase kindergarten reading growth? *The Gifted Child Quarterly*, 55(4), 265. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/898532891?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Grouping+for+Achievement+Gains%3A+For+Whom+Does+Achievement+Grouping+increase+Kindergarten+Reading+Growth%3F&title=The+Gifted+Child+Quarterly&issn=00169862&date=2011-10-01&volume=55&issue=4&spage=265&author=Adelson%2C+Jill+L%3BCarpenter%2C+Brittany+D>
- Adelson, J. L., McCoach, D. B., & Gavin, M. K. (2012). Examining the effects of gifted programming in mathematics and reading using the ECLS-K. *The Gifted Child Quarterly*, 56(1), 25. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/920997685?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Examining+the+Effects+of+Gifted+Programming+in+Mathematics+and+Reading+Using+the+ECLS-K&title=The+Gifted+Child+Quarterly&issn=00169862&date=2012-01-01&volume=56&issue=1&spage=25&author=Adelson%2C+Jill+L%3BMcCoach%2C+D+Betsy%3BGavin%2C+M+Katherine>
- Agne, K. J. (2001). Gifted: the lost minority. *Kappa Delta Pi Record*, 37(4), 168-172. Retrieved from http://0-vnweb.hwwilsonweb.com.lochbuie.lib.ac.cowan.edu.au/hww/shared/shared_main.jhtml;jsessionid=CD5MQD4FPOQ2XQA3DIMCFFWADUNBIIV0?requestid=45447
- Al-Lawati, F. A. K., & Hunsaker, S. L. (2007). Differentiation for the gifted in American Islamic schools. *Journal for the Education of the Gifted*, 30, 500-518,535-537.
- Alloway, T. P., & Elsworth, M. (2012). An investigation of cognitive skills and behavior in high ability students. *Learning and Individual Differences*, 22(6), 891-895. doi: <http://dx.doi.org/10.1016/j.lindif.2012.02.001>
- Ambrose, D., Van Tassel-Baska, J., Coleman, L. J., & Cross, T. L. (2010). Unified, insular, firmly policed, or fractured, porous, contested, gifted education? *Journal for the Education of the Gifted*, 33(4), 453-478. doi: 10.1177/016235321003300402
- Anderson, L. W., & Krathwohl (Eds.). (2001). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman.
- Archambault, F. X., Westberg, K. L., Brown, S. B., Hallmark, B. W., Emmons, C. L., & Zhang, W. (1993). *Regular classroom practices with gifted students: results of a national survey of classroom teachers*. (Research Monograph 93102). Storrs, Connecticut.
- Archambault, F. X., Westberg, K. L., Brown, S. B., Hallmark, B. W., Zhang, W., & Emmons, C. L. (1993). Classroom practices used with third and fourth grade students. *Journal for the Education of the Gifted*, 16, 103-119.
- Ashman, S. S., & Vukelich, C. (1983). The effect of different types of nomination forms on teachers' identification of gifted children. *Psychology in the Schools*, 20(4),

- 518-527. doi: 10.1002/1520-6807(198310)20:4<518::AID-PITS2310200421>3.0.CO;2-B
- Assouline, S. G., Colangelo, N., Heo, N., & Dockery, L. (2013). High-ability students' participation in specialized instructional delivery models: variations by aptitude, grade, gender, and content area. *The Gifted Child Quarterly*, 57(2), 135. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1318850943?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=High-Ability+Students%27+Participation+in+Specialized+Instructional+Delivery+Model+s%3A+Variations+by+Aptitude%2C+Grade%2C+Gender%2C+and+Content+Area&title=The+Gifted+Child+Quarterly&issn=00169862&date=2013-04-01&volume=57&issue=2&spage=135&author=Assouline%2C+Susan+G%3BColangelo%2C+Nicholas%3BHeo%2C+Nanseol%3BDockery%2C+Lori>
- Australian Curriculum Assessment and Reporting Authority. (2013). NAPLAN National Assessment Plan - Literacy and Numeracy. Retrieved from http://www.acara.edu.au/verve/_resources/Acara_NAPLAN_Infographic.pdf
- Australian Curriculum Assessment and Reporting Authority. (2015). Student Diversity: Gifted and Talented Students. Retrieved from <http://www.australiancurriculum.edu.au/studentdiversity/gifted-and-talented-students>
- Avery, L. D., & VanTassel-Baska, J. (2001). Investigating the impact of gifted education evaluation at state and local levels: problems with traction. *Journal for the Education of the Gifted*, 25(2), 153-176.
- Azano, A., Missett, T. C., Callahan, C. M., Oh, S., Brunner, M., Foster, L. H., & Moon, T. R. (2011). Exploring the relationship between fidelity of implementation and academic achievement in a third-grade gifted curriculum: A mixed-methods study. *Journal of Advanced Academics*, 22(5), 693-719. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1024823567?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Exploring+the+Relationship+Between+Fidelity+of+Implementation+and+Academic+Achievement+in+a+Third-Grade+Gifted+Curriculum%3A+A+Mixed-Methods+Study&title=Journal+of+Advanced+Academics&issn=1932202X&date=2011-11-01&volume=22&issue=5&spage=693&author=Azano%2C+Amy%3BMissett%2C+Tracy+C%3BCallahan%2C+Carolyn+M%3BOh%2C+Sarah%3BBrunner%2C+Marguerite%3BFoster%2C+Lisa+H%3BMoon%2C+Tonya+R>
- Bain, S. K., Bliss, S. L., Choate, S. M., & Brown, K. S. (2007). Serving children who are gifted: Perceptions of undergraduates planning to become teachers. *Journal for the Education of the Gifted*, 30(4), 450-478. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ769921&site=ehost-live&scope=site>
<http://jgq.sagepub.com/content/30/4.toc>
- Baldwin, A. Y. (2005). Identification concerns and promises for gifted students of diverse populations. *Theory Into Practice*, 44(2), 105-114. doi: 10.1207/s15430421tip4402_5
- Bangel, N. J., Enersen, D., Capobianco, B., & Moon, S. M. (2006). Professional development of preservice teachers: Teaching in the Super Saturday Program. *Journal for the Education of the Gifted*, 29, 339-363.

- Bangel, N. J., Moon, S. M., & Capobianco, B. M. (2010). Preservice teachers' perceptions and experiences in a gifted education training model. *Gifted Child Quarterly*, 54(3), 209-221. doi: 10.1177/0016986210369257
- Barbour, N. E., & Shaklee, B. D. (1998). Gifted education meets Reggio Emilia: Visions for curriculum in gifted education for young children. *The Gifted Child Quarterly*, 42(4), 228.
- Barone, D., & Schneider, R. (2003). Turning the looking glass inside out: A gifted student in an at-risk setting. *Gifted Child Quarterly*, 47(4), 259-271. doi: 10.1177/001698620304700403
- Baudson, T. G., & Preckel, F. (2013). Teachers' implicit personality theories about the gifted: An experimental approach. *School Psychology Quarterly*, 28(1), 37-46. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ1004069&site=ehost-live&scope=site>
<http://dx.doi.org/10.1037/spq000011>
- Bélanger, J., & Gagné, F. (2006, Winter). Estimating the size of the gifted/talented population from multiple identification criteria. *Journal for the Education of the Gifted*, 30, 131-163,281.
- Berman, K. M., Schultz, R. A., & Weber, C. L. (2012). A lack of awareness and emphasis in preservice teacher training: Preconceived beliefs about the gifted and talented. *Gifted Child Today*, 35(1), 18-26. doi: 10.1177/1076217511428307
- Bernal, E. M. (2003). To no longer educate the gifted: Programming for gifted students beyond the era of inclusionism. *Gifted Child Quarterly*, v. 47(no. 3), p. 183-191.
- Betts, G. (2004). Fostering autonomous learners through levels of differentiation. *Roeper Review*, 26(4), 190-191. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/206699457?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Fostering+Autonomous+Learners+Through+Levels+of+Differentiation&title=Roeper+Review&issn=02783193&date=2004-07-01&volume=26&issue=4&spage=190&author=Betts%2C+George>
- Bishop, K. (2000). The research processes of gifted students: A case study. *Gifted Child Quarterly*, 44(1), 54-64. doi: 10.1177/001698620004400106
- Black, A. C., & McCoach, D. B. (2008, Winter). Validity study of the thinking styles inventory. *Journal for the Education of the Gifted*, 32, 180-210,275-276.
- Blanchard, K. (2013). *Interest, challenge, choice, and enjoyment for the gifted learner*. 1551958 (M.A.Ed.). East Carolina University, Ann Arbor. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1501428833?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Interest%2C+challenge%2C+choice%2C+and+enjoyment+for+the+gifted+learner&title=Interest%2C+challenge%2C+choice%2C+and+enjoyment+for+the+gifted+learner&issn=&date=2013-01-01&volume=&issue=&spage=&author=Blanchard%2C+Katherine>
- Bloom, B. S. (1956). *Taxonomy of educational objectives. Handbook: Book 1: Cognitive domain*. New York: Longman Inc.
- Borland, J. H. (1997). The construct of giftedness. *Peabody Journal of Education*, 72(3/4), 6-20. doi: 10.2307/1493033

- Borland, J. H. (1999). The limits of consilience: a reaction to Francoys Gagne's 'My convictions about the nature of abilities, gifts and talents. *Journal for the Education of the Gifted*, 22(2)
- Borland, J. H. (2004). *Issues and Practices in the Identification and Education of Gifted Students From Under-represented Groups* (RM04186). The National Research Center on the Gifted and Talented:
- Borland, J. H. (2009). Myth 2: The gifted constitute 3% to 5% of the population. Moreover, giftedness equals high IQ, Which Is a stable measure of aptitude: Spinal tap psychometrics in gifted education. *The Gifted Child Quarterly*, 53(4), 236-238. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212087543?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Myth+2%3A+The+Gifted+Constitute+3%25+to+5%25+of+the+Population.+Moreover+%2C+Giftedness+Equals+High+IQ%2C+Which+Is+a+Stable+Measure+of+Aptitude%3A+Spinal+Tap+Psychometrics+in+Gifted+Education&title=The+Gifted+Child+Quarterly&issn=00169862&date=2009-10-01&volume=53&issue=4&spage=236&author=Borland%2C+James+H>
- Bourne, J., & Sturgess, A. (2006). If anyone can, Kiwis can: Every teacher, a teacher of gifted learners. *Australasian Journal of Gifted Education*, 15(1), 44-50.
- Bracken, B. A., & Brown, E. F. (2008, Summer). Early identification of high-ability students: Clinical assessment of behavior. *Journal for the Education of the Gifted*, 31, 403-426,505.
- Braggett, E. (1997). A developmental concept of giftedness: implications for the regular classroom. *Gifted Education International*, 12(2), 64-71.
- Braggett, E., & Moltzen, R. I. (2000). Programs and practices for identifying and nurturing giftedness and talent in Australia and New Zealand. In K. A. Heller, F. J. Monks, R. J. Passow & R. F. Subotnik (Eds.), *International Handbook of Giftedness and Talent* (2nd ed.). Oxford: Elsevier Science.
- Brighton, C. M. (2003). The effects of middle school teachers' beliefs on classroom practices. *Journal for the Education of the Gifted*, 27(2/3), 177-206.
- Brighton, C. M., Moon, T. R., Jarvis, J. M., & Hockett, J. A. (2007). *Primary grade teachers' conceptions of giftedness and talent: A case-based investigation* ((RM07232)). Storrs, CT.
- Brown, S. W., Renzulli, J. S., Gubbins, E. J., Siegle, D., & et al. (2005). Assumptions underlying the identification of gifted and talented students. *The Gifted Child Quarterly*, 49(1), 68-79. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212096180?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Assumptions+Underlying+the+Identification+of+Gifted+and+Talented+Students&title=The+Gifted+Child+Quarterly&issn=00169862&date=2005-01-01&volume=49&issue=1&spage=68&author=Brown%2C+Scott+W%3BRenzulli%2C+Joseph+S%3BGubbins%2C+E+Jean%3BSiegle%2C+Del%3Bet+al>
- Brulles, D., Saunders, R., & Cohn, S. J. (2010, Winter). Improving performance for gifted students in a cluster grouping model. *Journal for the Education of the Gifted*, 34, 327-352.
- Burney, V. H. (2008). Applications of social cognitive theory to gifted education. *Roeper Review*, 30(2), 130-139. Retrieved from

- <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/20671722?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Applications+of+Social+Cognitive+Theory+to+Gifted+Education&title=Roeper+Review&issn=02783193&date=2008-04-01&volume=30&issue=2&spage=130&author=Burney%2C+Virginia+H>
- Burns, D. E., & Reis, S. M. (1991). Developing a thinking skills component in the gifted education program. *Roeper Review*, 14(2), 72-79. doi: 10.1080/02783199109553391
- Calero, M. D., Belen, G.-M. M., & Robles, M. A. (2011). Learning potential in high IQ children: The contribution of dynamic assessment to the identification of gifted children. *Learning and Individual Differences*, 21(2), 176-181. doi: <http://dx.doi.org/10.1016/j.lindif.2010.11.025>
- Callahan, C. M. (2001). Beyond the gifted stereotype. *Educational Leadership*, 59(3), 42-46. Retrieved from http://0-vnweb.hwwilsonweb.com.lochbuie.lib.ac.cowan.edu.au/hww/shared/shared_main.html;jsessionid=AOD0VTDJRG2PHQA3DIMCFFWADUNBIIV0?requestid=109185
- Callahan, C. M., & Hertberg-Davis, H. L. (2012). *Fundamentals of Gifted Education : Considering Multiple Perspectives*. Hoboken: Taylor and Francis. Retrieved from <http://ECU.ebib.com.au/patron/FullRecord.aspx?p=1020254>
- Caraisco, J. (2007). Overcoming lethargy in gifted and talented education with contract activity packages: "I'm choosing to learn". *The Clearing House*, 80(2), 255-259.
- Carman, C. A. (2011a). Adding personality to gifted identification: Relationships among traditional and personality-based constructs. *Journal of Advanced Academics*, 22(3), 412-412-446,545. Retrieved from <http://0-search.proquest.com.library.ecu.edu.au/docview/869199115?accountid=10675>
- Carman, C. A. (2011b). Stereotypes of giftedness in current and future educators. *Journal for the Education of the Gifted*, 34(5), 790-812. doi: 10.1177/0162353211417340
- Carman, C. A. (2013). Comparing apples and oranges: Fifteen years of definitions of giftedness in research. *Journal of Advanced Academics*, 24(1), 52-70. doi: 10.101j/j.bandc.2006.05.001
- Carman, C. A., & Taylor, D. K. (2010). Socioeconomic status effects on using the Naglieri Nonverbal Ability Test (NNAT) to identify the gifted/talented. *The Gifted Child Quarterly*, 54(2), 75-84. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/609350024?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Socioeconomic+Status+Effects+on+Using+the+Naglieri+Nonverbal+Ability+Test+%28NNAT%29+to+Identify+the+Gifted%2FTalented&title=The+Gifted+Child+Quarterly&issn=00169862&date=2010-04-01&volume=54&issue=2&spage=75&author=Carman%2C+Carol+A%3BTaylor%2C+Debra+K>
- Carrington, N. G., & Bailey, S. B. (2000). How do preservice teachers view gifted students?: Evidence from a NSW study. *Australasian Journal of Gifted Education*, 9(1), 18-22. Retrieved from <http://0-search.informit.com.au.library.ecu.edu.au:80/fullText;res=APAFT;dn=200010794>
- Cathcart, R. (2014). Will this history have a future? : Building gifted provision for New Zealand : and a dilemma for the future. *Australasian Journal of Gifted Education*,

- 23(2), 45-59. Retrieved from http://ecu.summon.serialssolutions.com/2.0.0/link/0/eLvHCXMwnV1NS8NAEB2kJy9-VEWrwwyBSMhum6yISFtaFC8eci_7FS3SKFIF_31nspui0pOXHJKwbMjy8nby5j0Akd2kyR9MyJxWhIJ55mhDUjlraCnkyipv-t4NrNtqM4N3dCuyjG87elgu161kmivTJWHXkHako_Hs4akcunrExuSycTOVOWcZPHK1JWByX8T_nilTiRpw4_SPfvnmUzl_3OalthKSqCBs23F-WTT-Y2ZHcBBJJo7DqjiGPV93OZ85ajlO4JXLLMhZxBgMh7_xRX951Bg8Ru7wFicxMBuflxXRUMyKD1xbQ5oMEjhi1EXSvXzU6AhhVivdXCdeGcc6hd58Vk7vE36CxXtwt1iEyYoz6NRvtT8HJAokrEiNJeooVWFMIb01Vco-OdKq4gK6Owbo7Tx7CfvEOGTQg1xBZ_3x6a-bnKgNCiGn-Q
- Chamberlin, M. T., & Chamberlin, S. A. (2010). Enhancing preservice teacher development: Field experiences with gifted students. *Journal for the Education of the Gifted*, 33, 381-416,437.
- Clinkenbeard, P. R. (2012). Motivation and gifted students: Implications of theory and research. *Psychology in the Schools*, 49(7), 622-630. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ972387&site=ehost-live&scope=site>
<http://dx.doi.org/10.1002/pits.21628>
- Cohen, L. M. (2006). Conceptual foundations for gifted education: stock-taking. *Roeper Review*, 28(2), 91-110.
- Cohen, L. M., Manion, L., & Morrison, K. (2011). *Research methods in education* (Vol. 7th;7;). New York;London,: Routledge.
- Colangelo, N., Assouline, S., & Gross, M. (2004a). *A Nation Deceived: How Schools Hold Back America's Brightest Students*.
- Colangelo, N., Assouline, S., & Gross, M. (2004b). *A Nation Deceived: How Schools Hold Back America's Brightest Students*. Retrieved from <http://nationdeceived.org/>
- Colangelo, N., & Assouline, S. G. (Eds.). (2000). *Counseling gifted students*. Oxford: Elsevier Science.
- Colangelo, N., Kerr, B., Christensen, P., & Maxey, J. (1993). A comparison of gifted underachievers and gifted high achievers. *Gifted Child Quarterly*, 37(4), 155-160. doi: 10.1177/001698629303700404
- Coleman, L. J. (2004). Is consensus on a definition in the field possible, desirable, necessary? *Roeper Review*, 27(1), 10-11. Retrieved from <http://0-proquest.umi.com.library.ecu.edu.au/pqdweb?index=0&did=724580091&SrchMode=1&sid=1&Fmt=3&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1150262810&clientId=7582>
- Coleman, L. J., & Guo, A. (2013). Exploring children's passion for learning in six domains. *Journal for the Education of the Gifted*, 36(2), 155-175. doi: 10.1177/0162353213480432
- Coleman, L. J., Saunders, M. B., & Cross, T. L. (1997). Perennial debates and tacit assumptions in the education of gifted children. *The Gifted Child Quarterly*, 41(3), 44.
- Cooper, C. R. (2009). Myth 18: It is fair to teach all children the same way. *The Gifted Child Quarterly*, 53(4), 283-285. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212084679?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Myth+18%3A+It+Is+Fair+to+Teach+All+Children+the+Same+Way&title=The+Gifted+>

- [Child+Quarterly&issn=00169862&date=2009-10-01&volume=53&issue=4&spage=283&author=Cooper%2C+Carolyn+R](#)
- Cortina, L. (2011). *School Administrators and the Professional Learning of General Education Teachers Related to Gifted Education: A Delphi Study*. ProQuest LLC Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED534281&site=ehost-live&scope=site>
http://gateway.proquest.com/openurl?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&res_dat=xri:pqdiss&rft_dat=xri:pqdiss:3472687
- Cramond, B. (2004). Can we, should we, need we agree on a definition of giftedness? *Roeper Review.*, 27(1), 15-16. Retrieved from <http://0-proquest.umi.com.library.ecu.edu.au/pqdweb?did=724580101&sid=1&Fmt=3&clientId=7582&RQT=309&VName=PQD>
- Cresswell, J. W. (2009). *Research Design: Quantitative, Qualitative, and Mixed Methods Approaches*. Thousand Oaks, California: SAGE Publications, Inc.
- Crotty, M. (2003). *Foundations of Social Research*. Allen & Unwin.
- Curby, T. W., Rudasill, K. M., Rimm-Kaufman, S. E., & Konold, T. R. (2008). The role of social competence in predicting gifted enrollment. *Psychology in the Schools*, 45(8), 729-744. doi: 10.1002/pits.20338
- Curtis, J. (2005). *Preservice teachers' attitudes toward gifted students and gifted education*. 3175682 (Ed.D.). Columbia University Teachers College, Ann Arbor. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/305008803?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Preservice+teachers%27+attitudes+toward+gifted+students+and+gifted+education&title=Preservice+teachers%27+attitudes+toward+gifted+students+and+gifted+education&issn=&date=2005-01-01&volume=&issue=&spage=&author=Curtis%2C+Joan>
- Dai, D. Y., & Chen, F. (2013). Three paradigms of gifted education: In search of conceptual clarity in research and practice. *The Gifted Child Quarterly*, 57(3), 151. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1372353265?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Three+Paradigms+of+Gifted+Education%3A+In+Search+of+Conceptual+Clarity+in+Research+and+Practice&title=The+Gifted+Child+Quarterly&issn=00169862&date=2013-07-01&volume=57&issue=3&spage=151&author=Dai%2C+David+Yun%3BChen%2C+Fei>
- Dai, D. Y., Moon, S. M., & Feldhusen, J. F. (1998). Achievement motivation and gifted students: a social cognitive perspective. *Educational Psychologist*, 33(2-3), 45-63.
- Dai, D. Y., & Renzulli, J. S. (2008). Snowflakes, living systems, and the mystery of giftedness. *The Gifted Child Quarterly*, 52(2), 114-130. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212088321?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Snow+flakes%2C+Living+Systems%2C+and+the+Mystery+of+Giftedness&title=The+Gi>

- [fted+Child+Quarterly&issn=00169862&date=2008-04-01&volume=52&issue=2&spage=114&author=Dai%2C+David+Yun%3BRenzulli%2C+Joseph+S](http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/861617002?accountid=10675)
- Dai, D. Y., Swanson, J. A., & Cheng, H. (2011). State of research on giftedness and gifted education: A survey of empirical studies published during 1998-2010 (April). *The Gifted Child Quarterly*, 55(2), 126. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/861617002?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=State+of+Research+on+Giftedness+and+Gifted+Education%3A+A+Survey+of+Empirical+Studies+Published+During+1998-2010+%28April%29&title=The+Gifted+Child+Quarterly&issn=00169862&date=2011-04-01&volume=55&issue=2&spage=126&author=Dai%2C+David+Yun%3BSwanson%2C+Joan+Ann%3BCheng%2C+Hongyu>
- Dalia, N., & Agnè, B. (2013). The empirical validation of cognitive domain characteristics in the gifted screening checklist. *Gifted Education International*, 29(2), 199-210. doi: 10.1177/0261429411435107
- Davies, F. M. (2012). How do teachers develop an understanding of giftedness? A qualitative investigation. Bedford Park S Aust: Flinders University of South Australia.
- Davis, G. A., & Rimm, S. B. (1994). *Education of the gifted and talented* (3rd ed.). Boston: Allyn and Bacon.
- De Bono, E. (2000). *Six Thinking Hats*. London: Penguin.
- De Corte, E. (2013). Giftedness considered from the perspective of research on learning and instruction. *High Ability Studies*, 24(1), 3-19. doi: 10.1080/13598139.2013.780967
- Delcourt, M. A. B., & Evans, K. (1994). *Qualitative extensions of the learning outcomes study*. (Research Monograph 94110). Storrs, CT.
- Delisle, J. R. (2012a). Au contraire: Gifted in a flash (mob). *Gifted Child Today*, 35(1), 70-71. doi: 10.1177/1076217511428308
- Delisle, J. R. (2012b). Reaching those we teach: The five Cs of student engagement. *Gifted Child Today*, 35(1), 62-67. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1419022042?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Reaching+Those+We+Teach%3A+The+Five+Cs+of+Student+Engagement&title=Gifted+Child+Today&issn=&date=2012-01-01&volume=35&issue=1&spage=62&author=Delisle%2C+James+R%2C+PhD>
- Department of Education, & Australia, W. (2011a, 1 March 2011). Characteristics of Gifted and Talented Students. Retrieved from <http://det.wa.edu.au/curriculum/support/giftedandtalented/detcms/navigation/identification-provision-inclusivity-monitoring-and-assessment/identification/characteristics-of-gifted---talented-students/>
- Department of Education, & Australia, W. (2011b). Gifted and Talented Guidelines.
- Department of Education, W. A. (24 February 2011). Characteristics of Gifted & Talented Students. Retrieved from <http://det.wa.edu.au/curriculum/support/giftedandtalented/detcms/navigation/identification-provision-inclusivity-monitoring-and-assessment/identification/characteristics-of-gifted---talented-students/>

- Derryberry, W. P., & Barger, B. (2008). Do contributors to intellect explain the moral judgment abilities of gifted youth? *Gifted Child Quarterly*, 52(4), 340-352. doi: 10.1177/0016986208321806
- Diket, R. M. A., & Trudy H. (2001). Metacognitive instrument for tracking graduate student learning in gifted education. *Gifted Child Quarterly*, 45(1), 24-34.
- Dimitriadis, C. (2012). How are schools in England addressing the needs of mathematically gifted children in primary classrooms? A review of practice. *The Gifted Child Quarterly*, 56(2), 59. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1009659657?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=How+Are+Schools+in+England+Addressing+the+Needs+of+Mathematically+Gifted+Children+in+Primary+Classrooms%3F+A+Review+of+Practice&title=The+Gifted+Child+Quarterly&issn=00169862&date=2012-04-01&volume=56&issue=2&spage=59&author=Dimitriadis%2C+Chistos>
- Dixon, F. A., Yssel, N., McConnell, J. M., & Hardin, T. (2014). Differentiated instruction, professional development, and teacher efficacy. *Journal for the Education of the Gifted*, 37(2), 111-127. doi: 10.1177/0162353214529042
- Dooley, C. (1993). The challenge: meeting the needs of gifted readers. *The Reading Teacher*, 46(7), 546-551.
- Duan, Shi, & Zhou. (2010). Developmental changes in processing speed: Influence of accelerated education for gifted children. *Gifted Child Quarterly*, 54(2), 85-91. doi: 10.1177/0016986209355971
- Duan, X. (2012). Heritability: an underestimated effect in the actiotope model. *High Ability Studies*, 23(1), 51-52. doi: 10.1080/13598139.2012.679091
- Eddles-Hirsch, K., McCormick, J., Rogers, K. B., & Vialle, W. (2010). "Just challenge those high-ability learners and they'll be all right!" The impact of social context and challenging instruction on the affective development of high-ability students. *Journal of Advanced Academics*, 22, 106+.
- Elhoweris, H. (2008). Teacher judgment in identifying gifted/talented students. *Multicultural Education*, 15(3), 35-38. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/216524266?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Teacher+Judgment+in+Identifying+Gifted%2FTalented+Students&title=Multicultural+Education&issn=10683844&date=2008-04-01&volume=15&issue=3&spage=35&author=Elhoweris%2C+Hala>
- Elhoweris, H., Mutua, K., & Alsheikh, N. (2005). Effect of children's ethnicity on teachers' referral and recommendation decisions in gifted and talented programs. *Remedial and Special Education*, 26(1), 25-31.
- Endepohls-Ulpe, M., & Thömmes, N. (2014). Chances and limitations of implementing measures of differentiation for gifted children in primary schools : The teachers. *Turkish Journal of Giftedness & Education* 4 (1), 24-26.
- Endepohls-Ulpe, M., & Ruf, H. (2006). Primary school teachers' criteria for the identification of gifted pupils. *High Ability Studies*, 16(2), 219-228. doi: 10.1080/13598130600618140
- Ericsson, K. A., Nandagopal, K., & Roring, R. W. (2005). Giftedness viewed from the expert-performance perspective. *Journal for the Education of the Gifted*, 28, 287-311,390-391.

- Farkas, S., & Duffett, A. (2008). *High-achieving students in the era of NCLB. Part II: Results for a national survey of teachers*. Washington D.C.: T. B. F. Institute. Retrieved from <http://edexcellence.net/publications/high-achieving-students-in.html>
- Feldhusen, J. F., & Moon, S. M. (1992). Grouping gifted students: Issues and concerns. *The Gifted Child Quarterly*, 36(2), 63. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212129592?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Grouping+Gifted+Students%3A+Issues+and+Concerns&title=The+Gifted+Child+Quarterly&issn=00169862&date=1992-04-01&volume=36&issue=2&page=63&author=Feldhusen%2C+John+F%3BMoon%2C+Sidney+M>
- Feldman, D. H. (1999). A developmental, evolutionary perspective on gifts and talents. *Journal for the Education of the Gifted*, 22(2)
- Fiddymont, G. E. (2014). Implementing enrichment clusters in elementary schools: Lessons learned. *Gifted Child Quarterly*, 58(4), 287-296. doi: 10.1177/0016986214547635
- Fiedler, E. D., Lange, R. E., & Winebrenner, S. (2002). In search of reality: Unraveling the myths about tracking, ability grouping, and the gifted. *Roeper Review*, 24(3), 108-111. doi: 10.1080/02783190209554142
- Fimian, M. J. (1988). Predictors of classroom stress and burnout experienced by gifted and talented students. *Psychology in the Schools*, 25(4), 392-405. doi: 10.1002/1520-6807(198810)25:4<392::AID-PITS2310250407>3.0.CO;2-D
- Finley, L. T. (2008). *Implementing a differentiated model of gifted education: Perspectives of elementary principals and teachers*. 3329393 (Ed.D.). Arcadia University, Ann Arbor. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/304474227?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Implementing+a+differentiated+model+of+gifted+education%3A+Perspectives+of+elementary+principals+and+teachers&title=Implementing+a+differentiated+model+of+gifted+education%3A+Perspectives+of+elementary+principals+and+teachers&issn=&date=2008-01-01&volume=&issue=&page=&author=Finley%2C+Lillian+Thayer>
- Firmender, J. M., Reis, S. M., & Sweeny, S. M. (2013). Reading comprehension and fluency levels ranges across diverse classrooms: The need for differentiated reading instruction and content. *The Gifted Child Quarterly*, 57(1), 3. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1221941975?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Reading+Comprehension+and+Fluency+Levels+Ranges+Across+Diverse+Classrooms%3A+The+Need+for+Differentiated+Reading+Instruction+and+Content&title=The+Gifted+Child+Quarterly&issn=00169862&date=2013-01-01&volume=57&issue=1&page=3&author=Firmender%2C+Janine+M%3BReis%2C+Sally+M%3BSweeny%2C+Sheelah+M>
- Fisher, D., & Frey, N. (2012). Gifted students' perspectives on an instructional framework for school improvement. *National Association of Secondary School Principals. NASSP Bulletin*, 96(4), 285-301. Retrieved from

- <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1287938604?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Gifted+Students%27+Perspectives+on+an+Instructional+Framework+for+School+Improvement&title=National+Association+of+Secondary+School+Principals.+NASSP+Bulletin&issn=01926365&date=2012-12-01&volume=96&issue=4&spage=285&author=Fisher%2C+Douglas%3BFrey%2C+Nancy>
- Ford, D. Y., Russo, C. J., & Harris, J. J., III. (1995). Meeting the educational needs of the gifted: A legal imperative. *Roepers Review*, 17(4), 224-228.
- Fraser-Seeto, K. T., Howard, S. J., & Woodcock, S. (2013). Preparation for teaching gifted students: An updated investigation into university offerings in New South Wales *Australasian Journal of Gifted Education*, 22(2), 45-51. Retrieved from <http://search.informit.com.au.ezproxy.ecu.edu.au/documentSummary;dn=861945172982288;res=|ELAPA>
- Fredricks, J. A., Alfeld, C., & Eccles, J. (2010). Developing and fostering passion in academic and nonacademic domains. *The Gifted Child Quarterly*, 54(1), 18-30. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/608672100?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Developing+and+Fostering+Passion+in+Academic+and+Nonacademic+Domains&title=The+Gifted+Child+Quarterly&issn=00169862&date=2010-01-01&volume=54&issue=1&spage=18&author=Fredricks%2C+Jennifer+A%3BAlfeld%2C+Corinne%3BEccles%2C+Jacquelynn>
- Freebody, P. (2003). *Qualitative Research in Education*. London: Sage Publications.
- Freeman, J. (2006, Summer
Summer 2006). Giftedness in the long term. *Journal for the Education of the Gifted*, 29, 384-403,485.
- Friedman, R. C., & Lee, S. W. (1996). Differentiating instruction for high achieving/gifted children in regular classrooms: A field test of three gifted-education models. *Journal for the Education of the Gifted*, 19(4), 405-436.
- Froiland, J. M. P., Oros, E. P., Smith, L. B. S., & Hirschert, T. B. A. (2012). Intrinsic motivation to learn: The nexus between psychological health and academic success. *Contemporary School Psychology*, 16, 91-100. doi: 10.1177/1087054712436585
- Gagné, F. (1985). Giftedness and talent: reexamining a reexamination of the definitions. *Gifted Child Quarterly*, 29(3), 103-112.
- Gagné, F. (1994). Are teachers really poor talent detectors? Comments On Pagnato and Birch's (1959) Study of the effectiveness and efficiency of various identification techniques. *Gifted Child Quarterly*, 38(3), 124-126. doi: 10.1177/001698629403800305
- Gagné, F. (1995). From giftedness to talent: A developmental model and its impact on the language of the field. *Roepers Review*, 18(2), 103-111. Retrieved from
- Gagné, F. (1999). My convictions about the nature of abilities, gifts and talents. *Journal for the Education of the Gifted*, 22(2), 109-136. Retrieved from [297](http://0-</p>
</div>
<div data-bbox=)

- vnweb.hwwilsonweb.com.library.ecu.edu.au/hww/results/results_fulltext_maincontentframe.jhtml;hwwilsonid=CMB5PNMZC1S0JQA3DIKSFGOADUNGMIVO
- Gagné, F. (2003). Transforming gifts into talents: The DMGT as a developmental theory. In N. Colangelo & G. A. Davis (Eds.), *Handbook of Gifted Education* (3rd ed., pp. 60-74). Boston: Allyn and Bacon.
- Gagné, F. (2004a). An imperative, but, alas, improbable consensus! *Roeper Review*, 27(1), 12-14. Retrieved from
- Gagné, F. (2004b). Transforming gifts into talents: the DMGT as a developmental theory. *High Ability Studies*, 15(2), 119-147. doi: 10.1080/1359813042000314682
- Gagné, F. (2005). From noncompetence to exceptional talent: Exploring the range of academic achievement within and between grade levels. *The Gifted Child Quarterly*, Vol. 49(2), 139-143. Retrieved from <http://0-proquest.umi.com.library.ecu.edu.au/pqdweb?did=827971101&sid=2&Fmt=4&clientId=7582&RQT=309&VName=PQD>
- Gagné, F. (2007). Ten commandments for academic talent development. *Gifted Child Quarterly*, 51(2), 93-118. doi: 10.1177/0016986206296660
- Gagné, F. (2009). Building gifts into talents: brief overview of the DMGT 2.0. *Gifted*, (152), 5-9. Retrieved from <http://search.informit.com.au/fullText;res=AEIPT;dn=177085>
- Gagné, F. (2012). Ten commandments for academic talent development. *Vision*, 22(1), 9-12.
- Gagné, F., & St Père, F. (2002). When IQ is controlled, does motivation still predict achievement? *Intelligence*, 30(1), 71-100. doi: [http://dx.doi.org/10.1016/S0160-2896\(01\)00068-X](http://dx.doi.org/10.1016/S0160-2896(01)00068-X)
- Gallagher, J. (2000). Unthinkable thoughts: Education of gifted students. *Gifted Child Quarterly*, 44(1), 5-12.
- Gallagher, J. J., & Gallagher, S. A. (1994). *Teaching the Gifted Child* (Vol. 4th). Boston: Allyn and Bacon.
- Gallagher, J. J., Harradine, C. C., & Coleman, M. R. (1997). Challenge or boredom? gifted students views on their schooling. *Roeper Review*, 19, 132-136.
- Gallagher, S., Smith, S. R., & Merrotsy, P. (2011). Teachers' perceptions of the socioemotional development of intellectually gifted primary aged students and their attitudes towards ability grouping and acceleration. *Gifted and Talented International*, 26(1-2), 11-24. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ959387&site=ehost-live&scope=site>
<http://www.world-gifted.org/Publications/GnTI-Journal>
- Gardner, H. (1983). *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basic Books.
- Gardner, H. (1993). *Multiple Intelligences: The Theory in Practice*. New York: Basic Books.
- Garrett, L., & Moltzen, R. (2011). Writing because I want to, not because I have to: Young gifted writers' perspectives on the factors that "matter" in developing expertise. *English Teaching*, 10(1), 165-n/a. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/926186958?accountid=10675>

- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Writing+because+I+want+to%2C+not+because+I+have+to%3A+Young+gifted+writers%27+perspectives+on+the+factors+that+%22matter%22+in+developing+expertise&title=English+Teaching&issn=&date=2011-05-01&volume=10&issue=1&spage=165&author=Garrett%2C+Lynda%3BMoltzen%2C+Roger>
- Gaultney, J. F., Bjorklund, D. F., & Goldstein, D. (1996). To be young, gifted, and strategic: Advantages for memory performance. *Journal of Experimental Child Psychology*, 61(1), 43-66. doi: <http://dx.doi.org/10.1006/jecp.1996.0002>
- Geake, J. G. (2008). High abilities at fluid analogizing: A cognitive neuroscience construct of giftedness. *Roeper Review*, 30(3), 187-195. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/206711861?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=High+Abilities+at+Fluid+Analogizing%3A+A+Cognitive+Neuroscience+Construct+of+Giftedness&title=Roeper+Review&issn=02783193&date=2008-07-01&volume=30&issue=3&spage=187&author=Geake%2C+John+G>
- Geake, J. G., & Gross, M. U. M. (2008). Teachers' negative affect toward academically gifted students. *Gifted Child Quarterly*, 52(3), 217-231. doi: 10.1177/0016986208319704
- Gentry, M. L. (1999). *Promoting student achievement and exemplary classroom practices through cluster grouping: A research-based alternative to heterogeneous elementary classrooms*. ((RM99138)). Storrs, CT
- Gentry, M. L., & Gable, R. K. (2001). From the student's perspective—My Class Activities: An instrument for use in research and evaluation. *Journal for the Education of the Gifted*, 24(4), 322-343. doi: 10.1177/016235320102400403
- Gentry, M. L., & Keilty, B. (2004). Rural and suburban cluster grouping: reflections on staff development as a component of program success. *Roeper Review*, 26(3), 147. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/62122794?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Rural+and+Suburban+Cluster+Grouping%3A+Reflections+on+Staff+Development+as+a+Component+of+Program+Success&title=Roeper+Review&issn=02783193&date=2004-01-01&volume=26&issue=3&spage=147&author=Gentry%2C+Marcia%3BKeilty%2C+Bill>
- Gentry, M. L., & Owen, S. V. (1999). An investigation of the effects of total school flexible cluster grouping on identification, achievement, and classroom practices. *Gifted Child Quarterly*, 43(4), 224-243. doi: 10.1177/001698629904300402
- Gentry, M. L., Rizza, M. G., & Gable, R. K. (2001). Gifted students' perceptions of their class activities: differences among rural, urban, and suburban student attitudes. *Gifted Child Quarterly*, 45(2), 115-129. doi: 10.1177/001698620104500205
- Gentry, M. L., Rizza, M. G., & Owen, S. V. (2002). Examining perceptions of challenge and choice in classrooms: The relationship between teachers and their students and comparisons between gifted students and other students. *Gifted Child Quarterly*, 46(2), 145-155. doi: 10.1177/001698620204600207
- Gentry, M. L., Steenbergen-Hu, S., & Choi, B.-y. (2011). Student-identified exemplary teachers: Insights from talented teachers. *The Gifted Child Quarterly*, 55(2), 111. Retrieved from

- <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/861617508?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Student-Identified+Exemplary+Teachers%3A+Insights+From+Talented+Teachers&title=The+Gifted+Child+Quarterly&issn=00169862&date=2011-04-01&volume=55&issue=2&spage=111&author=Gentry%2C+Marcia%3BSteenbergen-Hu%2C+Saiying%3BChoi%2C+Byung-yeon>
- George, P. S. (2005). A rationale for differentiating instruction in the regular classroom. *Theory Into Practice, 44*(3), 185-193. doi: 10.1207/s15430421tip4403_2
- Goodnough, K. (2000). Fostering liberal views of giftedness: A study of the beliefs of six undergraduate education students. *Roeper Review, 23*(2), 89-90.
- Government of South Australia, D. o. E. a. C. D. (2012). *Policy Statement: Gifted and Talented Children and Students Policy*
- Graffam, B. (2006). A case study of teachers of gifted learners: Moving from prescribed practice to described practitioners. *Gifted Child Quarterly, 50*(2), 119-131.
- Gross, M. U. M. (1993). *Exceptionally Gifted Children*. New York: Routledge Press.
- Gross, M. U. M. (1999). Small poppies: Highly gifted children in the early years. *Roeper Review, 21*(3), 207-214. Retrieved from <http://0-vnweb.hwwilsonweb.com.library.ecu.edu.au:80/hww/jumpstart.jhtml?recid=0bc05f7a67b1790e6d254896be429b31fcbab1cbbf4a43f90d19666e81f470f4c19309b1c634a3b7&fmt=H>
- Gross, M. U. M. Small poppies: highly gifted children in the early years. *Roeper Review v. 21 no. 3 (February/March 1999) p. 207-14*
- Gross, M. U. M., & Slep, B. (2000). Responding to gifted and talented students. *PEN, Primary English Teaching Association*,(122)
- Grubb, K. E. (2009). An examination of the experiences of gifted preschool and primary age children. Melbourne: Melbourne: RMIT University.
- Gubbins, E. J., Westberg, K. L., Reis, S. M., Dinnocenti, S., Tieso, C. L., Muller, L. M., . . . Burns, D. E. (2002). *Implementing a professional development model using gifted education strategies with all students* ((RM02172)).
- Guildford, J. P. (1967). *The Nature of Human Intelligence*. New York: McGraw-Hill.
- Guildford, J. P. (1988). Some changes in the structure of the intellect model. *Educational Psychological Measurement, 48*, 1-4.
- Haan, R. F. D. (1957). Identifying gifted children. *The School Review, 65*(1), 41-48. doi: 10.2307/1083612
- Hansen, J. B., & Feldhusen, J. F. (1994). Comparison of trained and untrained teachers of gifted students. *The Gifted Child Quarterly, 38*(3), 115. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212127544?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Comparison+of+trained+and+untrained+teachers+of+gifted+students&title=The+Gifted+Child+Quarterly&issn=00169862&date=1994-07-01&volume=38&issue=3&spage=115&author=Hansen%2C+Jan+B%3BFeldhuse n%2C+John+F>
- Hany, E. A. (1999). Do personal convictions promote scientific progress? comment on Gagne's 'My convictions about the nature of abilities, gifts and talents.'. *Journal for the Education of the Gifted, 22*(2)

- Harder, B., Vialle, W., & Ziegler, A. (2014). Conceptions of giftedness and expertise put to the empirical test. *High Ability Studies*, 25(2), 83-120. doi: 10.1080/13598139.2014.968462
- Harris, A. M., & Hemmings, B. C. (2008). Preservice teachers' understandings of and preparedness for gifted and talented education. *Australasian Journal of Gifted Education*, 17(1), 5-18. Retrieved from <http://search.informit.com.au/fullText;res=AEIPT;dn=170514>
- Harris, B., Plucker, J. A., Rapp, K. E., & Martínez, R. S. (2009). Identifying gifted and talented English language learners: A case study. *Journal for the Education of the Gifted*, 32, 368-368-393,442.
- Harrison, C. (2004). Giftedness in early childhood: The search for complexity and connection. *Roepers Review*, 26(no2), 78-84. Retrieved from http://0-vnweb.hwwilsonweb.com.lochbuie.lib.ac.cowan.edu.au/hww/shared/shared_main.jhtml;jsessionid=JWGYNGYRY1R4NQA3DIKSFFOADUNBIIV0?requestid=124675
- Hebert, T. P. (2010). Lessons learned from my students: The impact of SEM teaching and learning on affective development. *Gifted Education International*, 26(2-3), 271-284. Retrieved from <http://0-search.ebscohost.com.library.ecu.edu.au/login.aspx?direct=true&db=eric&AN=EJ908835&site=ehost-live&scope=site>
- Heller, K. A. (2012). Different research paradigms concerning giftedness and gifted education: shall ever they meet? *High Ability Studies*, 23(1), 73-75. doi: 10.1080/13598139.2012.679097
- Hertberg-Davis, H. (2009). Myth 7: Differentiation in the regular classroom is equivalent to gifted programs and is sufficient: Classroom teachers have the time, the skill, and the will to differentiate adequately. *The Gifted Child Quarterly*, 53(4), 251-253. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212091549?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Myth+7%3A+Differentiation+in+the+Regular+Classroom+Is+Equivalent+to+Gifted+Programs+and+Is+Sufficient%3A+Classroom+Teachers+Have+the+Time%2C+the+Skill%2C+and+the+Will+to+Differentiate+Adequately&title=The+Gifted+Child+Quarterly&issn=00169862&date=2009-10-01&volume=53&issue=4&spage=251&author=Hertberg-Davis%2C+Holly>
- Hertzog, N. B. (1997). Open-ended activities and their role in maintaining challenge. *Journal for the Education of the Gifted*, 21, 54-81.
- Hertzog, N. B. (1998). Open-ended activities: Differentiation through learner responses. *Gifted Child Quarterly*, 42(4), 212-227. doi: 10.1177/001698629804200405
- Hesse-Biber, S. N. (2010). *Mixed methods research: merging theory with practice*. New York: Guilford Press.
- Hodge, K. A., & Kemp, C. R. (2006). Recognition of giftedness in the early years of school: perspectives of teachers, parents, and children. *Journal for the Education of the Gifted*, 30, 164-204,281-282.
- Hollingworth, L. S. (1942). *Children above 180 IQ Stanford-Binet: Origin and Development*. New York: World Book Co.
- Hong, E., Greene, M., & Hartzell, S. (2011). Cognitive and motivational characteristics of elementary teachers in general education classrooms and in gifted programs. *The Gifted Child Quarterly*, 55(4), 250. Retrieved from

- <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/898534007?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Cognitive+and+Motivational+Characteristics+of+Elementary+Teachers+in+General+Education+Classrooms+and+in+Gifted+Programs&title=The+Gifted+Child+Quarterly&issn=00169862&date=2011-10-01&volume=55&issue=4&spage=250&author=Hong%2C+Eunsook%3BGreene%2C+Mary%3BHartzell%2C+Stephanie>
- Hong, E., Greene, M. T., & Higgins, K. (2006). Instructional practices of teachers in general education classrooms and gifted resource rooms: development and validation of the instructional practice questionnaire. *The Gifted Child Quarterly*, 50(2), 91-103. Retrieved from <http://0-proquest.umi.com.library.ecu.edu.au/pqdweb?did=1039096281&sid=1&Fmt=4&clientId=7582&RQT=309&VName=PQD>
- Hoogeveen, L., Hell, J. G. v., & Verhoeven, L. (2005). Teacher attitudes toward academic acceleration and accelerated students in the Netherlands. *Journal for the Education of the Gifted*, 29(1), 30-59.
- Horsley, J. (2012). Teacher catalysts: Characteristics of teachers who facilitate high academic success. *Australasian Journal of Gifted Education*, 21(1), 23-31. Retrieved from <http://search.informit.com.au/fullText;res=AEIPT;dn=193266>
- Houghton, C. (2014). Capturing the pupil voice of secondary gifted and talented students who had attended an enrichment programme in their infant school. *Gifted Education International*, 30(1), 33-46. doi: 10.1177/0261429413480421
- Housand, B. C., & Housand, A. M. (2012). The role of technology in gifted students' motivation. *Psychology in the Schools*, 49(7), 706-715. doi: 10.1002/pits.21629
- Hudson, P., & Hudson, S. (2012). Examining preservice teachers' applied learning experiences in the Teacher Education Done Differently Project. *Teacher Education and Practice*, 25(3), 422-441. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ994648&site=ehost-live&scope=site>
- <https://rowman.com/page/TEP>
- Hudson, P., Hudson, S., Lewis, K., & Watters, J. J. (2010). Embedding gifted education in preservice teacher education : a collaborative school-university approach. *Australasian Journal of Gifted Education*, 19(2), 5-15. Retrieved from <http://search.informit.com.au/fullText;res=AEIPT;dn=185931>
- Hughes, L. (1999). Action research and practical inquiry: How can I meet the needs of the high- ability student within my regular education classroom? *Journal for the Education of the Gifted*, 22(3), 282-297.
- Hunsaker, S. L., Nielsen, A., & Bartlett, B. (2010). Correlates of teacher practices influencing student outcomes in reading instruction for advanced readers. *The Gifted Child Quarterly*, 54(4), 273. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/754102333?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Correlates+of+Teacher+Practices+Influencing+Student+Outcomes+in+Reading+Instruction+for+Advanced+Readers&title=The+Gifted+Child+Quarterly&issn=00169862&date=2010-10-01&volume=54&issue=4&spage=273&author=Hunsaker%2C+Scott+L%3BNielsen%2C+Aubree%3BBartlett%2C+Brianne>

- Hurford, R. (2013). How does using philosophy and creative thinking enable me to recognise and develop inclusive gifts and talents in my pupils? *Gifted Education International*, 29(3), 250-261. doi: 10.1177/0261429412467109
- Hymer, B. J. (2013). An act of GRACE? What do contemporary understandings in psychology have to contribute to the future of gifted education? *Gifted Education International*, 29(2), 108-124. doi: 10.1177/0261429412447707
- Jarvis, J. M., & Henderson, L. (2012). Current practices in the education of gifted and advanced learners in south Australian schools. *Australasian Journal of Gifted Education*, 21(1), 5-22. Retrieved from <http://search.informit.com.au.ezproxy.ecu.edu.au/documentSummary;dn=730793374485953;res=IELAPA>
- Johnsen, S. K. (2003). Adapting instruction with homogeneous groups. *Gifted Child Today*, 26(2), 5. Retrieved from http://0-vnweb.hwwilsonweb.com.lochbuie.lib.ac.cowan.edu.au/hww/shared/shared_main.html;jsessionid=SVKKXMUSEBSJRQA3DIKSFFWADUNBIIV0?requestid=206168
- Johnsen, S. K. (2012). Gifted education and the common core state standards. *Gifted Child Today*, 35(2), 81-82. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1432073972?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Gifted+Education+and+the+Common+Core+State+Standards&title=Gifted+Child+Today&issn=&date=2012-04-01&volume=35&issue=2&spage=81&author=Johnsen%2C+Susan+K%2C+PhD>
- Johnsen, S. K. (2013). National challenges in providing services to gifted students. *Gifted Child Today*, 36(1), 5-6. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1419020187?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=National+Challenges+in+Providing+Services+to+Gifted+Students&title=Gifted+Child+Today&issn=&date=2013-01-01&volume=36&issue=1&spage=5&author=Johnsen%2C+Susan+K%2C+PhD>
- Johnsen, S. K., Haensly, P. A., & Ryser, G. R. (2002). Changing general education classroom practices to adapt for gifted students. *Gifted Child Quarterly*, 46(1), 45-63. Retrieved from <http://gcq.sagepub.com/cgi/content/abstract/46/1/45>
- Johnsen, S. K., & Ryser, G. R. (1996). An overview of effective practices with gifted students in regular education settings. *Journal for the Education of the Gifted*, 19(4), 379-404.
- Johnson, J., Im-Bolter, N., & Pascual-Leone, J. (2003). Development of mental attention in gifted and mainstream children: The role of mental capacity, inhibition, and speed of processing. *Child Development*, 74(6), 1594-1614. doi: 10.1046/j.1467-8624.2003.00626.x
- Jung, J. Y. (2012). Giftedness as a developmental construct that leads to eminence as adults: Ideas and implications from an occupational/career decision-making perspective. *The Gifted Child Quarterly*, 56(4), 189. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1038123653?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Gifted+ness+as+a+Developmental+Construct+That+Leads+to+Eminence+as+Adults%3A+Ideas+and+Implications+From+an+Occupational%2FCareer+Decision->

- [Making+Perspective&title=The+Gifted+Child+Quarterly&issn=00169862&date=2012-10-01&volume=56&issue=4&spage=189&author=Jung%2C+Jae+Yup](#)
- Jung, J. Y. (2014). Predictors of attitudes to gifted programs/provisions: Evidence from preservice educators. *Gifted Child Quarterly*, 58(4), 247-258. doi: 10.1177/0016986214547636
- Kanevsky, L. (2011). Differential differentiation: What types of differentiation do students want? *The Gifted Child Quarterly*, 55(4), 279. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/898534009?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Differential+Differentiation%3A+What+Types+of+Differentiation+Do+Students+Want%3F&title=The+Gifted+Child+Quarterly&issn=00169862&date=2011-10-01&volume=55&issue=4&spage=279&author=Kanevsky%2C+Lannie>
- Kanevsky, L., & Keighley, T. (2003). To produce or not to produce? Understanding boredom and the honor in underachievement. *Roeper Review*, 26(1), 20-28. Retrieved from http://0-vnweb.hwwilsonweb.com.lochbuie.lib.ac.cowan.edu.au/hww/shared/shared_main.jhtml;jsessionid=PCFKTNTNXB10XQA3DIMCFFWADUNBIIV0?requestid=128433
- Kaplan, S. N. (2009). Myth 9: There Is a single curriculum for the gifted. *The Gifted Child Quarterly*, 53(4), 257-258. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212084499?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Myth+9%3A+There+Is+a+Single+Curriculum+for+the+Gifted&title=The+Gifted+Child+Quarterly&issn=00169862&date=2009-10-01&volume=53&issue=4&spage=257&author=Kaplan%2C+Sandra+N>
- Karnes, M. B., & Johnson, L. J. (1997). An imperative: Programming for the young gifted / talented. *Journal for the Education of the Gifted*, 10(3), 195-214.
- Karp, A. (2010). Teachers of the mathematically gifted tell about themselves and their profession. *Roeper Review*, 32(4), 272-272-280. Retrieved from <http://0-search.proquest.com.library.ecu.edu.au/docview/851893610?accountid=10675>
- Kettler, T. (2014). Critical thinking skills among elementary school students: Comparing identified gifted and general education student performance. *Gifted Child Quarterly*, 58(2), 127-136. doi: 10.1177/0016986214522508
- Kohn, A. (2010). How to create nonreaders: Reflections on motivation, learning, and sharing power. *English Journal*, 100(1), 16-22. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/749382227?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=How+to+Create+Nonreaders%3A+Reflections+on+Motivation%2C+Learning%2C+and+Sharing+Power&title=English+Journal&issn=00138274&date=2010-09-01&volume=100&issue=1&spage=16&author=Kohn%2C+Alfie>
- Koshy, V., & Pinheiro-Torres, C. (2013). 'Are we being de-gifted, Miss?' Primary school gifted and talented co-ordinators' responses to the Gifted and Talented Education Policy in England. *British Educational Research Journal*, 39(6), 953-978. doi: 10.1002/berj.3021
- Kronborg, L., & Moltzen, R. (1999). AAEGT - Report on gifted courses. Tertiary courses in gifted education across Australia, New Zealand and Asia. *The Australasian Journal of Gifted Education*, 8(1), 77-79.

- Kronborg, L., & Plunkett, M. (2013). Responding to professional learning: How effective teachers differentiate teaching and learning strategies to engage highly able adolescents *Australasian Journal of Gifted Education*, 22(2), 52-63. Retrieved from <http://search.informit.com.au.ezproxy.ecu.edu.au/documentSummary;dn=862094236752354;res=IELAPA> ISSN: 1323-9686. [cited 04 Jan 15].
- Kulik, J. A. (1992). *An analysis of the research on ability grouping: Historical and contemporary perspectives*. (RBDM 9204). Storrs, CT.
- Kulik, J. A., & Kulik, C.-L. C. (1992). Meta-analytic findings on grouping programs. *The Gifted Child Quarterly*, 36(2), 73. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212139572?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Meta-Analytic+Findings+on+Grouping+Programs&title=The+Gifted+Child+Quarterly&isn=00169862&date=1992-04-01&volume=36&issue=2&spage=73&author=Kulik%2C+James+A%3BKulik%2C+Chen-Lin+C>
- Lakin, J. M., & Lohman, D. F. (2011). The predictive accuracy of verbal, quantitative, and nonverbal reasoning tests: Consequences for talent identification and program diversity. *Journal for the Education of the Gifted*, 34(4), 595-623. doi: 10.1177/016235321103400404
- Lambert, M. (2005). Preparation of teachers for teaching able and gifted pupils in English primary schools: how well do our 'standards' match up? *Gifted Education International*, 20(1), 20-28.
- Lassig, C. (2009). Teachers' attitudes toward the gifted : the importance of professional development and school culture. *Australasian Journal of Gifted Education*, 18(2), 32-42. Retrieved from <http://search.informit.com.au/fullText;res=AEIPT;dn=181055>
- Latz, A. O., Neumeister, K. L. S., Adams, C. M., & Pierce, R. L. (2008). Peer coaching to improve classroom differentiation: Perspectives from Project CLUE. *Roeper Review*, 31(1), 27-27-39. Retrieved from <http://0-search.proquest.com.library.ecu.edu.au/docview/206705097?accountid=10675>
- Lee, L. (1999). Teachers' conceptions of gifted and talented young children. *High Ability Studies*, 10(2), 183-196. doi: 10.1080/1359813990100205
- Lee, S.-Y., & Olszewski-Kubilius, P. (2006). A study of instructional methods used in fast-paced classes. *The Gifted Child Quarterly*, 50(3), 216-237,273. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212096648?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=A+Study+of+Instructional+Methods+Used+in+Fast-Paced+Classes&title=The+Gifted+Child+Quarterly&issn=00169862&date=2006-07-01&volume=50&issue=3&spage=216&author=Lee%2C+Seon-Young%3BOlszewski-Kubilius%2C+Paula>
- Lewis, E., & Milton, M. (2005). Attitudes of teachers before and after professional development. *Australasian Journal of Gifted Education*, 14(1), 5-14.
- Linn-Cohen, R., & Hertzog, N. B. (2007). Unlocking the GATE to differentiation: A qualitative study of two self-contained gifted classes. *Journal for the Education of the Gifted*, 31(2), 227-259. doi: 10.4219/jeg-2007-677

- Little, C. A. (2012). Curriculum as motivation for gifted students. *Psychology in the Schools, 49*(7), 695-705. doi: 10.1002/pits.21621
- Lloyd, L. (1999). Multi-age classes and high ability students. *Review of Educational Research, 69*(2), 187-212.
- Logan, B. (2011). Examining differentiated instruction: Teachers respond. *Research in Higher Education Journal, 13*, 1-14. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/889136509?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Examining+differentiated+instruction%3A+Teachers+respond&title=Research+in+Higher+Education+Journal&issn=&date=2011-10-01&volume=13&issue=&spage=1&author=Logan%2C+Brenda>
- Maguire, K. G. (2008). *Gifted education: In-class differentiation and acceleration in Pennsylvania schools* (9781109042214). Ann Arbor: J. H. Borland. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/304627330?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Gifted+education%3A+In-class+differentiation+and+acceleration+in+Pennsylvania+schools&title=Gifted+education%3A+In-class+differentiation+and+acceleration+in+Pennsylvania+schools&issn=&date=2008-01-01&volume=&issue=&spage=&author=Maguire%2C+Kim+G>.
- Makel, M. C., Putallaz, M., & Wai, J. (2012). Teach students what they don't know but are ready to learn: A commentary on "Rethinking giftedness and gifted education". *The Gifted Child Quarterly, 56*(4), 198. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1038123659?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Teach+Students+What+They+Don%27t+Know+but+Are+Ready+to+Learn%3A+A+Commentary+on+%22Rethinking+Giftedness+and+Gifted+Education%22&title=The+Gifted+Child+Quarterly&issn=00169862&date=2012-10-01&volume=56&issue=4&spage=198&author=Makel%2C+Matthew+C%3BPutallaz%2C+Martha%3BWai%2C+Jonathan>
- Maker, C. J. (1982). *Curriculum development for the gifted*. Rockville, Md: Aspen Systems Corp.
- Maker, C. J. (2005). *Teaching Models in Education of the Gifted* (Third ed.).
- Maker, C. J. (Ed.). (1993). *Critical issues in gifted education: Programs for the gifted in regular classrooms*. Texas: Pro-Ed Inc.
- Maker, C. J., Rogers, J. A., Nielson, A. B., & Bauerle, P. R. (1996). Multiple intelligences, problem solving and diversity in the general classroom. *Journal for the Education of the Gifted, 19*, 437-460.
- Marland, S. P. (1972). *Education of the gifted and talented: Report to the Congress of the United States by the U.S. Commissioner of Education*. Washington, DC:
- Matthews, D. J. F., Joanne F. (2005). A dynamic scaffolding model of teacher development: The gifted education consultant as catalyst for change. *Gifted Child Quarterly, 49*(3), 222-230. Retrieved from <http://0-vnweb.hwwilsonweb.com.library.ecu.edu.au:80/hww/jumpstart.jhtml?recid=0bc05f7a67b1790e6d254896be429b31bbaab99306c78c4f5416b80504da00e7f748de1f65bef04a&fmt=C>

- McBee, M. T. (2010). Examining the probability of identification for gifted programs for students in Georgia elementary schools: A multilevel path analysis study. *The Gifted Child Quarterly*, 54(4), 283. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/754101813?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Examining+the+Probability+of+Identification+for+Gifted+Programs+for+Students+in+Georgia+Elementary+Schools%3A+A+Multilevel+Path+Analysis+Study&title=The+Gifted+Child+Quarterly&issn=00169862&date=2010-10-01&volume=54&issue=4&spage=283&author=McBee%2C+Matthew>
- McBee, M. T., McCoach, D. B., Peters, S. J., & Matthews, M. S. (2012). The case for a schism: A commentary on Subotnik, Olszewski-Kubilius, and Worrell (2011). *The Gifted Child Quarterly*, 56(4), 210. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1038127252?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=The+Case+for+a+Schism%3A+A+Commentary+on+Subotnik%2C+Olszewski-Kubilius%2C+and+Worrell+%282011%29&title=The+Gifted+Child+Quarterly&issn=00169862&date=2012-10-01&volume=56&issue=4&spage=210&author=McBee%2C+Matthew+T%3BMcCoach%2C+D+Betsy%3BPeters%2C+Scott+J%3BMatthews%2C+Michael+S>
- McCoach, D. B., & Siegle, D. (2007). What predicts teachers' attitudes toward the gifted? *The Gifted Child Quarterly*, 51(3), 246-255. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212104391?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=What+Predicts+Teachers%27+Attitudes+Toward+the+Gifted%3F&title=The+Gifted+Child+Quarterly&issn=00169862&date=2007-07-01&volume=51&issue=3&spage=246&author=McCoach%2C+D+Betsy%3BSiegle%2C+Del>
- Megay-Nespoli, K. (2001). Beliefs and attitudes of novice teachers regarding instruction of academically talented learners. *Roepers Review*, 23(3), 178-182.
- Miller, E. M. (2009). The effect of training in gifted education on elementary classroom teachers' theory-based reasoning about the concept of giftedness. *Journal for the Education of the Gifted*, 33, 65-105,145.
- Mills, C. J. (2003). Characteristics of effective teachers of gifted students: Teacher background and personality styles of students. *The Gifted Child Quarterly*, 47(4), 272. Retrieved from <http://0-proquest.umi.com.library.ecu.edu.au/pqdweb?did=489467811&sid=5&Fmt=2&clientid=7582&RQT=309&VName=PQD>
- Mills, C. J., & Durden, W. G. (1992). Cooperative learning and ability grouping: An issue of choice. *Gifted Child Quarterly*, 36(1), 11-16. doi: 10.1177/001698629203600103
- Missett, T. C., Brunner, M. M., Callahan, C. M., Moon, T. R., & Azano, A. (2014). Exploring teacher beliefs and use of acceleration, ability grouping, and formative assessment. *Journal for the Education of the Gifted*, 37(3), 245-268. doi: 10.1177/0162353214541326
- Moon, S. M. (2009). Myth 15: High-Ability Students Don't Face Problems and Challenges. *The Gifted Child Quarterly*, 53(4), 274-276. Retrieved from

- <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212084616?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Myth+15%3A+High-Ability+Students+Don%27t+Face+Problems+and+Challenges&title=The+Gifted+Child+Quarterly&issn=00169862&date=2009-10-01&volume=53&issue=4&spage=274&author=Moon%2C+Sidney+M>
- Moon, T. R. (2009). Myth 16: High-stakes tests are synonymous with rigor and difficulty. *The Gifted Child Quarterly*, 53(4), 277-279. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212088763?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Myth+16%3A+High-Stakes+Tests+Are+Synonymous+With+Rigor+and+Difficulty&title=The+Gifted+Child+Quarterly&issn=00169862&date=2009-10-01&volume=53&issue=4&spage=277&author=Moon%2C+Tonya+R>
- Moon, T. R., & Brighton, C. M. (2008). Primary teachers' conceptions of giftedness. *Journal for the Education of the Gifted*, 31(4), 447-480,505-506. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/222271245?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Primary+Teachers%27+Conceptions+of+Giftedness&title=Journal+for+the+Education+of+the+Gifted&issn=01623532&date=2008-07-01&volume=31&issue=4&spage=447&author=Moon%2C+Tonya+R%3BBrighton%2C+Catherine+M>
- Moon, T. R., Brighton, C. M., & Callahan, C. M. (2003). State standardized testing programs: Friend or foe of gifted education? *Roeper Review*, 25(2), 49-60. Retrieved from http://0-vnweb.hwwilsonweb.com.lochbuie.lib.ac.cowan.edu.au/hww/shared/shared_main.html;jsessionid=3ZX3LDA3KCF3XQA3DILCFFOADUNBIIV0?requestid=16797
- Moon, T. R., Callahan, C. M., & Tomlinson, C. A. (1999). The effects of mentoring relationships on preservice teachers' attitudes toward academically diverse students. *Gifted Child Quarterly*, 43(2), 56-62. doi: 10.1177/001698629904300202
- Myers, J. (2013). Creating reflective practitioners with preservice lesson study. *International Journal of Pedagogies & Learning*, 8(1), 1-9. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1470864732?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Creating+reflective+practitioners+with+preservice+lesson+study&title=International+Journal+of+Pedagogies+%26+Learning&issn=18334105&date=2013-04-01&volume=8&issue=1&spage=1&author=Myers%2C+Julia>
- N.S.W. Government, D. o. E. a. C. (2004, 18/1/14). *Policy and implementation strategies for the education of gifted and talented students* Retrieved from https://www.det.nsw.edu.au/policies/curriculum/schools/gats/implementation_1_P_D20040051.shtml
- Neihart, M. (2007). The socioaffective impact of acceleration and ability grouping: Recommendations for best practice. *The Gifted Child Quarterly*, 51(4), 330-341. Retrieved from

- <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212104316?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=The+Socioaffective+Impact+of+Acceleration+and+Ability+Grouping%3A+Recommendations+for+Best+Practice&title=The+Gifted+Child+Quarterly&issn=00169862&date=2007-10-01&volume=51&issue=4&spage=330&author=Neihart%2C+Maureen>
- Nelson, T. J. (2012). Improving groups using the lens of the overachiever. *Voices From the Middle*, 20(2), 16-21. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1288617193?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Improving+Groups+Using+the+Lens+of+the+Overachiever&title=Voices+From+the+Middle&issn=10744762&date=2012-12-01&volume=20&issue=2&spage=16&author=Nelson%2C+Trudi+J>
- Neumeister, K. L. S., Adams, C. M., Pierce, R. L., Cassady, J. C., & Dixon, F. A. (2007). Fourth-grade teachers' perceptions of giftedness: Implications for identifying and serving diverse gifted students. *Journal for the Education of the Gifted*, 30(4), 479-499. doi: 10.4219/jeg-2007-503
- Nowikowski, S. H. (2011). *A study of the perceptions of pre-service and in-service educators on best practices for gifted students*. ProQuest LLC Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED529191&site=ehost-live&scope=site>
- http://gateway.proquest.com/openurl?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&res_dat=xri:pqdiss&rft_dat=xri:pqdiss:3453611
- O'Connor, J. (2012). Is It good to be gifted? The social construction of the gifted child. *Children & Society*, 26(4), 293-303. doi: 10.1111/j.1099-0860.2010.00341.x
- O'Reilly, C. (2013, Mar 2013). Gifted education in Ireland. *Journal for the Education of the Gifted*, 36, 97-118.
- Olenchak, F. R. (2001). Lessons learned from gifted children about differentiation. *The Teacher Educator*, 36(3), 185-199.
- Page, S. W. (2000). When changes for the gifted spur differentiation for all *Educational Leadership* 58(1), 62-65. Retrieved from <http://web.a.ebscohost.com.ezproxy.ecu.edu.au/ehost/detail/detail?sid=2c74e458-d492-4935-b974-98dade19bb55%40sessionmgr4005&vid=0&hid=4101&bdata=JnNpdGU9ZWhvca3QtbGl2ZSZzY29wZT1zaXRl>
- Passow, A. H., & Frasier, M. M. (1996). Toward improving identification of talent potential among minority and disadvantaged students. *Roeper Review*, 18, 198-202. doi: 10.1080/02783199609553734
- Pau-San, H. (2005). The linguistic advantage of the intellectually gifted child: An empirical study of spontaneous speech. *Roeper Review*, 27(3), 178-185. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/206700337?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=The+Linguistic+Advantage+of+the+Intellectually+Gifted+Child%3A+An+Empirical+Study+of+Spontaneous+Speech&title=Roeper+Review&issn=02783193&date=2005-04-01&volume=27&issue=3&spage=178&author=Pau-San+Hoh>

- Peine, M. E., & Coleman, L. J. (2010). The phenomenon of waiting in class. *Journal for the Education of the Gifted*, 34, 220-244,351-352.
- Persson, R. S. (2010). Experiences of intellectually gifted students in an egalitarian and inclusive educational system: A survey study. *Journal for the Education of the Gifted*, 33(4), 536-569. doi: 10.1177/016235321003300405
- Peters, S. J., & Gentry, M. (2012). Group-specific norms and teacher-rating scales: Implications for underrepresentation. *Journal of Advanced Academics*, 23(2), 125-144. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1027215987?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Group-Specific+Norms+and+Teacher-Rating+Scales%3A+Implications+for+Underrepresentation&title=Journal+of+Advanced+Academics&issn=1932202X&date=2012-05-01&volume=23&issue=2&spage=125&author=Peters%2C+Scott+J%3BGentry%2C+Marcia>
- Peters, W. A. M., Grager-Loidl, H., & Supplee, P. (2000). Underachievement in gifted children and adolescents: Theory and practice. In K. A. Heller, F. J. Monks, R. J. Passow & R. F. Subotnik (Eds.), *International Handbook of Giftedness and Talent*. Oxford: Elsevier Science.
- Peterson, J. S. (2009). Myth 17: Gifted and talented individuals do not have unique social and emotional needs. *The Gifted Child Quarterly*, 53(4), 280-282. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212088673?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Myth+17%3A+Gifted+and+Talented+Individuals+Do+Not+Have+Unique+Social+and+Emotional+Needs&title=The+Gifted+Child+Quarterly&issn=00169862&date=2009-10-01&volume=53&issue=4&spage=280&author=Peterson%2C+Jean+Sunde>
- Peterson, J. S., & Margolin, L. (1997). Naming gifted children: an example of unintended "reproduction". *Journal for the Education of the Gifted*, 21, 82-100.
- Pfeiffer, S. I. (2003). Challenges and opportunities for students who are gifted: What the experts say. *Gifted Child Quarterly*, 47(2), 161-169. doi: 10.1177/001698620304700207
- Pfeiffer, S. I. (2012). Current perspectives on the identification and assessment of gifted students. *Journal of Psychoeducational Assessment*, 30(1), 3-9. doi: 10.1177/0734282911428192
- Pfeiffer, S. I. (2013). Lessons learned from working with high-ability students. *Gifted Education International*, 29(1), 86-97. doi: 10.1177/0261429412440653
- Pierce, R. L., Cassady, J. C., Adams, C. M., Neumeister, K. L. S., Dixon, F. A., & Cross, T. L. (2011). The effects of clustering and curriculum on the development of gifted learners' math achievement. *Journal for the Education of the Gifted*, 34(4), 569-594. doi: 10.1177/016235321103400403
- Piirto, J. (1994). *Talented Children and Adults: Their Development and Education*. New York: Macmillan.
- Plucker, J. A. (2012). Positively influencing gifted education policy. *The Gifted Child Quarterly*, 56(4), 221. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1038123671?accountid=10675>

- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Positively+Influencing+Gifted+Education+Policy&title=The+Gifted+Child+Quarterly&issn=00169862&date=2012-10-01&volume=56&issue=4&spage=221&author=Plucker%2C+Jonathan+A>
- Plunkett, M., & Kronborg, L. (2011). Learning to be a teacher of the gifted: The importance of examining opinions and challenging misconceptions. *Gifted and Talented International*, 26(1-2), 31-46. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ959392&site=ehost-live&scope=site>
- <http://www.world-gifted.org/Publications/GnTI-Journal>
- Polyzopoulou, K., Kokaridas, D., Patsiaouras, A., & Gari, A. (2014). Teachers' perceptions toward education of gifted children in greek educational settings. *Journal of Physical Education and Sport*, 14(2), 211-221. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1547694953?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Teachers%27+perceptions+toward+education+of+gifted+children+in+greek+educational+settings&title=Journal+of+Physical+Education+and+Sport&issn=22478051&date=2014-06-01&volume=14&issue=2&spage=211&author=Polyzopoulou%2C+Konstantia%3BKokaridas%2C+Dimitrios%3BPatsiaouras%2C+Asterios%3BGari%2C+Aikaterini>
- Powers, E. A. (2008). The use of independent study as a viable differentiation technique for gifted learners in the regular classroom. *Gifted Child Today*, 31(3), 57-65. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/203260747?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=The+Use+of+Independent+Study+as+a+Viable+Differentiation+Technique+for+Gifted+Learners+in+the+Regular+Classroom&title=Gifted+Child+Today&issn=&date=2008-07-01&volume=31&issue=3&spage=57&author=Powers%2C+Elaine+A>
- Purcell, J. H., Burns, D. E., Tomlinson, C. A., Imbeau, M. B., & Martin, J. L. (2002). Bridging the gap: A tool and technique to analyze and evaluate gifted education curricular units. *Gifted Child Quarterly*, 46(4), 306-321. doi: 10.1177/001698620204600407
- Queensland Government. *P-12 curriculum, assessment and reporting framework: Curriculum provision to gifted and talented students* Retrieved from <http://education.qld.gov.au/curriculum/framework/p-12/>
- Rakow, S. R. (2008). Standards-based v. standards-embedded curriculum: Not just semantics! *Gifted Child Today*, 31(1), 43-49. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/203261135?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Standards-Based+v.+Standards-Embedded+Curriculum%3A+Not+Just+Semantics%21&title=Gifted+Child+Today&issn=&date=2008-01-01&volume=31&issue=1&spage=43&author=Rakow%2C+Susan+R>
- Ramsay, S. G., & Richards, H. C. (1997). Cooperative learning environments: Effects on academic attitudes of gifted students. *Gifted Child Quarterly*, 41(4)

- Ratcliff, N. J., Jones, C. R., Costner, R. H., Knight, C., Disney, G., Savage-Davis, E., . . . Hunt, G. H. (2012). No need to wait for Superman: A case study of one unique high school. *Journal for the Education of the Gifted*, 35(4), 391-411. doi: 10.1177/0162353212459256
- Redding, R. E. (1989). Underachievement in the verbally gifted: Implications for pedagogy. *Psychology in the Schools*, 26(3), 275-291. doi: 10.1002/1520-6807(198907)26:3<275::AID-PITS2310260310>3.0.CO;2-O
- Reis, S. M., & Boeve, H. (2009, Winter
Winter 2009). How academically gifted elementary, urban students respond to challenge in an enriched, differentiated reading program. *Journal for the Education of the Gifted*, 33, 203-240,296,298.
- Reis, S. M., & Field, G. B. (2007). Exploring the new literacies using two new approaches: The Schoolwide Enrichment Model in Reading and Renzulli Learning *The New England Reading Association Journal* 43 (1), 30-35
- Reis, S. M., Gentry, M., & Maxfield, L. R. (1998). The application of enrichment clusters to teachers' classroom practices. *Journal for the Education of the Gifted*, 21(3), 310-334. doi: 10.1177/016235329802100304
- Reis, S. M., Gentry, M., & Park, S. (1995). *Extending the pedagogy of gifted education to all students*. Research Monograph 95118. Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.
- Reis, S. M., Gubbins, E. J., Briggs, C. J., Schreiber, F. J., Richards, S., Jacobs, J. K., . . . Renzulli, J. S. (2004). Reading instruction for talented readers: Case studies documenting few opportunities for continuous progress. *Gifted Child Quarterly*, 48(4), 315-338. doi: 10.1177/001698620404800406
- Reis, S. M., & McCoach, D. B. (2000). The underachievement of gifted students: What do we know and where do we go? *Gifted Child Quarterly*, 44(3), 152-170. doi: 10.1177/001698620004400302
- Reis, S. M., & McCoach, D. B. (2002). Underachievement in gifted and talented students with special needs. *Exceptionality*, 10(2), 113-125.
- Reis, S. M., McCoach, D. B., Little, C. A., Muller, L. M., & Kaniskan, R. B. (2011). The effects of differentiated instruction and enrichment pedagogy on reading achievement in five elementary schools. *American Educational Research Journal*, 48(2), 462-501. doi: 10.3102/0002831210382891
- Reis, S. M., & Renzulli, J. S. (2004). Current research on the social and emotional development of gifted and talented students: Good news and future possibilities. *Psychology in the Schools*, 41(1), 119-130.
- Reis, S. M., & Renzulli, J. S. (2009). Myth 1: The gifted and talented constitute one single homogeneous group and giftedness is a way of being that stays in the person over time and experiences. *The Gifted Child Quarterly*, 53(4), 233-235. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212088649?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Myth+1%3A+The+Gifted+and+Talented+Constitute+One+Single+Homogeneous+Group+and+Giftedness+Is+a+Way+of+Being+That+Stays+in+the+Person+Over+Time+and+Experiences&title=The+Gifted+Child+Quarterly&issn=00169862&date=2009-10-01&volume=53&issue=4&spage=233&author=Reis%2C+Sally+M%3BRenzulli%2C+Joseph+S>

- Reis, S. M., & Westberg, K. L. (1994). The impact of staff development on teachers' ability to modify curriculum for gifted and talented students. *The Gifted Child Quarterly*, 38(3), 127-135.
- Reis, S. M., Westberg, K. L., Kulikowich, J., Caillard, F., Hébert, T., Plucker, J., . . . Smist, J. M. (1993). *Why not let high ability students start school in January? The curriculum compacting study*. ((Research Monograph 93106)). Storrs, CT.
- Reis, S. M., Westberg, K. L., Kulikowich, J. M., & Purcell, J. H. (1998). Curriculum compacting and achievement test scores: What does the research say? *Gifted Child Quarterly*, 42(2), 123-129. doi: 10.1177/001698629804200206
- Renzulli, J. S. (1978). What makes giftedness?: Re-examining a definition. *Phi Delta Kappan*, 60(3), 180-184, 261.
- Renzulli, J. S. (1986). The three ring conception of giftedness: A developmental model for creative productivity. In R. J. Sternberg & J. E. Davidson (Eds.), *Conceptions of giftedness* (pp. 53-92). New York: Cambridge University Press.
- Renzulli, J. S. (1995). *Building a bridge between gifted education and total school improvement*.
- Renzulli, J. S. (1997). The total talent portfolio: Looking at the best in every student. *Gifted Education International*, 12(2), 59-63.
- Renzulli, J. S. (2005). Applying gifted education pedagogy to total talent development for all students. *Theory Into Practice*, 44(2), 80-89.
- Renzulli, J. S. (2012). Reexamining the role of gifted education and talent development for the 21st century: A four-part theoretical approach. *The Gifted Child Quarterly*, 56(3), 150. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1020327134?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Reexamining+the+Role+of+Gifted+Education+and+Talent+Development+for+the+21st+Century%3A+A+Four-Part+Theoretical+Approach&title=The+Gifted+Child+Quarterly&issn=00169862&date=2012-07-01&volume=56&issue=3&spage=150&author=Renzulli%2C+Joseph+S>
- Renzulli, J. S., Koehler, J. L., & Fogarty, E. A. (2006). Operation Houndstooth intervention theory: Social capital in today's schools. *Gifted Child Today*, 29(1), 14-24.
- Renzulli, J. S., & Reis, S. M. (1994). Research related to the schoolwide enrichment model. *Gifted Child Quarterly*, 38(1), 7-20.
- Renzulli, J. S., & Reis, S. M. (2012). A virtual learning application of the schoolwide enrichment model and high-end learning theory. *Gifted Education International*, 28(1), 19-40. doi: 10.1177/0261429411424382
- Repinc, U., & Juznic, P. (2013). Guided inquiry projects: enrichment for gifted pupils. *School Libraries Worldwide*, 19, 114+. Retrieved from <http://go.galegroup.com.ezproxy.ecu.edu.au/ps/i.do?id=GALE%7CA339919517&v=2.1&u=cowan&it=r&p=AONE&sw=w&asid=4ea93116328fd41ae496a6e1849dd239>
- Riedl, J., & Cross, T. L. (2005). Social dominance, moral politics, and gifted education. *Roeper Review*, 28(1), 21-29. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/206699761?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Social+Dominance%2C+Moral+Politics%2C+and+Gifted+Education&title=Roeper+Re>

- [view&issn=02783193&date=2005-10-01&volume=28&issue=1&spage=21&author=Jennifer+Riedl+Cross%3BCross%2C+Tracy+L](#)
- Riley, T., & Sturgess, A. (2005). Professional development to support gifted and talented education in New Zealand. *Australasian Journal of Gifted Education*, 14(1), 36-49. Retrieved from http://ecu.summon.serialssolutions.com/2.0.0/link/0/eLvHCXMwnV2xTsMwED2hTixACwgKSPcDQa3PTWJVHSrUCsSSIXtlbAdlcStl_x_bcUhBnbp6sE6yfX4-v3sPgNjzJPmXEyiXGVPKCJ6nqTe3EkJlQqIUU8rz0GrVV9F7kmVc7VZDtG46yrSvTJcud83di3SxXL0V5Vz7s8t5FnQ_eea9DN59taXNyTOK_57EKBGpb5w-6JcPV8n68tcvtaOQRAZh147zR6LxhMiu4CKCTFy2u2IIZ8aOvD9z5HJcQ1EcKHKg7oID2Gzxe7_zoBw_68rBUZRWo0PoXrtTo-nmwNqiS5AYuZE3MF6vypfXxle52bUSFps2lrqFgd1acwcoJqySUswcupJcOdxH2uQV-zAkaEpTdq-jlxOMj44-wHkQOA21ikcYNF978xTMOH4AmcSetQ
- Rinn, A. N. (2012). Implications for addressing the psychosocial needs of gifted individuals: A response to Subotnik, Olszewski-Kubilius, and Worrell (2011). *The Gifted Child Quarterly*, 56(4), 206. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1038123666?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Implications+for+Addressing+the+Psychosocial+Needs+of+Gifted+Individuals%3A+A+Response+to+Subotnik%2C+Olszewski-Kubilius%2C+and+Worrell+%282011%29&title=The+Gifted+Child+Quarterly&issn=00169862&date=2012-10-01&volume=56&issue=4&spage=206&author=Rinn%2C+Anne+N>
- Rizza, M. G., & Morrison, W. F. (2003). Uncovering stereotypes and identifying characteristics of gifted students and students with emotional/behavioral disabilities. *Roeper Review*, 25(2), 73-77.
- Effects of academic acceleration on the social-emotional status of gifted students 2* (The Connie Belin and Jaqueline N. Blank International Centre for Gifted Education and Talent Development, College of Education, The University of Iowa. 2004)
- Rogers, K. B. (1991). *The relationship of grouping practices to the education of the gifted and talented learner* (RBDM 9102). The National Research Center on the Gifted and Talented, University of Connecticut., Storrs, CT.
- Rogers, K. B. (1993). Grouping the gifted and talented: Questions and answers. *Roeper Review*, 16, 8-12. doi: 10.1080/02783199309553526
- Rogers, K. B. (1998). Using current research to make "good" decisions about grouping. *National Association of Secondary School Principals. NASSP Bulletin*, 82(595), 38-46. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/216028863?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Using+current+research+to+make+%22good%22+decisions+about+grouping&title=National+Association+of+Secondary+School+Principals.+NASSP+Bulletin&issn=01926365&date=1998-02-01&volume=82&issue=595&spage=38&author=Rogers%2C+Karen+B>
- Rogers, K. B. (2002). Grouping the gifted and talented: Questions and answers. *Roeper Review*, 24(3), 103-107. doi: 10.1080/02783190209554140

- Rogers, K. B. (2007). Lessons learned about educating the gifted and talented: A synthesis of the research on educational practice. *The Gifted Child Quarterly*, 51(4), 382-396. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212096671?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Lessons+Learned+About+Educating+the+Gifted+and+Talented%3A+A+Synthesis+of+the+Research+on+Educational+Practice&title=The+Gifted+Child+Quarterly&issn=00169862&date=2007-10-01&volume=51&issue=4&spage=382&author=Rogers%2C+Karen+B>
- Rosselli, H. (1993). Process differentiation for gifted students in the regular classroom: Teaching to everyone's needs. In C. J. Maker (Ed.), *Critical Issues in Gifted Education Programs for the Gifted in Regular Classrooms* (Vol. 3, pp. 139-155): Pro-Ed, USA.
- Rowley, J. (2008). Teaching strategies to facilitate learning for gifted and talented students. *Australasian Journal of Gifted Education*, 17(2), 36-42. Retrieved from <http://search.informit.com.au/documentSummary;dn=720828846652095;res=IELHSS>
- Rowley, J. (2012). Professional development needs of teachers to identify and cater for gifted students. *Australasian Journal of Gifted Education*, 21(2), 75-80. Retrieved from <http://search.informit.com.au/fullText;res=AEIPT;dn=198176>
- Rubenstein, L. D., Siegle, D., Reis, S. M., McCoach, D. B., & Burton, M. G. (2012). A complex quest: The development and research of underachievement interventions for gifted students. *Psychology in the Schools*, 49(7), 678-694. doi: 10.1002/pits.21620
- Ryan, R. M., & Weinstein, N. (2009). Undermining quality teaching and learning: A self-determination theory perspective on high-stakes testing. *Theory and Research in Education*, 7(2), 224-233. doi: 10.1177/1477878509104327
- Ryser, G. R., & Johnsen, S. K. (1996). Towards more research on effective practices with gifted students in general education settings. *Journal for the Education of the Gifted*, 19(4), 481-496.
- Salkind, N. J., & Rasmussen, K. (2008). *Encyclopedia of educational psychology*. Thousand Oaks, Calif: Sage Publications.
- Sankar-DeLeeuw, N. (2004). Case studies of gifted kindergarten children: Profiles of Promise. *Roeper Review* 26(4), 192-207.
- Schofield, W. (2006). Survey Sampling. In R. Sapsford & V. Jupp (Eds.), *Data Collection and Analysis* (2nd ed., pp. 26-57). London, England: SAGE Publications Ltd. doi: <http://dx.doi.org/10.4135/9781849208802>
- Schroth, S. T., & Heifer, J. A. (2008). Identifying gifted students: Educator beliefs regarding various policies, processes, and procedures. *Journal for the Education of the Gifted*, 32(2), 155-179.
- Schroth, S. T., & Helfer, J. A. (2009). Practitioners' conceptions of academic talent and giftedness: essential factors in deciding classroom and school composition. *Journal of Advanced Academics*, 20(3), 384-403. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/detail?accno=EJ860955>
- Scot, T. P., Callahan, C. M., & Urquhart, J. (2008). Paint-by-number teachers and cookie-cutter students: The unintended effects of high-stakes testing on the education of gifted students. *Roeper Review*, 31(1), 40-52. doi: 10.1080/02783190802527364

- Scott, S., Webber, C. F., Aitken, N., & Lupart, J. (2011). Developing teachers' knowledge, beliefs, and expertise: Findings from the Alberta Student Assessment Study. *The Educational Forum*, 75(2), 96-113. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/863245747?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Developing+Teachers%27+Knowledge%2C+Beliefs%2C+and+Expertise%3A+Finding+From+the+Alberta+Student+Assessment+Study&title=The+Educational+Forum&issn=00131725&date=2011-04-01&volume=75&issue=2&spage=96&author=Scott%2C+Shelleyann%3BWebber%2C+Charles+F%3BAitken%2C+Nola%3BLupart%2C+Judy>
- Seedorf, S. (2014). Response to intervention: Teachers' needs for implementation in gifted and talented programs. *Gifted Child Today*, 37(4), 248-257. doi: 10.1177/1076217514544029
- Sellers, D. M. (2008). *Factors influencing teachers' differentiated curriculum and instructional choices and gifted and non-gifted students' self-perceptions*. 3325178 (Ed.D.). University of Southern California, Ann Arbor. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/304462467?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Factors+influencing+teachers%27+differentiated+curriculum+and+instructional+choices+and+gifted+and+non-gifted+students%27+self-perceptions&title=Factors+influencing+teachers%27+differentiated+curriculum+and+instructional+choices+and+gifted+and+non-gifted+students%27+self-perceptions&issn=&date=2008-01-01&volume=&issue=&spage=&author=Sellers%2C+Dena+M>
- Senate Employment, Workplace Relations, Small Business, & Education Reference Committee. (2001). *The education of gifted children*. Canberra, Australia: : Commonwealth of Australia.
- Senate Select Committee. (1988). *The education of gifted and talented children*. Canberra, Australia: Australian Government Publishing Service.
- Shields, C. M. (1996). To group or not to group academically talented or gifted students? *Educational Administration Quarterly*, 32(2), 295-323.
- Shore, B. M., & Delcourt, M. A. B. (1996). Effective curricular and program practices in gifted education and the interface with general education. *Journal for the Education of the Gifted*, 20(2), 138-154.
- Siegle, D., Moore, M., Mann, R. L., & Wilson, H. E. (2010). Factors that influence in-service and preservice teachers' nominations of students for gifted and talented programs. *Journal for the Education of the Gifted*, 33(3), 337-360,438-440. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/222271222?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Factors+That+Influence+In-Service+and+Preservice+Teachers%27+Nominations+of+Students+for+Gifted+and+Talented+Programs&title=Journal+for+the+Education+of+the+Gifted&issn=01623532&date=2010-04-01&volume=33&issue=3&spage=337&author=Siegle%2C+Del%3BMoore%2C+Michelle%3BMann%2C+Rebecca+L%3BWilson%2C+Hope+E>

- Siegle, D., & Powell, T. (2004). Exploring teacher biases when nominating students for gifted programs. *Gifted Child Quarterly*, v. 48(no. 1), p. 21-29.
- Siegle, D., Wilson, H. E., & Little, C. A. (2013). A sample of gifted and talented educators' attitudes about academic acceleration. *Journal of Advanced Academics*, 24(1), 27-51. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1432297841?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=A+Sample+of+Gifted+and+Talented+Educators%27+Attitudes+About+Academic+Acceleration&title=Journal+of+Advanced+Academics&issn=1932202X&date=2013-02-01&volume=24&issue=1&spage=27&author=Siegle%2C+Del%3BWilson%2C+H+ope+E%3BLittle%2C+Catherine+A>
- Silverman, L. K. (1998). Through the lens of giftedness. *Roeper Review*, 20(February 1998), 204-210. Retrieved from http://0-vnweb.hwwilsonweb.com.lochbuie.lib.ac.cowan.edu.au/hww/shared/shared_main.jhtml;jsessionid=QSKLJOBREBL41QA3DILSFFWADUNBIIV0?_requestid=70418
- Skuse, A. (2014). How have I developed my own personal views of gifts and talents in education and how does this influence what I do in the classroom? *Gifted Education International*, 30(3), 271-280. doi: 10.1177/0261429412467107
- Slavin, R. E. (1990). Point-counterpoint: ability grouping, cooperative learning and the gifted. *Journal for the Education of the Gifted*, 14(1), 3-8. doi: 10.1177/016235329001400102
- Sternberg, R. J. (1985). *Beyond IQ, a triarchic theory of human intelligence*. New York: Viking.
- Sternberg, R. J. (1995). *A triarchic approach to giftedness*. Research Monograph 95126. Storrs, CT.
- Sternberg, R. J. (2003). WICS as a model of giftedness. *High Ability Studies*, 14(2), 109-137. doi: 10.1080/1359813032000163807
- Sternberg, R. J. (2007). Cultural concepts of giftedness. *Roeper Review*, 29(3), 160-165. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/206711083?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Cultural+Concepts+of+Giftedness&title=Roeper+Review&issn=02783193&date=2007-04-01&volume=29&issue=3&spage=160&author=Sternberg%2C+Robert+J>
- Sternberg, R. J. (2012). Intelligence. *Wiley Interdisciplinary Reviews: Cognitive Science*, 3(5), 501-511. doi: 10.1002/wcs.1193
- Stoeger, H., & Ziegler, A. (2010). Do pupils with differing cognitive abilities benefit similarly from a self-regulated learning training program? *Gifted Education International*, 26(1), 110-123. doi: 10.1177/026142941002600113
- Subotnik, R. F., Olszewski-Kubilius, P., & Worrell, F. C. (2012). A proposed direction forward for gifted education based on psychological science. *The Gifted Child Quarterly*, 56(4), 176. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1038123640?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=A+Proposed+Direction+Forward+for+Gifted+Education+Based+on+Psychological+Science&title=The+Gifted+Child+Quarterly&issn=00169862&date=2012-10->

[01&volume=56&issue=4&spage=176&author=Subotnik%2C+Rena+F%3BOlszewski-Kubilius%2C+Paula%3BWorrell%2C+Frank+C](#)

- Sugishita, J. (2003). Classroom inquiry in pre-service training: The experiences of six teacher interns. *Action in Teacher Education*, 25(2), 1-8.
- Sunday, O. O., Festus, E. O., Stephanie, L. O., Tachelle, B., Sean, W., & Natalie, S. (2014). Giftedness as it relates to culturally and linguistically diverse students *Gifted Education: Current Perspectives and Issues* (Vol. 26, pp. 71-100): Emerald Group Publishing Limited. doi: doi:10.1108/S0270-4013(2014)0000026004
10.1108/S0270-4013(2014)0000026004
- Swiatek, M. A., & Lupkowski-Shoplik, A. (2003). Elementary and middle school student participation in gifted programs: Are gifted students underserved? *Gifted Child Quarterly*, 47(2), 118-130. doi: 10.1177/001698620304700203
- Taplin, M. (1996). Student teachers providing programmes for gifted and talented children: A co-operative venture between university and school. *Gifted Education International*, 11(2), 95.
- Taylor, T., & Milton, M. (2006). Preparation for teaching gifted students: An investigation in to university courses in Australia. *Australasian Journal of Gifted Education*, 15(1), 25-31.
- Taylor, T., & Milton, M. (2008). Teacher education in catering for gifted learners. *Gifted*,(149), 11-14.
- Terman, L. M. (1916). The Uses of Intelligence Tests *The Measurement of Intelligence* (pp. chapter 1). Boston: Houghton Mifflin. Retrieved from <http://psychclassics.yorku.ca/Terman/terman1.htm>
- Terman, L. M. (1925). *Genetic studies of genius*. Stanford, Calif: Stanford University Press.
- The Australian Senate. (1988). *The Report of the Senate Select Committee on The Education of Gifted and Talented Children*. Canberra: Commonwealth of Australia.
- The Australian Senate. (2001). *The Education of Gifted Children*. Canberra: Commonwealth of Australia. Retrieved from http://www.aph.gov.au/senate/committee/eet_ctte/completed_inquiries/1999-02/gifted/report/contents.htm
- http://pandora.nla.gov.au/pan/25300/20020605-0000/www.aph.gov.au/senate/committee/EET_CTTE/gifted/report/contents.htm
- The Columbus Group. (1991). Unpublished transcript of the meeting of the Columbus Group. Columbus, Ohio.
- The Department of Education Tasmania. (2012). *Extended Learning for Gifted Students Procedures* Retrieved from http://www.education.tas.gov.au/About_us/Pages/Policies.aspx
- Thompson, D. D., & McDonald, D. M. (2007). Examining the influence of teacher-constructed and student-constructed assignments on the achievement patterns of gifted and advanced sixth-grade students. *Journal for the Education of the Gifted*, 31(2), 198-226. doi: 10.4219/jeg-2007-676
- Thompson, L. A., & Oehlert, J. (2010). The etiology of giftedness. *Learning and Individual Differences*, 20(4), 298-307. doi: <http://dx.doi.org/10.1016/j.lindif.2009.11.004>
- Tieso, C. L. (2003). Ability grouping is not just tracking anymore. *Roeper Review*, 26(1), 29-36. Retrieved from <http://0->

vnweb.hwwilsonweb.com.lochbuie.lib.ac.cowan.edu.au/hww/shared/shared_main.html;jsessionid=3ZX3LDA3KCF3XQA3DILCFFOADUNBIIV0?_requestid=16797

- Tieso, C. L. (2004). Through the looking glass: One school's reflections on differentiation. *Gifted Child Today*, 27(4), 58-62. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/203256858?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=THROUGH+THE+LOOKING+GLASS%3A+One+School%27s+Reflections+on+Differentiation&title=Gifted+Child+Today&issn=&date=2004-10-01&volume=27&issue=4&spage=58&author=Tieso%2C+Carol>
- Tieso, C. L. (2005). The effects of grouping practices and curricular adjustments on achievement. *Journal for the Education of the Gifted*, 29(1), 60-89.
- Tomlinson, C. A. (1995). Deciding to differentiate in middle school: One school's journey. *Gifted Child Quarterly*, 39(2), 77-87.
- Tomlinson, C. A. (2004). Sharing responsibility for differentiating instruction. *Roeper Review*, 26(4), 188-189. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/206706064?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Sharing+Responsibility+for+Differentiating+Instruction&title=Roeper+Review&issn=02783193&date=2004-07-01&volume=26&issue=4&spage=188&author=Tomlinson%2C+Carol+Ann>
- Tomlinson, C. A. (2005). Quality curriculum and instruction for highly able students. *Theory into Practice*, 44(2), 160-166. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/218799583?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Quality+Curriculum+and+Instruction+for+Highly+Able+Students&title=Theory+into+Practice&issn=00405841&date=2005-04-01&volume=44&issue=2&spage=160&author=Tomlinson%2C+Carol+Ann>
- Tomlinson, C. A., Brighton, C., & Hertberg, H. (2003). Differentiating instruction in response to student readiness, interest, and learning profile in academically diverse classrooms: A review of literature. *Journal for the Education of the Gifted*, 27(2/3), 119-145.
- Tomlinson, C. A., Callahan, C. M., Moon, T., Tomchin, E. M., Landrum, M., Imbeau, M., . . . Eiss, N. (1995). *Preservice teacher preparation in meeting the needs of gifted and other academically diverse students*. ((Research Monograph 95134).). Storrs, CT.
- Tomlinson, C. A., Tomchin, E. M., Callahan, C. M., Adams, C. M., Pizzat-Tinnin, P., Cunningham, C. M., . . . Imbeau, M. (1994). Practices of preservice teachers related to gifted and other academically diverse learners. *Gifted Child Quarterly*, 38(3), 106-114. doi: 10.1177/001698629403800303
- Treffinger, D. J. (1998). From gifted education to programming for talent development. *Phi Delta Kappan*, 79(10), 752-755. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/218539721?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=From+gifted+education+to+programming+for+talent+development&title=Phi+Delta+Ka>

- [ppan&issn=00317217&date=1998-06-01&volume=79&issue=10&spage=752&author=Treffinger%2C+Donald+J](http://ezproxy.ecu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=73752928&site=ehost-live&scope=site)
- van Deur, P. (2011). Views of gifted elementary students about self-directed learning. *Gifted & Talented International*, 26(1/2), 111-120. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=73752928&site=ehost-live&scope=site>
- Van Tassel-Baska, J. (1986). Lessons from the history of teacher inservice in Illinois: Effective staff development in the education of gifted students. *Gifted Child Quarterly*, 30(3), 124-126. doi: 10.1177/001698628603000306
- Van Tassel-Baska, J. (1992). Educational decision making on acceleration and grouping. *Gifted Child Quarterly*, 36(2), 68-72. doi: 10.1177/001698629203600203
- Van Tassel-Baska, J. (2005). Gifted programs and services: What are the nonnegotiables? *Theory into Practice*, Vol. 44(2), 90-97. Retrieved from <http://0-proquest.umi.com.library.ecu.edu.au/pqdweb?did=834010921&sid=2&Fmt=3&clientid=7582&RQT=309&VName=PQD>
- Van Tassel-Baska, J. (2006). A content analysis of evaluation findings across 20 gifted programs: A clarion call for enhanced gifted program development. *The Gifted Child Quarterly*, 50(3), 199-215,273. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212104241?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=A+Content+Analysis+of+Evaluation+Findings+Across+20+Gifted+Programs%3A+A+Clarion+Call+for+Enhanced+Gifted+Program+Development&title=The+Gifted+Child+Quarterly&issn=00169862&date=2006-07-01&volume=50&issue=3&spage=199&author=VanTassel-Baska%2C+Joyce>
- Van Tassel-Baska, J. (2012). Analyzing differentiation in the classroom: Using the COS-R. *Gifted Child Today*, 35(1), 42-48. doi: 10.1177/1076217511427431
- Van Tassel-Baska, J. (2013). Curriculum issues: curriculum, instruction, and assessment for the gifted: A problem-based learning scenario. *Gifted Child Today*, 36(1), 71-75. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/141902016?accountid=10675>
- <http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Curriculum+Issues%3A+Curriculum%2C+Instruction%2C+and+Assessment+for+the+Gifted%3A+A+Problem-Based+Learning+Scenario&title=Gifted+Child+Today&issn=&date=2013-01-01&volume=36&issue=1&spage=71&author=VanTassel-Baska%2C+Joyce%2C+EdD>
- Van Tassel-Baska, J. (2014). Curriculum issues: Artful inquiry: The use of questions in working with the gifted. *Gifted Child Today*, 37(1), 48-50. doi: 10.1177/1076217513509621
- Van Tassel-Baska, J. (2015, Mar 2015). Theories of giftedness: Reflections on James Gallagher's work. *Journal for the Education of the Gifted*, 38, 18-23.
- Van Tassel-Baska, J., Avery, L. D., Little, C., & Hughes, C. (2000). An evaluation of the implementation of curriculum innovation: The impact of the William and Mary units on schools. *Journal for the Education of the Gifted*, 23(2), 244-272.
- Van Tassel-Baska, J., Bracken, B., Feng, A., & Brown, E. (2009, Fall

- Fall 2009). A longitudinal study of enhancing critical thinking and reading comprehension in Title I classrooms. *Journal for the Education of the Gifted*, 33, 7-37, 144-145.
- Van Tassel-Baska, J., & Brown, E. F. (2007). Toward best practice: An analysis of the efficacy of curriculum models in gifted education. *Gifted Child Quarterly*, 51(4), 342-358. doi: 10.1177/0016986207306323
- Van Tassel-Baska, J., & Johnsen, S. K. (2007). Teacher education standards for the field of gifted education. *Gifted Child Quarterly*, 51(182), 182-205.
- Van Tassel-Baska, J., Johnson, D. T., Hughes, C. E., & Boyce, L. N. (1996). A study of language arts curriculum effectiveness with gifted learners. *Journal for the Education of the Gifted*, 19(4), 461.
- Van Tassel-Baska, J., Quek, C., & Annie Xuemei, F. (2007). The development and use of a structured teacher observation scale to assess differentiated best practice. *Roepers Review*, 29(2), 84-92. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/206711400?accountid=10675>
<http://kx7qx4pm8t.search.serialsolutions.com/?&genre=article&sid=ProQ:&atitle=The+Development+and+Use+of+a+Structured+Teacher+Observation+Scale+to+Assess+Differentiated+Best+Practice&title=Roepers+Review&issn=02783193&date=2007-01-01&volume=29&issue=2&epage=84&author=VanTassel-Baska%2C+Joyce%3BQuek%2C+Chwee%3BAnnie+Xuemei+Feng>
- Van Tassel-Baska, J., & Stambaugh, T. (2005). Challenges and possibilities for serving gifted learners in the regular classroom. *Theory into Practice*, 44(3), 211-217. Retrieved from http://0-vnweb.hwwilsonweb.com.library.ecu.edu.au/hww/shared/shared_main.jhtml;jsessionid=SZXY12SIMWU0DQA3DINCFGGADUNGIIV0?requestid=234707
- Van Tassel-Baska, J., Xuemei Feng, A., Brown, E., Bracken, B., Stambaugh, T., French, H., . . . Wenyu Bai. (2008). A study of differentiated instructional change over 3 years. *Gifted Child Quarterly*, 52(4), 297-312. doi: 10.1177/0016986208321809
- Van Tassel-Baska, J., Zuo, L., Avery, L. D., & Little, C. A. (2002). A curriculum study of gifted-student learning in the language arts. *Gifted Child Quarterly*, 46(1), 30-44. doi: 10.1177/001698620204600104
- Vialle, W. (2007). Pink or Paris?: Giftedness in popular culture. *Australasian Journal of Gifted Education*, 16(1), 5-11. Retrieved from <http://search.informit.com.au/documentSummary;dn=797056332069391;res=IELHSS>
- Vialle, W., Ashton, T., Carlon, G., & Rnkin, F. (2001). Acceleration: A coat of many colours. *Roepers Review*, 24(1), 14-19. Retrieved from <http://0-vnweb.hwwilsonweb.com.library.ecu.edu.au:80/hww/jumpstart.jhtml?recid=0bc05f7a67b1790e6d254896be429b31a46e3cc3b5db367efe99d2f115a046e6f5c7df515280d079&fmt=H>>Vialle, W., et. al., Acceleration: a coat of many colours. *Roepers Review* v. 24 no. 1 (Fall 2001) p. 14-19
- Vialle, W., & Rogers, K. B. (2009). *Educating the Gifted Learner* Terrigal, N.S.W.: David Barlow Publishing.
- Vialle, W., & Rogers, K. B. (2012). Gifted, talented, or educationally disadvantaged? The case for including 'giftedness' in teacher education programs In C. Forlin (Ed.), *Future directions for inclusive teacher education: An international perspective* (pp. 114-122). London: Routledge. . London: Routledge

- Victorian Government, & Development, D. o. E. a. E. C. (2013, 28 September 2013). A Model of Giftedness. Retrieved from <http://www.education.vic.gov.au/school/teachers/teachingresources/diversity/Pages/giftedmodel.aspx>
- Vogl, K., & Preckel, F. (2014). Full-Time Ability Grouping of Gifted Students: Impacts on Social Self-Concept and School-Related Attitudes. *Gifted Child Quarterly*, 58(1), 51-68. doi: 10.1177/0016986213513795
- Walker, B., Hafenstien, N. L., & Crow-Enslow, L. (1999). Children are not all the same - meeting the needs of gifted learners in the early childhood classroom. *Young Children*, 54(1), 32.
- Watters, J. J., Hudson, S., & Hudson, P. (2013). Orienting preservice teachers towards gifted education: School university partnerships *Australasian Journal of Gifted Education*, 22(2), 32-44. Retrieved from <<http://search.informit.com.au.ezproxy.ecu.edu.au/documentSummary;dn=861032157390636;res=IELAPA>> ISSN: 1323-9686. [cited 04 Jan 15].
- Weber, C. L., Johnson, L., & Tripp, S. (2013). Implementing differentiation: A school's journey. *Gifted Child Today*, 36(3), 179-186. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1419019966?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Implementing+Differentiation%3A+A+School%27s+Journey&title=Gifted+Child+Today&issn=&date=2013-07-01&volume=36&issue=3&spage=179&author=Weber%2C+Christine+L%2C+PhD%3BJohnson%2C+Linda%2C+EdD%3BTripp%2C+Shane%2C+BSEd>
- Wellisch, M., Brown, J., & Knight, R. (2012). Gifted and misunderstood : mothers' narratives of their gifted children's socio-emotional adjustment and educational challenge. *Australasian Journal of Gifted Education*, 21(2), 5-18. Retrieved from <http://search.informit.com.au/fullText;res=AEIPT;dn=197305>
- Welsh, M. E. (2011). Measuring teacher effectiveness in gifted education: Some challenges and suggestions. *Journal of Advanced Academics*, 22(5), 750-770. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1024823570?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Measuring+Teacher+Effectiveness+in+Gifted+Education%3A+Some+Challenges+and+Suggestions&title=Journal+of+Advanced+Academics&issn=1932202X&date=2011-11-01&volume=22&issue=5&spage=750&author=Welsh%2C+Megan+E>
- Westberg, K. L. (1993). The classroom practices observation study. *Journal for the Education of the Gifted*, 16, 461-480.
- Westberg, K. L., & Archambault, F. X. (1997). A multi-site case study of successful classroom practices for high ability students. *Gifted Child Quarterly*, 41(1), 42-51.
- Westberg, K. L., Archambault, F. X., Jr, & Brown, S. W. (1997). A survey of classroom practices with third and fourth grade students in the united states. *Gifted Education International*, 12(1), 29-33.
- Westberg, K. L., Archambault, F. X., Jr., , Dobyys, S. M., & Salvin, T. (1993). *An observational study of instructional and curricular practices used with gifted and talented students in regular classrooms*. ((Research Monograph 93104)). Storrs, CT.

- Westberg, K. L., & Daoust, M., E. (2003). The results of the replication of the classroom practices survey replication in two states. *NRC/GT Newsletters*, (Fall 2003), Retrieved from <http://nrcgt.uconn.edu/newsletters/fall032/>
- Whitlock, M. S., & DuCette, J. P. (1989). Outstanding and average teachers of the gifted: A comparative study. *The Gifted Child Quarterly*, 33(1), 15. Retrieved from <http://0-proquest.umi.com.library.ecu.edu.au/pqdweb?did=3097510&sid=1&Fmt=2&clientId=7582&RQT=309&VName=PQD>
- Whitton, D. (1997). Regular classroom practices with gifted students in grades 3 and 4 in New South Wales, Australia. *Gifted Education International*, 12(1), 34-38.
- Whitton, D. (2006). The training of teachers of gifted students in universities in Australia. *Gifted Education International*, 21(2-3), 190-200. doi: 10.1177/026142940602100310
- Willard-Holt, C., Weber, J., Morrison, K. L., & Horgan, J. (2013). Twice-exceptional learners' perspectives on effective learning strategies. *The Gifted Child Quarterly*, 57(4), 247. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1433114717?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Twice-Exceptional+Learners%27+Perspectives+on+Effective+Learning+Strategies&title=The+Gifted+Child+Quarterly&issn=00169862&date=2013-10-01&volume=57&issue=4&spage=247&author=Willard-Holt%2C+Colleen%3BWeber%2C+Jessica%3BMorrison%2C+Kristen+L%3BHorgan%2C+Julia>
- Wood, D. (2009). Project Gifted: Using a project-based approach to developing teacher understanding of gifted education. *Australasian Journal of Gifted Education*, 18(1), 48-55. Retrieved from <http://search.informit.com.au/fullText;res=AEIPT;dn=177415>
- Worrell, F. C., & Erwin, J. O. (2011). Best practices in identifying students for gifted and talented education programs. *Journal of Applied School Psychology*, 27(4), 319-340. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ947118&site=ehost-live&scope=site>
<http://dx.doi.org/10.1080/15377903.2011.615817>
- Worrell, F. C., Olszewski-Kubilius, P., & Subotnik, R. F. (2012). Important issues, some rhetoric, and a few straw men: A response to comments on "Rethinking giftedness and gifted education". *The Gifted Child Quarterly*, 56(4), 224. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1038127256?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Important+Issues%2C+Some+Rhetoric%2C+and+a+Few+Straw+Men%3A+A+Response+to+Comments+on+%22Rethinking+Giftedness+and+Gifted+Education%22&title=The+Gifted+Child+Quarterly&issn=00169862&date=2012-10-01&volume=56&issue=4&spage=224&author=Worrell%2C+Frank+C%3BOlszewski-Kubilius%2C+Paula%3BSubotnik%2C+Rena+F>
- Young, M. H., & Balli, S. J. (2014). Gifted and talented education (GATE): Student and parent perspectives. *Gifted Child Today*, 37(4), 236-246. doi: 10.1177/1076217514544030

- Zentall, S. S., Moon, S. M., Hall, A. M., & Grskovic, J. A. (2001). Learning and motivational characteristics of boys with AD/HD and/or giftedness. *Exceptional Children*, 67(4), 499-519. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/201093515?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Learning+and+motivational+characteristics+of+boys+with+AD%2FHD+and%2FFor+giftedness&title=Exceptional+Children&issn=00144029&date=2001-07-01&volume=67&issue=4&spage=499&author=Zentall%2C+Sydney+S%3BMoon%2C+Sidney+M%3BHall%2C+Arlene+M%3BGrskovic%2C+Janice+A>
- Ziegler, A., & Phillipson, S. N. (2012). Towards a systemic theory of gifted education. *High Ability Studies*, 23(1), 3-30.
- Ziegler, A., & Stoeger, H. (2004). Identification based on ENTER within the conceptual frame of the actiotope model of giftedness. *Psychology Science*, 46(3), 324-341. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/212161162?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Identification+based+on+ENTER+within+the+conceptual+frame+of+the+actiotope+model+of+giftedness&title=Psychology+Science&issn=16149947&date=2004-07-01&volume=46&issue=3&spage=324&author=Ziegler%2C+Albert%3BSt%3B%2C+Heidrun>
- Ziegler, A., Stoeger, H., & Vialle, W. (2012). Giftedness and gifted education: The need for a paradigm change. *The Gifted Child Quarterly*, 56(4), 194. Retrieved from <http://ezproxy.ecu.edu.au/login?url=http://search.proquest.com/docview/1038127248?accountid=10675>
<http://kx7gx4pm8t.search.serialssolutions.com/?&genre=article&sid=ProQ:&atitle=Giftedness+and+Gifted+Education%3A+The+Need+for+a+Paradigm+Change&title=The+Gifted+Child+Quarterly&issn=00169862&date=2012-10-01&volume=56&issue=4&spage=194&author=Ziegler%2C+Albert%3BStoeger%2C+Heidrun%3BVialle%2C+Wilma>
- Ziegler, A., Stoeger, H., Vialle, W., & Wimmer, B. (2012). Diagnosis of self-regulated learning profiles. *Australasian Journal of Gifted Education*, 21(2), 62-74. Retrieved from <http://search.informit.com.au/fullText;res=AEIPT;dn=198175>

Appendices

Appendix 1:

List of 35 Instructional Strategies

Strategies that Provide Challenge

- Use basic skills worksheets. (*included to show contrast with other strategies*)
- Use extension worksheets.
- Assign advanced level reading material.
- Provide support for students to enter competitions (e.g. allow class time to work on entry).
- Provide a more advanced unit based on higher-level outcome statements.
- Provide opportunities for students to use programmed or self-instructional learning material at their own pace.

Strategies that Promote Thinking Skills

- Teach thinking skills in the regular curriculum (e.g. CoRT Thinking strategies, Six Thinking Hats, critical thinking, creative problem solving).
- Participate in a competitive program focussing on thinking skills/problem solving, such as Tournament of Minds or Future Problem Solving.
- Provide curriculum which includes investigation of real world situations or problems.
- Provide questions which require students to explain their thinking and provide evidence of reasoning.
- Engage students in questions and activities based on higher level thinking skills (such as Bloom's Taxonomy).

Strategies That Provide Choice

- Allow students to select their own instructional reading material (apart from silent-reading material).

- Allow students to select activities for response to reading material.
- Assign creative or expository writing activities on topics selected by the teacher.
- Assign creative or expository writing activities on topics selected by the student.
- Make time available for students to pursue self-selected interests.
- Teach students how to make choices among alternate appropriate activities.
- Allow students to work in various locations around the classroom.

Strategies for Curriculum Modification

- Provide open-ended activities.
- Use pre-tests to determine if students have mastered the material covered in a particular unit.
- Eliminate curricular material that students have mastered.
- Substitute different activities for students mastering regular material.
- Use contracts or management plans to help students organize their independent research projects.
- Provide time within the school day for students to work on their independent research projects.
- Assign long-range research projects that encourage students to organise their own work schedule.

Strategies for Grouping Gifted Students

- Use same-ability grouping for learning activities.
- Use mixed-ability grouping for learning activities (eg co-operative learning).
- Allow students to choose between working in a group or individually.
- Group students by ability across classrooms at the same grade level (cross setting).
- Send to a higher grade for a specific area of instruction.

Appendix 2: University Courses in Gifted Education

During the course of this study, university courses in teacher education were examined for content in gifted education, in both undergraduate (pre-service), and post-graduate courses. Data were collected from online sources regarding gifted education components of these courses. Each relevant university's website was systematically searched via three methods:

- A general search of the website for 'gifted education', 'special education' and 'inclusive education';
- A search of online handbook for units in gifted education, and special education units with gifted education components; and
- A search through the content of primary teaching courses.

Frequently, a general search for 'gifted' or 'gifted education' obtained no results. It was therefore necessary to search units in special education for explicitly stated gifted content to locate elements embedded within these units. Investigating university courses in this manner enables identification of the main pre-service training for primary teachers, and systematically organized post-graduate opportunities for in-service teachers. It is also acknowledged that while some universities claim that gifted education is addressed within general education units, if gifted content was not explicitly stated in the unit titles or outlines, this was not able to be taken into account for this study.

Undergraduate Courses

Data regarding undergraduate teacher education courses revealed information about the availability of gifted education for pre-service teachers. Thirty-five universities in Australia currently offer pre-service primary teacher education courses. Table 1 displays the undergraduate units and courses in gifted education available at in these courses for 2005, 2008 and 2016. The number of universities in each state offering pre-service courses is shown in column A.

Table 1

Undergraduate units and courses in gifted education at Australian universities, showing comparisons between 2005, 2008 and 2016

Year	A Primary teacher education courses			B Special Ed core unit states gifted content			C Optional or elective units in gifted education			D Compulsory unit(s) in gifted education		
	2005	2008	2016	2005	2008	2016	2005	2008	2016	2005	2008	2016
New South Wales	10	10	10	0	0	1	4	5	2	0	0	1
Victoria	7	7	7	3	3	1	2	2	1	0	0	0
Queensland	6	6	7	3	2	2	2	1	1	0	0	0
Western Australia	5	5	4	2	1	1	2	2	0	0	0	0
South Australia	3	3	3	0	0	1	1	1	1	0	0	0
Tasmania	1	1	1	0	0	0	0	0	0	0	0	0
Northern Territory	1	1	1	0	0	0	0	0	0	0	0	0
A.C.T.	1	1	1	0	0	0	0	0	0	0	0	0
Multi-state	1	1	1	0	0	1	0	0	1	0	0	0
TOTAL	35	35	35	8	6	7	11	11	6	0	0	1

All state education authorities in Australia now require graduate teachers to have completed at least one unit in catering for special needs learners, thus all Australian university education faculties include a core unit in ‘special needs’ or ‘inclusive’ education within pre-service courses. These units typically cover a broad spectrum of special needs such as learning difficulties, physical disabilities, and possibly, giftedness. While the wording of most of the units *could* be inferred to include giftedness, Column B shows the number of these units which *explicitly stated* the inclusion of gifted education in the unit. The data shows that only seven of the 35 universities currently state gifted education content in their special education unit. This is similar to previous data (eight in 2005, and six in 2008). Even where gifted education may be included in these units, it appears that this is usually the topic for one week, involving between one and three hours of contact time, typically a one-hour lecture and a two-hour tutorial or workshop.

There are two significant changes in the 2016 data, both involving whole units in gifted education. Firstly, elective units in gifted education were offered at only eleven universities in both 2005 and 2008, (column C). However, in 2016, gifted education electives appear to be

offered in only six undergraduate courses, almost half of the number of units in 2008. While two universities in Western Australia offered electives in 2005 and 2008, there are currently none available. Secondly, while compulsory units in gifted education were not included in any teacher education course in Australia in 2005 or 2008 (column D), the 2016 data shows that one university in N.S.W. now includes a gifted education unit as part of its core undergraduate course.

Postgraduate University Courses

Postgraduate units and courses in gifted education offered by Australian universities were identified to determine access to university level courses in gifted education for practising teachers. These data, displayed in Table 2, are almost identical for 2005 and 2008, however the 2016 data reveals some significant changes.

Table 2

Postgraduate units and courses in gifted education at Australian universities, showing comparisons between 2005, 2008 and 2016

Year	Post-Graduate Level Elective Units			Post-Graduate Certificate			Post-Graduate Diploma			Master of Education		Doctoral/ Research	
	2005	2008	2016	2005	2008	2016	2005	2008	2016	2005/2008	2016	2005/2008	2016
New South Wales	7	7	3	6	6	3	3	3	0	3	4	3	4
Victoria	4	5	2	2	2	1	2	2	1	2	1	2	1
Queensland	1	1	1	1	1	0	1	1	0	1	1	1	1
Western Australia	0	1	2	0	1	0	0	0	0	0	0	0	0
South Australia	1	1	1	1	1	1	1	1	0	1	1	1	1
Tasmania	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern Territory	0	0	0	0	0	0	0	0	0	0	0	0	0
A.C.T.	0	0	0	0	0	0	0	0	0	0	0	0	0
Multi-state	0	0	1	0	0	1	0	0	0	0	1	0	0
TOTAL	13	15	10	10	11	6	7	7	1	7	8	7	7

NB: Data for Master and Doctoral courses in 2005 and 2008 was exactly the same, so the data has been combined and presented in one column.

Single elective units at a postgraduate level (usually taken in a general Post-Graduate Certificate/Diploma in Education, or Master of Teaching course) were available at thirteen universities in four states in 2005 (New South Wales, Victoria, Queensland and South Australia.). This increased to fifteen universities in five states in 2008, with the addition of an extra unit in Victoria, and one in Western Australia. However this trend now appears to have reversed, with only ten universities currently offering post-graduate level units in gifted education, although this is still spread across the same five states. The most notable difference is in New South Wales and Victorian universities, where the data shows less than half the number of units currently being offered, compared to previous data. Western Australia appears to be the only state with an increased number of post-graduate units, with two currently being offered, in comparison to only one in 2008 and none in 2005. The remaining states have no courses or elective units available in gifted education at the postgraduate level, although there may be some topics within units.

The most significant change in the data is the reduction in the number of specialised Post-Graduate Certificates or Diplomas in gifted education. These courses were previously only available at the same four (2005) and five states (2008) which offered single elective units. The 2016 data however shows that Post-Graduate Certificate courses in gifted education are now available at almost half the previous number of universities (eleven in 2005 & 2008, and only six in 2016), while specialist Post-Graduate Diploma courses are now available at only one university in Victoria. These courses are currently not available in Western Australia.

It appears that little change has occurred for the three time periods with regard to research level courses in gifted education. The data for masters and doctoral level courses in 2005 and 2008 were identical, with only slight changes in 2016. The data indicated that these courses were only available at seven universities across four states: New South Wales, Victoria, Queensland and South Australia, with the addition of one university offering a masters' level course in gifted education in the current period.

Discussion

Research has shown that specialised professional development can have a positive impact on teachers' ability to provide effective learning experiences for gifted children, and that with appropriate professional development, teachers are more likely to espouse positive beliefs and attitudes towards giftedness, to display improved ability to identify gifted learners, and to

differentiate learning (Bangel et al., 2006; Geake & Gross, 2008; Lassig, 2009; Rowley, 2012). Currently in Australia, gifted students spend the majority of their time in regular classes, therefore it follows that professional development in gifted education needs to part of the standard education of all teachers, not just for specialist teachers.

From the data currently available, it appears that teachers in most states of Australia currently have little or no access to university provision in the field of gifted education, particularly at the undergraduate level. Undergraduate options, which were previously limited, are now further reduced, apart from the one university where undergraduate teachers study a unit on gifted education. Therefore, it appears that almost all graduating teachers will have limited understanding of how to cater for the needs of the gifted children in their classes. While teachers in five states have access to post-graduate courses, it appears that the teachers in the remaining states/territories have nothing, unless there are individual lectures or topics within other units.

One concerning factor shown in the data is the reduction in units and courses in the current situation. While the available data shows a slight increase in the number of units and courses in gifted education from 1999 (Kronborg & Moltzen, 1999; Taylor & Milton, 2006, 2008; Whitton, 2006), this trend does not appear to continue to the present. This increase was most likely in response to the 2001 Australian Senate enquiry into gifted education, which recommended that all graduating teachers should have completed at least a semester unit in gifted education, and that professional development in gifted education for practising teachers should be a priority (Senate Employment et al., 2001). Even with this small increase, courses in gifted education were still extremely limited, with Whitton's (2006) research showing a wide variance in the titles and contents of the units available. As the 2016 data indicates that the number of these units and courses has almost halved, it now appears that the upsurge of teachers wishing to study gifted education in the wake of the Senate Inquiry may have dissipated.

It seems that several universities have discontinued offering units or courses in gifted education in response to less demand from teachers: understandably, universities cannot offer units or courses which are not economically viable. Conversely, if universities do not offer these courses, teachers are not able to select them to further their professional learning. In the current digital environment, university websites would most likely be a primary source of information for teachers seeking information about university level professional development, and for prospective teachers investigating preservice courses.

It is interesting to note that this decreased interest in gifted education courses has occurred alongside the use of standardised, academic testing programs in Australia. International research has described a lack of interest in both differentiation and gifted education as effects of high stakes testing (T. R. Moon, 2009; Moon et al., 2003; Ryan & Weinstein, 2009; Scot et al., 2008). Since 2008, all Australian students have been required to participate in a national literacy and numeracy testing program in years 3, 5, 7 and 9 (Australian Curriculum Assessment and Reporting Authority, 2013), with schools' performance in these tests made publicly available via the My Schools website. With this increased public attention on students' achievement as measured by these tests, it is likely that teachers may be focussed on students who are at risk of not reaching the national minimum standard in literacy and numeracy, rather than providing for gifted students. It appears then that differentiation for students who are traditionally seen as 'high achievers' may not be a priority, and teachers' professional development interests may not tend toward gifted education.

Although government inquiries and research over the past decade have recommended a far greater level of provision in this area, current teacher training in Australia does not provide sufficient opportunities for regular class teachers to develop the skills shown to be necessary to effectively cater for gifted students (Fraser-Seeto et al., 2013; Plunkett & Kronborg, 2011; Whitton, 2006). A significant implication of the omission of gifted education in university courses is that it may perpetuate the myths that specialised provision for gifted students is unnecessary, and that no specialised training is required to teach these students. Graduating teachers and the wider profession are thus allowed to hold on to misconceptions common in the general community, assuming that the training they have undertaken will enable them to provide appropriate differentiation for gifted students.

Appendix 3: Questionnaire

Western Australian Classroom Practices – Teacher Survey

This study focuses on the nature of regular classroom practices used in schools across Western Australia. You can help inform this study by taking a few minutes to complete this questionnaire. Please be assured that your answers will be kept strictly confidential and that all reporting will not identify teachers, schools or districts.

I. Teacher Information

Please answer these questions about yourself.

1. Years of teaching experience: _____ years.
2. Teaching Qualifications (please tick your highest qualification)

	Teaching Certificate
	Diploma of Teaching
	BA (Education)
	B. Ed / Dip Ed
	Postgraduate Degree

3. Training in teaching of the Gifted and Talented (please tick all that apply)

	None
	Undergraduate lectures as part of a unit or course at Teachers' College/University
	Undergraduate whole units in Gifted Education at Teachers' College/University
	District in-service
	Workshop or conference outside district
	Postgraduate units or course in Gifted Education
	Postgraduate degree in Gifted Education

II. School Information

Please answer these questions about your school by circling your response.

4. Does your school belong to: Education Department Catholic Independent
5. Is your school in a rural or metropolitan area? Rural Metropolitan
6. Does your school or district use a formal definition of Giftedness?

Yes No Don't know

III. Class Information

Please answer the questions below regarding your class.

7. How many Year 5 students are in your class? ____ boys ____ girls
8. How many Year 5 students in your class have been formally identified as gifted?
____ boys ____ girls
9. Which of the following measures were used to identify these gifted students (please tick all that apply)

	IQ tests (group or individual)
	Achievement tests
	School grades
	Teacher rating scales
	Student products /portfolios
	Teacher nomination
	Parent nomination

	Student nomination
	Student interview
	Peer nomination
	Creativity tests
	Don't know
	Other, please specify _____

10. Are there Year 5 students in your class whom you believe are gifted but have not been formally identified as such? Yes No
If so, how many? ____ boys ____ girls.
11. Do Year 5 students in your class participate in an off-site gifted programme (at another school or site)? Yes No
If so, how many? ____ boys ____ girls.
12. What type of off-site programme is available for them to participate in? eg PEAC

13. Do students in your class participate in an on-site gifted programme provided by a teacher trained in gifted education? Yes No
If so, how many? ____ boys ____ girls.
14. What type of on-site programme is available for the students to participate in? (E.g. withdrawal room, special enrichment class at your school)

15. Do you have computer/s in your classroom? If YES, how many _____?
16. Do your students have access to a computer lab? Yes No

IV. Classroom Practices

This section is designed to provide information about the instructional strategies and approaches you use in your classroom. It is very important that the answers you provide reflect actual practices. Please be assured that your individual responses will be held in the strictest confidence.

If you have students who have been identified as gifted or who you believe are gifted, please rate how often these activities actually occur in your classroom **FOR GIFTED STUDENTS** by ticking in the appropriate column: **1** = Never; **2** = Seldom (once a month or less frequently); **3** = Occasionally (a few times a month/ weekly); **4** = Often (several times a week or more frequently).

	1	2	3	4
1. Use basic skills worksheets				
2. Use enrichment worksheets.				
3. Assign advanced level reading material.				
4. Allow students to select their own instructional reading material (apart from silent-reading material).				
5. Provide open-ended activities.				
6. Allow students to select activities for response to reading material.				
7. Use same-ability grouping for learning activities.				
8. Use mixed-ability grouping for learning activities				
9. Assign creative or expository writing activities on topics selected by the teacher.				
10. Assign creative or expository writing activities on topics selected by the student.				
11. Make time available for students to pursue self-selected interests.				
12. Teach students how to make choices among alternate appropriate activities.				
13. Use pre-tests to determine if students have mastered the material covered in a particular unit				
14. Eliminate curricular material that students have mastered				
15. Substitute different activities for students mastering regular material				
16. Allow students to choose between working in a group or individually.				
17. Teach integrated curriculum units based on multiple Learning Areas.				
18. Allow students to work in various locations around the classroom e.g. book corner, writing centre.				
19. Use the Internet for learning activities.				
20. Provide support for students to enter competitions (e.g. allow class time to work on entry).				
21. Allow students to use computers for creating or publishing their own writing.				
22. Use specific software to develop learning skills e.g. Carmen SanDiego, Illuminartist.				
23. Teach thinking skills in the regular curriculum (e.g. CoRT Thinking strategies, Six Thinking Hats, critical thinking, creative problem solving).				

24. Participate in a competitive program focusing on thinking skills/problem solving, such as Tournament of Minds or Future Problem Solving.				
25. Provide curriculum which includes investigation of real world situations or problems.				
26. Use contracts or management plans to help students organize their independent research projects.				
27. Provide time within the school day for students to work on their independent research projects.				
28. Allow time for free use of computers. / Allow students to choose tasks/software to use on computers.				
29. Provide a more advanced unit based on higher-level outcome statements.				
30. Group students by ability across classrooms at the same grade level				
31. Send to a higher grade for a specific area of instruction				
32. Provide opportunities for students to use programmed or self-instructional material at their own pace.				
33. Assign long-range research projects that encourage students to organise their own work schedule.				
34. Provide questions which require students to explain their thinking and provide evidence of reasoning.				
35. Engage students in questions and activities based on higher level thinking skills (such as Bloom's Taxonomy).				

36. What are some strategies you find work well for gifted students in your classroom (in any subject area)?

37. What are some of the issues that affect the learning experiences provided for gifted students in your classroom?

38. Are there any other comments you would like to make regarding provision for gifted students in the regular classroom?

With sincere thanks for your contribution to this study.

Tracy Taylor

Appendix 4A:
Letter to School Principal (W.A. Department of Education
School/Independent School) Requesting Assistance with
Questionnaire

Dear Principal,

I am a PhD student at Edith Cowan University and am seeking your assistance in a research project on educational provision for gifted students in regular, Western Australian primary classrooms. Could you please pass the enclosed letter and questionnaire to a Year 5 teacher at your school to complete and return in the envelope provided?

This project aims to identify current information about the education of gifted students in regular classes in W.A. primary schools. Specifically, it is intended to explore the issues faced by teachers in their efforts to provide for their gifted students, and teachers' perceptions of the extent to which specific regular class modifications are offered to gifted students. It is proposed that the research will be able to clarify the current situation in Western Australia and to provide information for teacher decisions in curriculum planning and classroom practices. The research has been approved by the Edith Cowan University Research and Graduate School and by the W.A. Department of Education.

In the first stage of the project, information about regular class practices will be sought from a state-wide sample of 600, Year 5 teachers. The teachers will have the opportunity to complete a questionnaire concerning the instructional practices they use with gifted students. I would like to request the assistance of a Year 5 class teacher at your school, which has been randomly selected as part of this sample.

Please be assured that the selected teacher's responses will be held in the strictest confidence and that the results of this research will not identify any teachers, schools or districts. Questionnaires have been numbered for follow-up purposes only and will not be used to identify any specific information from schools.

To further investigate information from the survey, I would like to invite Year 5-7 teachers to participate in a focus group discussion. The group will meet once to discuss issues identified in the questionnaire and any other factors they feel affect provision for their gifted students. Group participants will receive a resource package of materials relevant to catering for gifted students in regular classrooms. If any Year 5, 6 or 7 teachers at your school would be willing to participate please ask them to complete the enclosed form and return it with the questionnaire or contact me as below.

Any questions regarding the research project may be directed to myself on (08) 9370.6875 or via email at: ta.taylor@bigpond.com . If you have any concerns about the project or would like to talk to an independent person, you may contact Dr Marion Milton at Edith Cowan University on (08) 9370.6205.

Thank you for taking the time to read this letter and asking a Year 5 teacher at your school respond to the questionnaire.

Yours truly,

Tracy Taylor
PhD Student
Edith Cowan University

Appendix 4B:
Letter to School Principal (Catholic School)
Requesting Assistance with Questionnaire

Dear Principal,

I am a PhD student at Edith Cowan University and am seeking your assistance in a research project on educational provision for gifted students in regular, Western Australian primary classrooms. Could you please pass the enclosed letter and questionnaire to a Year 5 teacher at your school to complete and return in the envelope provided?

This project aims to identify current information about the education of gifted students in regular classes in W.A. primary schools. Specifically, it is intended to explore the issues faced by teachers in their efforts to provide for their gifted students, and teachers' perceptions of the extent to which specific regular class modifications are offered to gifted students. It is proposed that the research will be able to clarify the current situation in Western Australia and to provide information for teacher decisions in curriculum planning and classroom practices. The research has been approved by the Edith Cowan University Research and Graduate School and by the Catholic Education Office of W.A.

In the first stage of the project, information about regular class practices will be sought from a state-wide sample of 600, Year 5 teachers. The teachers will have the opportunity to complete a questionnaire concerning the instructional practices they use with gifted students. I would like to request the assistance of a Year 5 class teacher at your school, which has been randomly selected as part of this sample.

Please be assured that the selected teacher's responses will be held in the strictest confidence and that the results of this research will not identify any teachers, schools or districts. Questionnaires have been numbered for follow-up purposes only and will not be used to identify any specific information from schools.

To further investigate information from the survey, I would like to invite Year 5-7 teachers to participate in a focus group discussion. The group will meet once to discuss issues identified in the questionnaire and any other factors they feel affect provision for their gifted students. Group participants will receive a resource package of materials relevant to catering for gifted students in regular classrooms. If any Year 5, 6 or 7 teachers at your school would be willing to participate please ask them to complete the enclosed form and return it with the questionnaire or contact me as below.

Any questions regarding the research project may be directed to myself on (08) 9370.6875 or via email at: ta.taylor@bigpond.com . If you have any concerns about the project or would like to talk to an independent person, you may contact Dr Marion Milton at Edith Cowan University on (08) 9370.6205.

Thank you for taking the time to read this letter and asking a Year 5 teacher at your school respond to the questionnaire.

Yours truly,

Tracy Taylor
PhD Student
Edith Cowan University

Appendix 4C:
Letter to Year 5 Teacher (W.A. Department of Education
School/Independent School) Requesting Assistance with
Questionnaire

Dear Year 5 Classroom Teacher,

I am a PhD student at Edith Cowan University and am seeking your assistance in a research project on educational provision for gifted students in regular, Western Australian primary classrooms. Your help is sought in answering a questionnaire which field trials have shown only takes about 10 minutes to complete. I hope that you will be willing to contribute to this research, which will be most helpful in designing instruction for primary school students.

This project aims to identify current information about the education of gifted students in regular classes in W.A. primary schools. Specifically, it is intended to explore the issues faced by teachers in their efforts to provide for their gifted students, and teachers' perceptions of the extent to which specific regular class modifications are offered to gifted students. It is proposed that the research will be able to clarify the current situation in Western Australia and to provide information for teacher decisions in curriculum planning and classroom practices. The research has been approved by the Edith Cowan University Research and Graduate School and by the W.A. Department of Education.

In the first stage of the project, information about regular class practices will be sought from a state-wide sample of 600, Year 5 teachers. The teachers will have the opportunity to complete a questionnaire concerning the instructional practices they use with gifted students. Your response is very important to the study.

This questionnaire is anonymous. Please ensure that you do not write your name, or any other comments that will make you identifiable, on the enclosed questionnaire. By completing the questionnaire, you are consenting to take part in this research. The information in this letter explains fully the intention of this project and should be read carefully before responding to the questionnaire.

Could you please complete the questionnaire within the next week and return it in the envelope provided. Please be assured that your responses will be held in the strictest confidence and that the results of this research will not identify any teachers, schools or districts. Questionnaires have been numbered for follow-up purposes only and will not be used to identify any specific information from schools.

To further investigate information from the survey, I would like to invite Year 5-7 teachers to participate in a focus group discussion. The group will meet once to

discuss issues identified in the questionnaire and any other factors they feel affect provision for their gifted students. Group participants will receive a resource package of materials relevant to catering for gifted students in regular classrooms. If you or any Year 5, 6 or 7 teachers at your school would be willing to participate, please complete the enclosed form and return it with the questionnaire or contact me as below.

Any questions regarding the research project may be directed to myself on (08) 9370 6875 or via email at: ta.taylor@bigpond.com. If you have any concerns about the project or would like to talk to an independent person, you may contact Dr Marion Milton at Edith Cowan University on (08) 9370.6205.

Thank you for taking the time to read this letter and respond to the questionnaire.
Yours truly,

Tracy Taylor
PhD Student
Edith Cowan University

Appendix 4D:
Letter to Year 5 Teacher (Catholic School)
Requesting Assistance with Questionnaire

Dear Year 5 Classroom Teacher,

I am a PhD student at Edith Cowan University and am seeking your assistance in a research project on educational provision for gifted students in regular, Western Australian primary classrooms. Your help is sought in answering a questionnaire which field trials have shown only takes about 10 minutes to complete. I hope that you will be willing to contribute to this research, which will be most helpful in designing instruction for primary school students.

This project aims to identify current information about the education of gifted students in regular classes in W.A. primary schools. Specifically, it is intended to explore the issues faced by teachers in their efforts to provide for their gifted students, and teachers' perceptions of the extent to which specific regular class modifications are offered to gifted students. It is proposed that the research will be able to clarify the current situation in Western Australia and to provide information for teacher decisions in curriculum planning and classroom practices. The research has been approved by the Edith Cowan University Research and Graduate School and by the Catholic Education Office of W.A.

In the first stage of the project, information about regular class practices will be sought from a state-wide sample of 600, Year 5 teachers. The teachers will have the opportunity to complete a questionnaire concerning the instructional practices they use with gifted students. Your response is very important to the study.

This questionnaire is anonymous. Please ensure that you do not write your name, or any other comments that will make you identifiable, on the enclosed questionnaire. By completing the questionnaire, you are consenting to take part in this research. The information in this letter explains fully the intention of this project and should be read carefully before responding to the questionnaire.

Could you please complete the questionnaire within the next week and return it in the envelope provided. Please be assured that your responses will be held in the strictest confidence and that the results of this research will not identify any teachers, schools or districts. Questionnaires have been numbered for follow-up purposes only and will not be used to identify any specific information from schools.

To further investigate information from the survey, I would like to invite Year 5-7 teachers to participate in a focus group discussion. The group will meet once to

discuss issues identified in the questionnaire and any other factors they feel affect provision for their gifted students. Group participants will receive a resource package of materials relevant to catering for gifted students in regular classrooms. If you or any Year 5, 6 or 7 teachers at your school would be willing to participate, please complete the enclosed form and return it with the questionnaire or contact me as below.

Any questions regarding the research project may be directed to myself on (08) 9370.6875 or via email at: ta.taylor@bigpond.com. If you have any concerns about the project or would like to talk to an independent person, you may contact Dr Marion Milton at Edith Cowan University on (08) 9370.6205.

Thank you for taking the time to read this letter and respond to the questionnaire.
Yours truly,

Tracy Taylor
PhD Student
Edith Cowan University

Appendix 5: Focus Group Invitation

[Date]

Dear Classroom Teacher,

As a follow-up to the survey, I intend to form two small focus groups of Year 5-7 teachers for a discussion of the issues raised in the questionnaire, and any other factors they feel affect provision for their gifted students. Group participants will receive a resource package of materials relevant to catering for gifted students in regular classrooms. If you, or any Year 5, 6 or 7 teachers at your school would be willing to participate, please complete the enclosed form and return with the questionnaire or contact me as below.

Name:

School:

Year level taught:

Contact phone number:

Tracy Taylor

PhD Student

Edith Cowan University.

Phone: (08) 9309.6645

Email: ta.taylor@bigpond.com.

Appendix 6:
Follow-up Email to School Principal
Requesting Assistance with Questionnaire

Dear [Name],

I am a PhD student at Edith Cowan University and am seeking your assistance in a research project on educational provision for gifted students in regular, Western Australian primary classrooms.

About three weeks ago, you received a survey regarding the instructional practices used with gifted students. If the Year 5 teacher selected has not yet had an opportunity to complete the survey, their information would be greatly appreciated. If you would like another copy of the questionnaire, please advise me via email or by phone on 9370.6205. Alternatively, if your school is unable to participate in the research, your reply via email will ensure that I do not further encroach on your time with the follow-up mail-out.

Unfortunately, some of the returned questionnaires could not be identified and I apologise if yours has already been returned.

I have attached further details of the research project for your information if required.

Thank you for considering this research.

Tracy Taylor
PhD Student
Edith Cowan University

Appendix 7: Interview and Focus Group Discussion Guide

1. How are gifted students catered for in your school/district?

2. What do you see as some of the **issues** facing teachers in providing for gifted students in regular classes? What **solutions** could you see for these issues?

3. In a state-wide survey of teachers, four **issues of concern to teachers** were identified:
 - a. lack of time
 - b. access to resources
 - c. range of students in class
 - d. knowledge about giftedness/strategies for gifted students

Do you see any of these as issues in catering for your gifted students?

If so, what **solutions** could you see for these issues?

4. What are some successful **strategies** for gifted students you have used, or seen used in regular classes?

Appendix 8: Statement of Disclosure and Informed Consent for Focus Groups

Dear [Name],

I am a PhD student at Edith Cowan University and am seeking your assistance in a research project on educational provision for gifted students in regular, Western Australian primary classrooms. You have indicated that you would be willing to participate in a small discussion group as part of this research project.

This project aims to provide current information about the education of gifted students in regular, classes in W.A. primary schools. Specifically, it is intended to explore the issues faced by teachers in their efforts to provide for their gifted students and teachers' perceptions of the extent to which specific regular class modifications are offered to gifted students. It is proposed that the research will be able to clarify the current situation in Western Australia and to inform teacher decisions in curriculum planning and classroom practices.

It is intended that each group will meet once for approximately 1 hour to discuss issues raised in an initial survey and any other factors involved in provision for gifted students. It is hoped that participants will gain be able to develop a deeper understanding of the issues involved in gifted education and also specific information and strategies appropriate to the education of the gifted students in their regular classes. If you are willing to participate in a focus group please complete the enclosed statement of consent and return it in the envelope provided. I will contact you to arrange a mutually convenient time for the focus group to meet.

Please be assured that your responses will be held in the strictest confidence and that the results of this research will not identify any teachers, schools or districts.

Any questions regarding the research project may be directed to myself on (08) 9309.6645 or via email at: ta.taylor@bigpond.com. If you have any concerns about the project or would like to talk to an independent person, you may contact Dr Marion Milton at Edith Cowan University on (08) 9370.6205.

Thank you for taking the time to read this letter and, hopefully, participate in a focus group.

Yours truly,

Tracy Taylor
PhD Student
Edith Cowan University

CONSENT FORM Gifted Students: Regular Classroom Practices

I have read the information above and any questions I have asked have been answered to my satisfaction.

I agree to participate in the activity, realising that I may withdraw at any time.

I agree that the research data may be published provided that I am not identifiable.

Participant:

Date

Investigator:

Date

Appendix 9: Interview Request Letter

Dear [Name],

I am a PhD student at Edith Cowan University and am seeking your assistance in a research project on educational provision for gifted students in regular, Western Australian primary classrooms. As part of the study, it be valuable to discuss some of the issues involved in the topic with relevant district office staff and I would like ask if you would be willing to participate in a short interview for this purpose.

This project aims to provide current information about the education of gifted students in regular classes in W.A. primary schools. Specifically, it is intended to explore the issues faced by teachers in their efforts to provide for their gifted students and teachers' perceptions of the extent to which specific regular class modifications are offered to gifted students. It is proposed that the research will be able to clarify the current situation in Western Australia and to inform teacher decisions in curriculum planning and classroom practices.

Information about regular class practices has been be sought by asking a state-wide sample of 600, Year 5 teachers to complete a questionnaire concerning the instructional practices they use with gifted students. As a follow-up to the survey, two small focus groups of Year 5-7 teachers will discuss some of the issues raised in the questionnaire and any other factors they feel affect provision for their gifted students.

I hope that you will be willing to contribute to this research, which will be most helpful in designing instruction for primary school students. Your response is important to the study. Please be assured that your responses will be held in the strictest confidence and that the results of this research will not identify any teachers, schools or districts.

If you would be willing to participate in an interview, could you please complete the statement of consent below and return to me in the envelope provided as soon as possible. I will contact you to arrange a mutually convenient time for interview to be conducted.

Any questions regarding the research project may be directed to myself on (08) 9309.6645 or via email at: ta.taylor@bigpond.com. If you have any concerns about the project or would like to talk to an independent person, you may contact Dr Marion Milton at Edith Cowan University on (08) 9370.6205.

Thank you for taking the time to read this letter and, hopefully, participate in the interviews.

Yours truly,

Tracy Taylor
PhD Student
Edith Cowan University

CONSENT FORM Gifted Students: Regular Classroom Practices

I have read the information above and any questions I have asked have been answered to my satisfaction.

I agree to participate in the activity, realising that I may withdraw at any time.

I agree that the research data may be published provided that I am not identifiable.

Participant:

Date

Investigator:

Appendix 10: Statement of Disclosure and Informed Consent for Interviews

Dear [Name],

I am a PhD student at Edith Cowan University conducting a research project on educational provision for gifted students in regular, Western Australian classrooms. As part of the study, it would be valuable to discuss some of the issues involved in the topic with gifted education advisors and I would like to thank you for agreeing to participate in a short interview for this purpose.

This research aims to identify current information about the education of gifted students in regular classes in W.A. primary schools. Specifically, it is intended to explore the issues faced by teachers in their efforts to provide for their gifted students and teachers' perceptions of the extent to which specific regular class modifications are offered to gifted students. It is proposed that the research will be able to clarify the current situation in Western Australia and to provide information for teacher decisions in curriculum planning and classroom practices. The research has been approved by the Edith Cowan University Ethics Committee, the W.A. Department of Education and the Catholic Education Office of W.A.

In the first stage of the project, information about regular class practices was collected from a state-wide sample of 200 Year 5 teachers. Focus group discussions with teachers and interviews with gifted education advisors have clarified some of these issues.

With your permission, I would like to audio-record the interview to allow accurate analysis of data. Please be assured that your responses will be held in the strictest confidence and the results of this research will not identify any persons, schools or organisations.

Any questions regarding the research project may be directed to myself on (08) 9309.6645 or via email at: ttaylor@our.ecu.edu.au or ta.taylor@bigpond.com. If you have any concerns about the project or would like to talk to an independent person, you may contact the research supervisor, Dr Marion Milton at Edith Cowan University on (08) 9370.6205.

Thank you for taking the time to participate in an interview

Yours Truly,

Tracy Taylor
PhD student
Edith Cowan University

CONSENT FORM: Gifted Students: Regular Classroom Practices

I have read the above information and any questions I have asked have been answered to my satisfaction.

I agree to participate in the research, realising that I may withdraw at any time.

I agree that the research data may be published provided that I am not identifiable.

Participant:

Date:

Investigator:

Date:

Appendix 11: Coding Categories for Qualitative Analysis

Question 36: Gifted Strategies

1	extra work	after complete regular class activity, extension after finish classwork early
2	extra homework	
1	CONTENT	
11 **	independent work (unspecified)	self-directed activities, individual program, individual assignments, independent learning,
12	independent program (specific)	Passport to Success, Super-Spelling Kit , Challenge Maths, Accelerated Reader Program, Advanced Learners Programme,
13	competitions	Mathquest, T.O.M.
14 **	extension	challenging work activities, acceleration, extended Maths, multi-level activities, differentiated curriculum, multi-level curriculum,
15	teacher expectation	chn do to potential, higher level requirements, encourage extended answers, can do same activity as other chn – with higher expectations
16	mentor program	
2	PROCESS	
21	open-ended	tasks which are not limited, allow chn to demonstrate skills at advanced level, open-ended caters for most, open-ended tasks provide for all students at their own level
22	own pace	self-paced
23	choice	allowing, of topic, of chns activities, interests, strengths & needs
24	student centred learning	responsibility, student input, st involved in decision making, planning & evaluation, chn design activity, recognition of interests, cater for individual learning styles,
25	research	projects, independent research, long range research, research topic of interest, inquiry process,
26	contracts	work targets / personal goals
3	PRODUCT	
31	product differentiation	allow submitted work in own format eg powerpoint pres., video, choice of producing/presenting, real product, product matrix, constructions,
4	GROUPING	
41	collaborative learning – heterogenous group	co-operative learning, jigsaws,

42	ability group	cognitive peers, like to challenge each other, enjoy working with like minded students, literature circle (ability grouped)
43	MAG	
44	work with older chn	send to higher grade, competition with
45	cross-setting	
46	enrichment classes	withdrawal, enrichment programs, PEAC,
47	peer-tutor	Helper, Think - Pair – Share, peer-mentor, buddying weaker students, setting up activities for others, reciprocal reading, help less able students, making w/sheets for low achievers,
48	teacher / leader	group tutor, class expert, teach researched topic to class, setting up work centres, leading activities, class displays,
5	ASSESSMENT	
51	pre-testing	allows T to eliminate activities
52	self-assessment	portfolios, promote self assessment, encourage to reflect on own learning journey
53	negotiated	points plan (25), negotiated assessment, negotiate outcomes & marking key, responsibility for, self-reflection,
54	rubrics – T provide	
55	rubrics – St.	develop with chn, negotiate, st create and use own
6	TECHNOLOGY	
61	using technology	computers, laptops, scanners, dig cameras, powerpoints etc, Technology Focus Day, Logo
62	intranet	class, school,
63	internet	
7	CLASS ACTIVITIES (ENRICHMENT)	
71	thematic approaches	integrated, challenge them to find inter-curricular links
72	problem solving	puzzles, logic,
73	real life applications / authentic	real life learning activities, real-life challenges/applications, <i>purposeful</i> activities, extension into the community
74	literature based activities	author study, readers circle, large range of reading materials, literature circle, author visits,
75	oral / drama	class discussions, class meetings, role play
76	excursions / incursions	guest speakers
77	critical literacy	
78	learning centres	
79	writing	class newspaper, encourage better use of adjectives & adverbs in writing
8	THINKING	
81	critical thinking activities	
82	creative thinking	lateral thinking, 6 thinking hats, flexible thinking
83	higher level thinking	Bloom's,
84	visuals	mind mapping, concept map, graphic organisers, T charts,

9	MODELS /	
91	Triad model	[Renzulli]
92	Autonomous Learner Model	
93	Multiple Intelligences	
94	Lane Clark – mini-enquiries	
95	Michael Pohl strategies	

Question 37: Issues

0	TEACHER	
1	knowledge	PD / training / lack of teacher knowledge / lack of training in giftedness, knowledge of suitable strategies, not sure of what more to do, unsure of right way / good practice, need more practical ideas for classroom, little testing showing needs of gifted students, motivation, teacher understanding of definition
2	definition	teacher understanding of,
3	time – preparation	insufficient, for programming, to plan & prepare resources, to prepare extension materials, to plan well for extension, support for teachers, organisation
4	time - contact	with gifted students, for working individually with, adequate one on one time,
5	in class support	support teachers for chn, teacher assistant, support time needed, human resources
1	TEACHER BELIEFS	
11	all /most chn are gifted	
12	social	important for chn to remain in class to mix with peers, need to be part of the group sometimes too,
13	need special provision	gifted chn need as much input as others, should be catered for as much as low ability st., needs to be more conc effort in recognising and providing for, require a specially trained teacher, need to be taught in more open, student-centred classrooms rather than traditional classrooms, need explicit teaching, opportunity to work with others of like ability
14	gifted chn often get forgotten	left to themselves, an afterthought unfortunately, gifted will be OK, most gifted chn do not have their giftedness acknowledged because it's too difficult to cater for them,
	GIFTED ST	
	Personal	
21	work habits	degree of interest, motivation, organisation
22	poor work habits	lazy, disinterested, demotivated, distractions from others, lack independence, highly unorganised, disorganised
23	underachievement	not always high achievers, unable to push themselves, do not perform to abilities, poor attitude to school

211	poor work habits / underachievement	degree of interest, motivation, organisation, lazy, disinterested, demotivated, distractions from others, lack independence, highly unorganised, disorganised, not always high achievers, unable to push themselves, do not perform to abilities, poor attitude to school
22	perfectionists	difficulty completing work, frustration, too scared of failure, many gifted students rarely experience failure
23	low self esteem	lack of confidence
24	behaviour problems	
25	asynchronous	Gifted in some areas and not in others, not always gifted in every area, reading vs spelling,
	Social	
31	peer-relationships / tall poppy	response/attitude of other students, school culture which undervalues extended learning, making friendships, other chns perceptions, need for acceptance by peers, alienation, don't want to be a brain, stand out, peer pressure, threat of being ostracized, alienation,
32	social skills	not good at working in groups, social & work skills just as imp as academic, social skills don't match intell (or asynchronous?), lacking in social skills, need to develop social skills,
33	attitude to others	boastful, competitive, discourage weaker chn, lack of empathy for st who struggle, arrogant, attitude to adults,
34	peer-tutoring - negative	don't like peer tutoring, explaining, helping, not willing to help weaker students, unwilling to work with lower ability chn,
4	Organisational	
41	identification	selection, formal assessment, more regular testing
42	challenge	lack of, boredom, challenging vs keeping busy??, finishing early, fear of student becoming bored in the class, repetition of mastered activities,
43	missing out	class activities when attending extension group / PEAC / keeping up with class activities, find it hard to catch up on work missed
44	time	to complete complex tasks, research, to allow real extension, with teacher,
5	OTHER STUDENTS	
51	class size – large	st-t ratio, numbers of children in class,
52	behaviour	behaviour problems, disruptive behaviour, takes too much time, supervision, requires close attention,
53	ability range	catering for range of students, needs of others, huge range of ability levels, split grade, multi-grade class,
54	weaker st	large no, take inordinate amount of time, more concern for students at risk, time needed for remediation/repetition, catering for students who struggle, emphasis on at-risk underachievers, focus on SAER & not TAGS.

55	inclusion	inclusion of special needs chn, ADD, LD, Aspergers, Bipolar syndrome, autistic,
56	affects self esteem of older students	
57	home back-ground	
58	Non-mainstream culture	Aboriginal/TSI
59	ESL	
6	SCHOOL	
61	timetable	time constraints, interruptions, many spec ts, not enough class t contact time, timetabling, disruptions, difficult to maintain continuity, competition with other la's – music, PE/sport, choir, drama etc, time allocation, co-ordinating classes, incursions,
62	lack of support from school	resistance from admin, no cross-setting, no school-backed program, other teachers' perceptions, school priorities, no TAGS program, non-negotiable DI programs across school,
63	MAG	no labels, allows all on individual program/journey, we don't teach at 'year levels', every child works at his/her level,
7	SYSTEM	
71	benchmarks	emphasis on ensuring all reach benchmark literacy and numeracy levels
72	paperwork	for CFW, SOS, performance management etc
73	curriculum	overcrowded, overload, pressure to cover, covering the 'basics',
8	FAMILY	
81	lack of parental support	
82	parents – expectations	
9	RESOURCES	
91	materials	lack of kits of self-paced extension, need kits / packages of work, lack of resources to pursue interests, lack of equipment, small school – lack of resources, funding
92	classroom space	lack of physical space
93	library resources	Limited, lack
94	G&T programs	access to, funding for
95	computer	computer access, software, internet access
100	RURAL	
101	Dist to PEAC	
102	Not enough opportunity to work with st of like ability	
103	Small class	all chn wk individual level, we don't teach at 'yr' levels
104	support in country areas	need more pd, res, isolation

110	PEAC	
111	courses	courses need to be available to a wider range of chn
112	ident	many chn not identified in testing, selection doubtful,
113	transport difficulties	
114	would be useful to have peac in cath ed	
115	time	loss of time to PEAC class
121	difficulty transitioning to high school if doesn't cater for	(eg if completed yr 10 maths then has to do yr 8)
122	organisational difficulties	Timetable???
	[enrichment vs extension]	gifted st need sideways extension, not adv (eg chess) #16

Question 38: Comments

	can do same activity as other chn – with higher expectations	
	definition – teacher understanding of	
	asynchronous – reading vs spelling	not always gifted in every area,
	need more practical ideas for classroom	
	all chn gifted – [teacher beliefs]	
	unsure of right way / good practice	not sure of what more to do,
	boredom – for students	
	support teachers for chn	
	social	important for chn to remain in class to mix with peers, need to be part of the group sometimes too,
	threat of being ostracized	
	training	
	time	
	resources	material, human,
	mag – allows all on individual program/journey	
	gifted st need sideways extension, not adv (eg chess) [enrichment vs extension]	
	teacher assistant	
	range of students in class – ability levels, homebgd, abroginal/tsi, special ed, discipline probs etc.	
	mi	
	would be useful to have peac in cath ed	

	gifted chn often get forgotten	left to themselves
	mentor program	
	find it hard to catch up on work missed	
	require a specially trained teacher	
	need special provision	
	open-ended tasks provide for all students at their own level	open-ended caters for most
	cognitive peers	like to challenge each other, enjoy working with like minded students
	difficulty transitioning to high school if doesn't cater for	(eg if completed yr 10 maths then has to do yr 8)
	support in country areas	need more pd, res, isolation
	emphasis on at-risk underachievers	focus on SAER & not TAGS
	needs to be more conc effort in recognising and providing for	
	gifted chn need as much input as others	
	peac	
	courses	courses need to be available to a wider range of chn
	ident	many chn not identified in testing, selection doubtful,
		transport difficulties
	need to be taught in more open, student-centred classrooms rather than traditional classrooms	
	need kits / packages of work	
	skills	social & work skills just as imp as academic
		many gifted students rarely experience failure