

**Towards a Comprehensive Model of English as a
Second Language Learning and Teaching in the
Malaysian Independent Chinese Secondary
Schools**

Che Yee Lye
B.Ed. Teaching English as a Second Language (TESL) and
M.Sc. Curriculum and Instruction (The University of Putra Malaysia)

**Thesis submitted in fulfilment of the requirements for the degree of
Doctor of Philosophy**

School of Education, Faculty of Arts
The University of Adelaide
April 2016

Table of Contents

Table of Contents	i
List of Tables	vi
List of Figures.....	xi
Abstract.....	xv
Declaration.....	xix
Acknowledgements.....	xx
Chapter 1 Introduction.....	1
1.1 Background to Research Problem	1
1.2 Education in Malaysia	2
1.3 Malaysian Education and Language Policies and their Implications for Chinese Education	6
1.4 The Malaysian Independent Chinese Secondary Schools	9
1.5 Research Problem	14
1.6 Research Questions	17
1.7 Structure of the Thesis	19
Chapter 2 Systematic Reviews of Research on Student Factors Influencing English Proficiency	23
2.1 Introduction	23
2.2 Systematic Reviews of Student Differences as Predictors of Success in Second Language Learning	24
2.3 Individual Differences and Second Language Acquisition Research Review	30
2.4 Student-level Factors Influencing Students' English Language Proficiency.....	34
2.5 Students' Attitudes and Motivation.....	39
2.6 Students' Anxiety, Self-efficacy and Confidence	44
2.7 Students' Conceptions of Learning and Approaches to Learning.....	47
2.8 Students' Demographic Characteristics	51
2.9 Research Methods and Data Analysis of the Studies	54
2.10 Summary.....	56

Chapter 3 Systematic Reviews of Research on Teacher and School Factors Influencing English Proficiency 59

3.1	Introduction	59
3.2	Systematic Reviews of Teacher and School Differences as Predictors of Success in Language Learning	60
3.3	Teacher and School Effectiveness Research Review	67
3.4	Teacher- and School-level Factors Influencing Students' Language Achievements	72
3.5	Teachers' Demographic Characteristics	76
3.6	Teacher Planning	81
3.7	Teachers' Approaches to Teaching	83
3.8	School Size, Class Size and Instructional Time	86
3.9	School Facilities and Resources	89
3.10	School Curriculum and High-stakes Assessments	92
3.11	Research Methods and Data Analysis of the Studies	93
3.12	Summary.....	97

Chapter 4 Research Design and Instrumentation 100

4.1	Introduction	100
4.2	Theoretical Framework	101
4.3	Choice of Research Methods.....	106
4.4	The Systematic Review	109
4.5	Population and Sampling Method	116
4.6	Data Collection Methods and Procedures for Survey and Student Assessments.....	120
4.7	The Pilot Study	132
4.8	Ethics Approval	133
4.9	Summary.....	135

Chapter 5 Methods of Data Analysis 137

5.1	Introduction	137
5.2	General Methodological Considerations	138
5.3	Data Preparation	141
5.4	The Use of IBM SPSS Amos 22: Confirmatory Factor Analysis and Structural Equation Modelling	145
5.5	The Use of ACER ConQuest 4: Rasch Analysis.....	154
5.6	The Use of HLM 6: Hierarchical Linear Modelling	163
5.7	Validity and Reliability	168
5.8	Summary.....	172

Chapter 6 Instrument Validation: Confirmatory Factor Analysis	173
6.1 Introduction	173
6.2 Confirmatory Factor Analysis	174
6.3 Fit Comparison of Alternative Models and Final Structure for Students' Attitudes, Motivation, Anxiety and Self-efficacy Scales	176
6.4 Fit Comparison of Alternative Models and Final Structure for Students' Conceptions of and Approaches to Learning Scales	186
6.5 Fit Comparison of Alternative Models and Final Structure for Students' English Language Proficiency Scales	194
6.6 Fit Comparison of Alternative Models and Final Structure for Approaches to Teaching Scales	200
6.7 Summary.....	203
Chapter 7 Instrument Calibration and Verification: Rasch Analysis	204
7.1 Introduction	204
7.2 Rasch Analysis	205
7.3 Person Fit Analysis.....	206
7.4 Item Fit Analysis	207
7.5 Item and Person Separation Reliability	219
7.6 Many Facets Rasch Analysis.....	220
7.7 Scoring.....	221
7.8 Summary.....	222
Chapter 8 Demographic and Descriptive Information	224
8.1 Introduction	224
8.2 Student Demographic Background.....	225
8.3 Students' Attitudes, Motivation, Anxiety and Self-efficacy	231
8.4 Students' Conceptions of and Approaches to Learning	233
8.5 Students' English Language Proficiency.....	234
8.6 Teacher Demographic Background	236
8.7 Teachers' Approaches to Teaching	243
8.8 School Demographic Background.....	244
8.9 Summary.....	250

Chapter 9 Structural Equation Modelling: Student- and Teacher-level Models	252
9.1 Introduction	252
9.2 Variables and Scales in the Student-level Model	253
9.3 Hypothesised Student-level Model.....	255
9.4 Student-Level Model Results	258
9.5 Variables in the Teacher-level Model	273
9.6 Hypothesised Teacher-level Model	274
9.7 Teacher-level Model Results	276
9.8 Summary.....	281
Chapter 10 Students' English Language Proficiency: A Hierarchical Linear Model.....	284
10.1 Introduction	284
10.2 Variables in the Three-level Model	285
10.3 Three-level Model of English Language Proficiency.....	288
10.4 The Effects of Level-1, Level-2 and Level-3 Predictors on English Language Proficiency	298
10.5 The Interaction Effects	300
10.6 Variance Explained for the Three-level Model	310
10.7 Summary.....	311
Chapter 11 Discussion and Conclusion	313
11.1 Introduction	313
11.2 The Effects of Students' Attitudes and Motivation on English Language Proficiency.....	316
11.3 The Effects of Students' Anxiety and Self-Efficacy on English Language Proficiency.....	317
11.4 The Effects of Students' Conceptions of and Approaches to Learning on English Language Proficiency.....	317
11.5 The Effects of Students' Demographic Characteristics on English Language Proficiency	319
11.6 The Interrelationships of Student-level Factors	319
11.7 The Effects of Teachers' Demographic Characteristics and Approaches to Teaching on English Language Proficiency.....	322
11.8 The Interrelationships of Teacher-level Factors.....	323
11.9 The Effects of Schools' Demographic Characteristics on English Language Proficiency	324
11.10 Limitations and Future Research.....	325
11.11 Theoretical, Practical and Methodological Implications.....	327

11.12 Conclusion.....	329
Appendices.....	331
Appendix A: Ethics Approval Document	331
Appendix B: Participant Information Sheet, Consent Form and Contact Information.....	333
Appendix C: Student Questionnaire.....	343
Appendix D: Assessment Checklist	355
Appendix E: Inter-rater Reliability Check	362
Appendix F: Teacher Questionnaire	370
Appendix G: School Questionnaire.....	374
Appendix H: Pilot Study: Reliability and Item Modifications.....	378
Appendix I: Model Comparison of Confirmatory Factor Analysis	382
Appendix J: Person Fit Rasch Analysis	394
Appendix K: Re-examination of Scales After Item being Deleted	403
Appendix L: Many Facets Rasch Analysis	405
Appendix M: State Differences for Student-level Variables and Scales	410
References	412

List of Tables

Table 1.4.1	Subject Offered by the DJZ MICSS Working Committee to Junior-level Students	11
Table 1.4.2	Subjects Offered by the DJZ MICSS Working Committee to Senior-level Students	11
Table 2.2.1	Key Terms Used to Identify Review Articles for the First Systematic Review	27
Table 2.2.2	Key Terms Used to Identify Articles for the Second Systematic Review	29
Table 2.3.1	Key Factors Identified from the Individual Differences and SLA Research Reviews	32
Table 2.3.2	Major Issues Identified from the Individual Differences and SLA Research Reviews	33
Table 2.5.1	Summary: Students' Attitudes and Motivation and their Relationships with English Achievement	42
Table 2.6.1	Summary: Students' Anxiety, Self-efficacy and Confidence and their Relationships with English Achievement	46
Table 2.7.1	Summary: Students' Conceptions of and Approaches to Learning and their Relationships with English Achievement	50
Table 2.8.1	Summary: Students' Demographic Characteristics and their Relationships with Other Variables Identified in the Studies	53
Table 2.9.1	Types of Research Designs and Measures Employed in the Studies	54
Table 3.2.1	Key Terms Used to Identify Review Articles for the First Systematic Review	64

Table 3.2.2	Key Terms Used to Identify Articles for the Second Systematic Review	66
Table 3.3.1	Key Predictors and Outcome Variables Identified from the Teacher and School Effectiveness Reviews	69
Table 3.3.2	Major Issues Identified from the Teacher and School Effectiveness Reviews	71
Table 3.5.1	Summary: Teacher Demographic Characteristics and their Relationships with Other Variables Identified in the Studies	80
Table 3.6.1	Summary: Teacher Planning and Its Relationships with Other Variables Identified in the Studies	82
Table 3.7.1	Summary: Approaches to Teaching and Their Relationships with Other Variables Identified in the Studies	85
Table 3.8.1	Summary: School Size, Class Size and Instructional Time and Their Relationships with Other Variables Identified in the Studies	88
Table 3.9.1	Summary: School Facilities and Resources and Their Relationships with Other Variables Identified in the Studies	90
Table 3.10.1	Summary: High-stakes Assessments and Their Relationships with Other Variables Identified in the Studies	92
Table 3.11.1	Types of Research Designs and Measures Employed in the Studies	94
Table 4.2.1	Focus of the Presage, Process and Product Phases	103
Table 4.5.1	Distribution of Senior 1 MICSS Students according to Stream	117
Table 4.5.2	Distribution of Senior 1 MICSS Students according to State	118
Table 4.6.1	The Development of the Items in the Questionnaires and Assessment Checklists	129
Table 4.6.2	Scales and Expressions Used for the Purpose of this Study	131
Table 5.4.1	Fit Indices for Examining Model Fit of CFA	151

Table 5.4.2	Fit Indices for Examining the Model Fit of the Student- and Teacher- level Models	154
Table 5.5.1	Reasonable Item MNSQ Ranges	159
Table 5.5.2	Reasonable Person MNSQ Ranges	160
Table 6.3.1	Model Fit Comparison for ATTI, MOTI, INTE, ANXI and SEUU	177
Table 6.3.2	Factor Loadings of the One-factor Model of ATTI	178
Table 6.3.3	Factor Loadings of the Hierarchical Model of MOTI	180
Table 6.3.4	Factor Loadings of the Hierarchical Model of INTE	183
Table 6.3.5	Factor Loadings of the One-factor Model of ANXI	184
Table 6.3.6	Factor Loadings of the One-factor Model of SEUU	186
Table 6.4.1	Model Fit Comparison for COLE, APDE, APSU and APST	187
Table 6.4.2	Factor Loadings of the One-factor Model of COLE	188
Table 6.4.3	Factor Loadings of the One-factor Model of APDE	190
Table 6.4.4	Factor Loadings of the One-factor Model of APSU	191
Table 6.4.5	Factor Loadings of the One-factor Model of APST	193
Table 6.5.1	Model Fit Comparison for SRPG, TRPG and TRPS	194
Table 6.5.2	Factor Loadings of the One-factor Model of SRPG	195
Table 6.5.3	Factor Loadings of the One-factor Model of TRPG	196
Table 6.5.4	Factor Loadings of the Hierarchical Model of TRPS	199
Table 6.6.1	Model Fit Comparison for ITTF and CCSF	201
Table 6.6.2	Factor Loadings of the Two-orthogonal Factors Model of ITTF and CCSF	202
Table 7.3.1	Number of Misfitting Persons for Each Scale	206
Table 7.4.1	Model Parameter Estimates of ATTI (n=1070)	208
Table 7.4.2	Model Parameter Estimates of MOTI (n=1115)	209
Table 7.4.3	Model Parameter Estimates of INTE (n=1119)	210

Table 7.4.4	Model Parameter Estimates of ANXI (n=1059)	211
Table 7.4.5	Model Parameter Estimates of SEUU (n=1071)	211
Table 7.4.6	Model parameter estimates of COLE (n=1066)	212
Table 7.4.7	Model Parameter Estimates of APDE (n=1063)	213
Table 7.4.8	Model Parameter Estimates of APST (n=1057)	214
Table 7.4.9	Model Parameter Estimates of APSU (n=1054)	214
Table 7.4.10	Model Parameter Estimates of SRPG (n=1074)	215
Table 7.4.11	Model Parameter Estimates of TRPG (n=1155)	215
Table 7.4.12	Model Parameter Estimates of TRPS (n=1155)	217
Table 7.4.13	Model Parameter Estimates of ITTF (n=41)	218
Table 7.4.14	Model Parameter Estimates of CCSF (n=41)	218
Table 7.5.1	Item and WLE Person Separation Reliability for all Scales	219
Table 8.2.1	Students' State of Origin Distribution (n=1155)	226
Table 8.2.2	Weekly Time Students Spent on English Language Tuition (n=1151)	229
Table 8.2.3	Group Differences for Student Attentiveness	231
Table 8.6.1	Teachers' Gender Distribution (n=41)	237
Table 8.6.2	Teachers' Instructional Time Distribution (n=41)	242
Table 8.8.1	Number of Senior 1 Students (n=17)	244
Table 8.8.2	Senior 1 English Language Teachers (n=17)	245
Table 8.8.3	Yearly English Language Instructional Time for Senior 1 Classes (n=17).....	246
Table 8.8.4	School Facilities and Resources (n=17)	247
Table 8.8.5	English Language Syllabus Used in Schools (n=17)	248
Table 8.8.6	English Language Sub-skill Emphasis (n=17)	249
Table 8.8.7	High-stakes English Language Examinations (n=17)	249

Table 9.2.1	Latent and Manifest Variables in the Student-level Model	254
Table 9.4.1	Student-level Scales: Measurement Model Results	259
Table 9.4.2	Student-level Variables and Scales: Structural Model Results	262
Table 9.5.1	Variables in the Hypothesised Teacher-level Model	274
Table 9.7.1	Teacher-level Variables: Structural Model Results	277
Table 10.2.1	List of Variables Used in the Three-level Model	286
Table 10.3.1	The Null Model Results: Three-level Model of English Language Proficiency	294
Table 10.4.1	The Final Model Results: Three-level Model of English Language Proficiency	300
Table 10.6.1	Estimation of Variance Components: English Language Proficiency	311

List of Figures

Figure 1.2.1	The national and private educational systems in Malaysia.	5
Figure 2.4.1	English language focus identified in the second systematic review. ...	36
Figure 2.4.2	Country or continent where studies were conducted.	37
Figure 2.4.3	Presage, process and product stages applied in the studies.	38
Figure 2.9.1	Methods of data analysis for the quantitative and mixed methods studies.	55
Figure 2.9.2	Methods of establishing reliability and validity of questionnaires and tests.	56
Figure 3.4.1	Language of focus for studies identified in the second systematic review.	73
Figure 3.4.2	Country or continent where studies were conducted.	74
Figure 3.4.3	Presage, process and product stages applied in the studies.	75
Figure 3.11.1	Methods of data analysis for the quantitative and mixed methods studies.	96
Figure 3.11.2	Methods of establishing reliability and validity in the quantitative and mixed methods studies.	97
Figure 4.2.1	Presage, process and product phases applied to teaching and learning (adapted from Biggs, 1989).	105
Figure 4.3.1	Key elements of the quantitative research process for this study.	108
Figure 4.4.1	Nine-phase process for systematic review (adapted from Gough, 2007).	114
Figure 4.5.1	Location map of the MICSS and the 17 MICSS participated in this study.	120
Figure 5.4.1	An example of the measurement model.	149

Figure 5.4.2	An example of direct and indirect effects.....	153
Figure 5.7.1	Instrument validation, verification and calibration processes and scoring of data for use of this study.....	171
Figure 6.3.1	The one-factor model of ATTI.....	178
Figure 6.3.2	The hierarchical model of MOTI.....	181
Figure 6.3.3	The hierarchical model of INTE.....	182
Figure 6.3.4	The one-factor model of ANXI.....	184
Figure 6.3.5	The one-factor model of SEUU.....	185
Figure 6.4.1	The one-factor model of COLE.....	188
Figure 6.4.2	The one-factor model of APDE.....	189
Figure 6.4.3	The one-factor model of APSU.....	191
Figure 6.4.4	The one-factor model of APST.....	193
Figure 6.5.1	The one-factor model of SRPG.....	195
Figure 6.5.2	The one-factor model of TRPG.....	196
Figure 6.5.3	The hierarchical model of TRPS.....	198
Figure 6.6.1	The two-orthogonal factors model of ITTF and CCSF.....	202
Figure 8.2.1	Students' stream distribution (n=1155).....	227
Figure 8.2.2	Students' gender distribution (n=1155).....	227
Figure 8.2.3	Weekly time students spent on English language homework (n=1148).	228
Figure 8.2.4	Student-rated attentiveness and teacher rating of students' attentiveness for a typical English language lesson (n=1150; n=1138).	230
Figure 8.2.5	Student-rated attentiveness and teacher rating of students' attentiveness for a typical English language lesson (n=1150; n=1138).	230

Figure 8.3.1	Students reported attitudes, motivation, anxiety and self-efficacy...	232
Figure 8.4.1	Students reported conceptions of and approaches to learning.....	234
Figure 8.5.1	Student-rated English language proficiency in general.	235
Figure 8.5.2	Teacher rating of students' English language proficiency in general.	235
Figure 8.5.3	Teacher rating of students' English language proficiency for specific skills: Listening, speaking, reading and writing.	236
Figure 8.6.1	Teachers' age group distribution (n=40).	238
Figure 8.6.2	Teachers' academic qualification distribution (n=40).	238
Figure 8.6.3	Teachers' years of experience in teaching English (n=40).....	239
Figure 8.6.4	Teachers' professional development activities.....	240
Figure 8.6.5	Teachers' formal training (n=41).....	240
Figure 8.6.6	Teachers' class size distribution (n=41).	241
Figure 8.6.7	Teachers' lesson preparation time (n=40).	241
Figure 8.6.8	Weekly time teachers assigned English language homework to students (n=41).	243
Figure 8.7.1	Teachers reported teaching approaches.	243
Figure 8.8.1	Average Senior 1 English language student-teacher ratio and class size.	246
Figure 9.3.1	The hypothesised student-level model.....	257
Figure 9.4.1	The final student-level model (n=1 155).	261
Figure 9.6.1	The hypothesised teacher-level model.....	275
Figure 9.7.1	The final teacher-level model (n=41).	278
Figure 10.2.1	Three-level model of English proficiency.	288
Figure 10.3.1	The hypothesised three-level model of English Language proficiency.	289

Figure 10.4.1	The final three-level model for English language proficiency.	299
Figure 10.5.1	The cross-level interaction effect of average number of story books in the library on the slope of teacher rating of students' attentiveness on students' English proficiency.	304
Figure 10.5.2	The cross-level interaction effect of average emphasis in reading skills on the slope of conceptual change/student-focused teaching approaches on students' English proficiency.	307
Figure 10.5.3	The cross-level interaction effect of average teachers' professional development on the slope of students' motivation on students' English proficiency.	310

Abstract

Low English proficiency among secondary school students is a major concern in Malaysia, especially in the context of the Malaysian Independent Chinese Secondary Schools since Malaysian students who have spent eleven to thirteen years studying the English language are still not able to master it upon completing secondary schooling. In addition, a significant number of Malaysian graduates are unemployed, and even those who are employed receive complaints from the employers due to their limited English proficiency. It is argued that student-, teacher- and school-level factors may impact on students' English proficiency. A significant amount of research related to these factors has been conducted, ranging from finding universal trends to identifying differences. These studies have examined the relationships between students' characteristics, attitudes and motivation, anxiety and self-efficacy as well as conceptions of and approaches to learning; teachers' characteristics and approaches to teaching; as well as schools' demographic variables such as instructional time, student-teacher ratio, resources and facilities as well as curriculum and assessment. Researchers have shown that these factors may impact on students' English proficiency in a single-level model. However, numerous scholars have also argued that these factors may interact with each other and thus focussing on just a single level may not be sufficient to explain the complexity of English language learning and teaching. In addition, limited research has been conducted in the Malaysian context, especially in the Malaysian Independent Chinese Secondary Schools.

This research study examines the student-, teacher- and school-level factors, their interrelationships and their impact on students' English as a second language

proficiency. A quantitative research design was used including questionnaires and assessment checklist to collect data from the respondents. The respondents in this study involved the Malaysian Independent Chinese Secondary Schools located at the urban areas in Kuala Lumpur, Selangor, Perak and Penang, the Senior 1 English language teachers, and all Senior 1 students who were taught by these teachers. A number of scales and demographic items related to student-, teacher- and school-level factors were administered for the purpose of this study. All scales except the demographic items employed in this study were validated, calibrated and verified using the Confirmatory Factor Analysis and Rasch Analysis. In addition, as many teachers or raters from different schools and classes were involved in rating students' English language proficiency, their scores were adjusted by modelling rater judgement through the many facets Rasch analysis. The raw scores obtained from the responses in all scales were anchored to obtain the Weighted Likelihood Estimates for use in subsequent analyses which included the analyses for the student- and teacher-level models as well as the hierarchical linear model.

The Structural Equation Modelling approach was employed to examine the student- and teacher-level models. For the student-level model, all scales or variables and demographic items were examined with regards to their interrelationships and how they influenced students' English language proficiency. For the teacher-level model, the interrelationships of the variables and demographic items were examined. In addition, as data collected were of a hierarchical structure, the relationships among the nested variables in school-, teacher- and student-levels, how these variables influenced students' English language proficiency, and the cross-level interactions of these variables were examined in the hierarchical linear model.

Results of the analyses show that student-, teacher- and school-level variables influence students' English language proficiency. A significant finding from this study is that students' motivation, attentiveness in class, the use of deep and surface learning approaches as well as the student-focused teaching approaches and the number of students in schools directly influence students' English language proficiency. The findings further indicate that students who have higher levels of motivation and attentiveness as well as who use deep learning approaches more tend to have higher English proficiency levels. On the other hand, students who use surface learning approaches more tend to have lower English proficiency levels. The findings also indicate that the more teachers use student-focused teaching approaches and the more students schools have, the more likely students achieve at a higher level in English. Furthermore, while the number of story books in the library moderates the effect of students' attentiveness on their English proficiency negatively, the emphasis in reading skills moderates positively the effect of student-focused teaching approaches on students' English proficiency. In addition, teachers' formal professional development activities positively moderate the effect of students' motivation on students' English proficiency. Moreover, multiple interrelationships among the student-level variables are identified in the student-level model. Although not as complicated as the student-level model, the results from the teacher-level model also indicate the interrelationships among the teacher-level variables. Thus, the results of this study support the idea that student-, teacher- and school-level factors interact with each other and impact on students' English language proficiency.

This research is particularly meaningful with regards to its contribution to the theoretical, practical and methodological implications in the English language

learning and teaching. These findings suggest new courses of action for designing a suitable curriculum for English learners, strategies for teaching and improving teaching skills as well as a better environment for the learning and teaching of English in the Malaysian Independent Chinese Secondary Schools. The student-, teacher- and school-level factors need to be taken into considerations when one aims to improve students' English language proficiency.

Declaration

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name, in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name, for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint-award of this degree.

I give consent to this copy of my thesis, when deposited in the University Library, being made available for loan and photocopying, subject to the provisions of the Copyright Act 1968.

I also give permission for the digital version of my thesis to be made available on the web, via the University's digital research repository, the Library Search and also through web search engines, unless permission has been granted by the University to restrict access for a period of time.

Signed

Date 20 April 2016

Acknowledgements

Immeasurable appreciation and deepest gratitude for the assistance, guidance and support are extended to the following persons and institutions, without which this thesis would not have been completed.

My deepest appreciation goes to the Curriculum Board of the United Chinese School Committees' Association of Malaysia, Dong Zong and the Malaysian Independent Chinese Secondary Schools. They willingly allowed me to access to their students, teachers, classrooms and information necessary for me to carry out my research. My thanks are also addressed to the students, teachers and principals or coordinators who participated in my research. Without them, I would not have completed this research project.

I am also indebted to the University of Adelaide for providing an ASI scholarship for the duration of my study.

My deepest gratitude to both of my supervisors Dr Michelle Picard and Dr I Gusti Ngurah Darmawan for their scholarly guidance and dedication. My deepest appreciation goes to Dr Michelle Picard, who devoted so much time in guiding me to develop my proposal and to improve my academic writing. Thank you for always being there, ready to listen and provide constructive feedback for improvements. You have been a great source of inspiration.

My deepest thanks are also addressed to Dr I Gusti Ngurah Darmawan. Thank you for making my research journey enjoyable and learning new things about

measurement and assessments. Thank you for all the opportunities that not only made me learn the proper ways of conducting research and data analysis, but also made me reflect about my life and my dreams.

I would also like to acknowledge the administrative staff of School of Education for their support and for making my research journey a comfortable one.

My special thanks go to Elizar and Michelle. Thank you for being my extended family in Adelaide. Thank you for your support, prayers, and thank you for always being there, just for me. Thank you for sharing your experience, knowledge, laughter and tears. It is a blessing to know you both.

To my family, my dad and my mom, my two brothers, thank you for your love and support. Thank you for always taking good care of yourselves, so that I can work in a place very far from you without much worries.

Lastly, my warmest appreciation goes to my husband, Wen Bin, for the love, encouragement, understanding and support throughout my research journey. Thank you for making my dream comes true.