

**Music in Malaysian Higher Education:
The Relationships among Personal-Environmental Factors
and Measured Achievement of Students' Music Performance**

Pey Shin Ooi

A.Mus.A., CertIVMus, B.Mus., M.Ed.

Thesis submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy

School of Education, Faculty of Arts

The University of Adelaide

March 2017

To my parents. With love, Pey.

Abstract

Music learning involves mastering a complex set of skills. Motivation is particularly important to this learning process, as considerable persistence and resilience is required. There are many empirical studies that show the importance of motivation, and the influences of environmental factors, on the development of music performance skills. However, these mostly focus on the school sector, and specific research in higher education settings is lacking.

This study investigates different factors that could impact on music students' learning processes and learning outcome in the context of Malaysian higher education. Hallam's (1998) *Model of Instrumental Music Learning* is adapted as the basic framework for exploring the relationships between students' motivation towards instrumental music learning, environmental factors (with a focus on parental factors), self-regulation and the measured achievement of performance. This model anticipates Biggs's *3P Model of Learning* (1987, 1999), describing music learning in three stages (presage-process-product). In addition, the relevant literature is reviewed, with a view to consolidating the theoretical bases that link the relationships between the factors identified for this study.

A mixed methods design is adopted, combining the strengths of quantitative and qualitative approaches. The quantitative data has been collected using two instruments developed on the basis of existing scales: The Music Student Survey Questionnaire, Malaysian Higher Education (2014), and the Music Performance Assessment Report. Several existing scales designed to measure self-concept, self-efficacy, personal interest, extrinsic motivation, parental involvement, and self-regulation have been adapted for use in the survey questionnaire. The music performance rating scale developed to collect achievement results for the Royal College of Music (RCM) in London has been adapted for use in the assessment report. These instruments were administered to 375 university music students and 33 examiners respectively, from seven universities. Semi-structured interviews were conducted with 19 students to collect qualitative data. Open-ended, theory-driven, and probing questions were prepared to gain an in-depth understanding of the factors that have an impact on students' music learning processes.

Ensuring rigour in research is crucial to yield meaningful and useful results. Statistical procedures including structural equation modelling using confirmatory factor

analysis, and Rasch Modelling are undertaken to validate the survey scales used in the quantitative component of this study. Various strategies including member checking, audit trail, and external/peer review are employed to ensure trustworthiness of the qualitative component.

Quantitative data analysis is carried out using the path analytic technique to investigate the postulated relationships among the factors considered in this study. The results suggest that highest qualification in music (e.g., ABRSM Grade 8) prior to entering university influenced students' achievement in music performance. The findings also show that students' level of expertise, parental factors, and motivational beliefs have significant impact on self-regulated learning. For the qualitative data analysis, a thematic analysis is conducted in order to identify and interpret the associations between significant themes/patterns that emerge from the interview data. Students indicate that parents, teachers, and university play an important role in their musical development.

The results of this study have important implications for the design of university music education and for the conduct of parent-teacher-student relationships, and may assist educators to improve and maintain students' motivation, and to enhance the quality of music learning experiences.

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.

The author acknowledges that copyright of published works contained within this thesis resides with the copyright holder(s) of those works.

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.

I acknowledge the support I have received for my research through the provision of an Australian Government Research Training Program Scholarship.

Pey Shin Ooi

25th March 2017

Acknowledgement

I would like to express my deepest gratitude to my supervisors, Dr Ian Green, Dr Francisco Ben, and Dr Janelle Fletcher. Thank you for your guidance and support throughout my candidature. Your wisdom, patience, enthusiasm, and encouragement have always been my inspiration to challenge my research skills and critical thinking, and to be a better person. Thank you for being my role models.

I am also indebted to Dr Jennifer Rosevear, my previous co-supervisor, who left the team upon retiring from the University, for sharing her expertise during my candidature.

Sincere appreciation also goes to the participants, universities, staff members, and Malaysian government departments and officials associated with my research. Without them I would not have been able to embark on this research. Thank you to the students and examiners who shared their time and opinions. Thank you to the universities and government for granting permission to carry out this research. Thank you to the staff members who helped me in co-ordinating the research.

To my mum and dad, and brothers, thank you for your constant support and understanding throughout my PhD journey. Special thanks to my best friend, Khor Yee Phing, for lending me her ear at all times.

I am also much obliged to my friends and fellow PhD students for their encouragement and support at every stage.

Finally, I beg forgiveness of all those who have been with me over the course of this research project, and whose names I have failed to mention. Your contributions are invaluable to the completion of this study.

Table of Contents

Abstract	i
Declaration	iii
Acknowledgement	iv
Table of Contents	v
List of Tables	ix
List of Figures	xi
Glossary	xii
Abbreviations	xv
Chapter 1: Music in Higher Education	1
1.1 Introduction	1
1.1.1 The Role of Higher Education	2
1.1.2 The Importance of Students' Motivation	4
1.2 Statement of Problem	6
1.2.1 Current State of Research.....	6
1.2.2 Instrumental Music Education	7
1.2.3 Music Education in Malaysia.....	8
1.3 Significance of the Study.....	10
1.4 Aims of the Study	11
1.5 Research Questions.....	11
1.6 Overview of the Thesis	13
1.7 Summary.....	15
Chapter 2: Literature Review	16
2.1 Introduction	16
2.2 Conceptual Framework.....	16
2.3 Students' Motivation towards Learning Instrumental Music	18
2.3.1 Self-Concept.....	22
2.3.2 Self-Efficacy	23
2.3.3 Personal Interest	25
2.3.4 Perceived Values.....	27
2.4 Parental Involvement and Socio-Economic Status.....	28
2.5 Student's Self-Regulation.....	31
2.6 Music Performance Assessment	33
2.7 Summary.....	34
Chapter 3: Research Methods	36

3.1	Introduction	36
3.2	Choice of Methods.....	36
3.3	The Underpinning Research Paradigm.....	37
3.4	Ethics Clearance	38
3.4.1	Participants' Consent	39
3.5	Sample Selection and Data Collection	39
3.5.1	Sample Selection.....	39
3.5.2	Data Collection Procedures.....	40
3.6	Instrument Design.....	42
3.6.1	Survey Questionnaire	43
3.6.2	Music Performance Rating Scale	51
3.6.3	Semi-Structured Interview Guide.....	52
3.7	Pilot Study	53
3.7.1	Student Survey Questionnaire.....	53
3.7.2	Music Performance Rating Scale	55
3.7.3	Semi-Structured Interview Guide.....	56
3.8	Finalisation of the Instruments	56
3.8.1	Student Survey Questionnaire.....	56
3.8.2	Music Performance Rating Scale	56
3.9	Data Preparation	57
3.10	Validity and Reliability of the Instruments and Data.....	58
3.10.1	Validity and Reliability of the Quantitative Instruments	58
3.10.2	Quality of the Interview Data.....	59
3.11	Data Analysis	59
3.11.1	Quantitative Data Analysis	60
3.11.2	Qualitative Data Analysis	60
3.12	Summary	60
Chapter 4: Methodological Considerations.....		62
4.1	Introduction	62
4.2	What is Measurement?	63
4.3	Importance of Validity and Reliability	64
4.3.1	Validity.....	64
4.3.2	Reliability.....	65
4.4	Validation Procedures.....	66
4.4.1	Confirmatory Factor Analysis.....	67
4.4.2	Item Analysis using Rasch Rating Scale Model	72

4.5	Quality of the Qualitative Study	78
4.6	Strategies Used to Maintain Quality of the Qualitative Study	80
4.7	Summary	82
Chapter 5: Instrument Validation and Quality of Qualitative Study		84
5.1	Introduction	84
5.2	The “Student Motivation towards Learning Instrumental Music” (SMLIM) Instrument	84
5.2.1	SMLIM Instrument: Confirmatory Factor Analysis	86
5.2.2	SMLIM Instrument: Item Analysis using Rasch Rating Scale Model	90
5.3	The “Parental Involvement” (PI) Instrument.....	92
5.3.1	PI Instrument: Confirmatory Factor Analysis.....	93
5.3.2	PI Instrument: Item Analysis using Rasch Rating Scale Model	96
5.4	The “Self-Regulation” (SR) Instrument	97
5.4.1	SR Instrument: Confirmatory Factor Analysis.....	98
5.4.2	SR Instrument: Item Analysis using Rasch Rating Scale Model	105
5.5	Music Performance Rating Scale (MPRS)	107
5.5.1	MPRS: Confirmatory Factor Analysis	108
5.5.2	MPRS: Item Analysis using Rasch Rating Scale Model.....	110
5.6	The Interview Data	111
5.7	Summary.....	112
Chapter 6: Analytic Techniques and Procedures		115
6.1	Introduction	115
6.2	Preparation of Collected Data for Analysis	115
6.2.1	Quantitative Data	115
6.2.2	Qualitative Data	119
6.3	Multiple Regression Analysis.....	119
6.4	Path Analysis	121
6.5	Thematic Analysis	123
6.6	Summary.....	125
Chapter 7: Analysis Results		127
7.1	Introduction	127
7.2	Descriptive Information.....	127
7.2.1	Quantitative Data Source	127
7.2.2	Qualitative Data Source	129
7.3	Results of Multiple Regressions Analysis	129
7.4	Results of Path Analysis	138

7.4.1	Direct Effects	142
7.4.2	Indirect Effects	147
7.4.3	Total Effects	149
7.5	Results of Conducting Thematic Analysis of the Qualitative Data.....	152
7.6	Summary.....	165
Chapter 8: Conclusions	167
8.1	Introduction	167
8.2	Findings of the Study.....	168
8.2.1	Students' Level of Expertise	168
8.2.2	Students' Motivation and Self-Regulation.....	170
8.2.3	Home Learning Environment.....	172
8.2.4	Social Environmental Factors	175
8.3	Implications of the Study.....	176
8.3.1	Theoretical Implications.....	176
8.3.2	Methodological Implications	177
8.3.3	Music in Malaysian Higher Education Implications.....	179
8.3.4	Musical Motivation: Parent-Student-Teacher Implications	180
8.4	Limitations of the Study and Future Recommendations	180
8.5	Concluding Remarks	182
Appendices	184
A.	Ethics Approval: The University of Adelaide.....	185
B.	Flow Chart of Activities Involved in Applying to Conduct Research in Malaysia..	187
C.	Ethics Approval: Malaysian Economic Planning Unit (1)	188
D.	Ethics Approval: Malaysian Economic Planning Unit (2).....	190
E.	Survey: Participants' Information Sheet and Survey Questionnaire	192
F.	Assessment: Participants' Information Sheet and Music Performance Rating Scale	201
G.	Interview: Participants' Information Sheet, Consent Form, and Interview Guide...	204
H.	Complaints Information Sheet	207
I.	Codebook: Survey Questionnaire	208
J.	Codebook: Music Performance Assessment	217
K.	Codebook: Interview	220
References	223

List of Tables

Table 2.1. Examples of behavioural indicators of motivation.....	20
Table 2.2. Differences between self-concept and self-efficacy.....	23
Table 3.1. Scales included in SMLIM, PI, and SR instruments.....	53
Table 4.1. Guidelines for interpretation of the value of the factor loadings.....	70
Table 4.2. Guidelines for identifying significant factor loadings based on sample size.	71
Table 4.3 Guidelines for cut-off values to indicate good model fit.....	72
Table 4.4. Criteria for assessing quality of qualitative research.....	79
Table 4.5. Strategies used to maintain the quality of the qualitative research.....	80
Table 5.1. Item summary of the SMLIM instrument.....	85
Table 5.2. Factor loadings of one-factor model for latent variables in SMLIM instrument.	89
Table 5.3. Model fit indices for latent variables in SMLIM instrument.....	90
Table 5.4. Item analysis results for constructs in SMLIM instrument.....	91
Table 5.5. Item summary of the PI instrument.....	92
Table 5.6. Factor loadings of one-factor model for latent variables in PI instrument.....	95
Table 5.7. Model fit indices for latent variables in PI instrument.....	95
Table 5.8. Item analysis results for constructs in PI instrument.....	96
Table 5.9. Item summary of the SR instrument.....	97
Table 5.10. Model fit indices for four correlated and hierarchical factor models (SR instrument).....	102
Table 5.11. Factor loadings of one-factor model for latent variables in SR instrument....	104
Table 5.12. Model fit indices for latent variables in SR instrument.....	105
Table 5.13. Item analysis results for constructs in SR instrument.....	106
Table 5.14. Item summary of the MPRS instrument.....	107
Table 5.15. Descriptors of the ten-point response scale.....	108
Table 5.16. Factor loadings of one-factor model for latent variable in MPRS instrument.	109
Table 5.17. Model fit indices for latent variable in MPRS instrument.....	110
Table 5.18. Item analysis results for construct in MPRS instrument.....	110
Table 5.19. Example of transcription template.....	111
Table 5.20. Example of codebook template.....	112
Table 7.1. Summary of quantitative sample distribution.....	127

Table 7.2. Summary of quantitative sample distribution (after addressing missing value).	128
Table 7.3. Regression analysis results (regression coefficients, errors and <i>t</i> values) of the relationship between students' level of expertise and motivation.	131
Table 7.4. Regression analysis results (regression coefficients, errors and <i>t</i> values) of the relationship between students' level of expertise and self-regulation.	132
Table 7.5. Regression analysis results (regression coefficients, errors and <i>t</i> values) of the relationship between students' level of expertise and music performance achievement. .	133
Table 7.6. Regression analysis results (regression coefficients, errors and <i>t</i> values) of the relationship between students' motivation and self-regulation.	134
Table 7.7. Regression analysis results (regression coefficients, errors and <i>t</i> values) of the relationship between students' home learning environment and motivation.	136
Table 7.8. Regression analysis results (regression coefficients, errors and <i>t</i> values) of the relationship between students' home learning environment and self-regulation.	137
Table 7.9. Summary of the variables used in the path model.	139
Table 7.10. Summary of causal effects for path model shown in Figure 7.3.	150
Table 7.11. Summary of interview codes.	152

List of Figures

Figure 2.1. Model of instrumental music learning based on Hallam’s model (1998).	18
Figure 3.1. The sequence of data collection.	41
Figure 4.1. Example of a factor model.	68
Figure 4.2. Example of one-factor model.	70
Figure 4.3. Illustration of item thresholds of a rating scale.	76
Figure 4.4. Validation of the scales used in the study.	77
Figure 5.1. The hypothesised model of one-factor CFA (SMLIM instrument).	88
Figure 5.2. The hypothesised model of one-factor CFA (PI instrument).	94
Figure 5.3. The hypothesised model of four correlated factor model (SR instrument).	100
Figure 5.4. The hypothesised model of hierarchical factor model (SR instrument).	101
Figure 5.5. The hypothesised model of one-factor CFA (SR instrument).	103
Figure 5.6. The hypothesised model of one-factor CFA (MPRS instrument).	109
Figure 7.1. Example of a simple path diagram.	138
Figure 7.2. Model of instrumental music learning.	140
Figure 7.3. Final results of the path diagram showing the interactions among the personal-environmental factors influencing students' music performance achievement.	141
Figure 7.4. Example of a path diagram with indirect effect.	147
Figure 7.5. Example of a path diagram with total effects.	149
Figure 7.6. Example of coding technique used that may reduce the validity of the quantification findings.	155
Figure 7.7. Overview of the relationships among student motivation, family and environmental factors.	166

Glossary

Confirmatory factor analysis (CFA)

A statistical technique used to determine whether the hypothesised factor model yields a variance-covariance matrix similar to the observed data (Schumacker & Lomax, 2016). It is a test level analysis carried out as part of the validation procedures to review the factor structure of the scales (i.e., macro-level analysis).

Expectancy x value theory

A theory developed by Atkinson (1947), and later expanded by Eccles (1983) and her colleagues into the field of education, which explains that students' motivation and achievement are determined by expectancies for success and values of the task. The four motivational constructs examined in this study based on expectancy x value theory are: self-concept, self-efficacy, personal interest, and perceived values.

Family socio-economic status

Family socio-economic status is measured by parents' education, parents' occupation, and home possessions, which is conceptualised as the financial, cultural, and social capital of a family.

Multiple regression analysis

A general linear modelling approach to statistical analysis of data that is used to predict and explain the relationship between the dependant variable (outcome) and multiple independent variables (predictor) (Schumacker, & Lomax, 2016).

Music performance achievement

A construct used to indicate that learning outcomes are successfully achieved by music students in the performance assessment situations. It is measured using music performance rating scale consists of a set of pre-defined assessment criteria.

Path analysis

A statistical analytic technique that is extended from multiple regression. It provides estimates of the magnitude (path coefficient) and significance (p value) of the hypothesised causal relationships among the observed variables in a theoretical model.

Perceived value

A construct associated with students' perceived importance and usefulness of engaging in an activity to achieve a goal.

Personal interest

A construct associated with students' motivation to engage in an activity because it is intrinsically rewarding or inherently satisfying.

Rasch model

A modelling approach developed by Georg Rasch in 1960. The Rasch model is based on probabilistic assumption that is constructed as a logistic function, placing person ability and item difficulty on a common scale, known as the logit scale. It is originally developed to handle dichotomous data (e.g., yes/no), but later extended to cover a range of situations including polytomous data (e.g., rating scale).

Rasch rating scale analysis

A statistical technique based on the Rasch measurement model and used to examine the psychometric properties of the measurement scales at the item level (i.e., micro-level analysis). It considers the characteristics of individual items in terms of how they meet unidimensionality requirements (i.e., that all of the observed variables reflect a single latent variable).

Reliability

Reliability refers to the measurement of consistency and the degree to which the observed scores are free from measurement errors (Miller, 2010). Reliability is a necessary condition for validity to ensure rigour in quantitative research.

Self-concept

Students' self-perceived ability, which combines their cognitive and affective states and involves social comparison (Bong & Clark, 1999).

Self-efficacy

Students' self-perceived ability. Self-efficacy differs from self-concept that it is primarily based on cognitive self-judgement of their abilities to succeed in a specific task (Bong & Clark, 1999).

Self-regulation

Students who are metacognitively, motivationally, and behaviourally active in their own learning process (Zimmerman, 1989) are said to exhibit 'self-regulation'. They apply specific learning strategies to achieve success in relation to their goals of learning (Winne & Hadwin, 2010). A self-regulation model consists of four dimensions: (a) method: task-oriented learning strategies; (b) behaviour: metacognition and orientations toward reflective thinking of own learning; (c) time management: ability to concentrate on task and plan the use of time effectively; and (d) help-seeking behaviour: tendency to seek help from others to improve learning (McPherson & Zimmerman, 2002; Miksza, 2012).

Students' motivation

Students' behaviours that are associated with their desire to learn, engagement in learning, persistence in learning, and their academic success.

Thematic analysis

A qualitative data analysis method used to identify key words, repeated ideas, and associations between the key words/repeated ideas in a body of textual data (Guest, MacQueen & Namey, 2012).

Trustworthiness

Quality of the qualitative study that is reflected by four criteria: (a) credibility: confidence in the 'truth value' of the findings and interpretations; (b) transferability: applicability of the findings in other contexts; (c) dependability: consistency of the findings; and (d) confirmability: the extent to which the findings and interpretations are reflective of participants' perceptions (Guba, 1981).

Validity

Validity refers to the extent to which a test is measuring what it purports to measure. Validation procedures are carried out to evaluate the psychometric properties of the instruments employed in a testing situation. Valid and reliable measures are important for making useful and meaningful inferences.

Abbreviations

AEC	: European Association of Conservatoires
AERA	: American Educational Research Association
APA	: American Psychological Association
ASDQ	: Academic Self-Description Questionnaire
CFA	: Confirmatory Factor Analysis
CTT	: Classical Test Theory
EFA	: Exploratory Factor Analysis
EPU	: Economic Planning Unit
HOMES	: Home Musical Environment Scale
IEA	: International Association for the Evaluation of Educational Achievement
IRT	: Item Response Theory
ML	: Maximum Likelihood
MNSQ	: Mean Square
MPRS	: Music Performance Rating Scale
MSI	: Motivation Survey Instrument
MSLQ	: Motivated Strategies for Learning Questionnaire
NAHME	: National Association for Music in Higher Education
NCME	: National Council on Measurement in Education
OECD	: Organisation for Economic Co-Operation and Development
PCM	: Partial Credit Model
PI	: Parental Involvement
PIM	: Parental Involvement Measures
PISA	: Programme for International Student Assessment
PMD	: Prime Minister's Department
RCM	: Royal College of Music
RQ	: Research Question
QAA	: Quality Assurance Agency for Higher Education
RSM	: Rating Scale Model
SDQ	: Self-Description Questionnaire
SEM	: Structural Equation Modelling
SMLIM	: Student Motivation towards Learning Instrumental Music
SPSS	: Statistical Package for the Social Sciences
SR	: Self-Regulation

- SRPBQ : Self-Regulated Practice Behaviours Questionnaire
- TIMSS : Trends in International Mathematics and Science Study
- UAHREC : University of Adelaide Human Research and Ethics Committee
- VIF : Variation Inflation Factors
- WLE : Weighted Likelihood Estimation