

**EXPLORING AUTHENTIC LEARNING
STRATEGIES IN A MOBILE CLOUD
COMPUTING ENVIRONMENT (AuLStr)
AMONG PRIMARY SCHOOL ENGLISH
LANGUAGE LEARNERS' WRITING
EXPERIENCE**

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UNIVERSITI SAINS MALAYSIA

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by

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

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DEDICATION

To my beloved late father,

Mr Bun Tiang Sengsuwan

and

to my lovely late sister,

Ms Bup Pha Sengsuwan

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TABLE OF CONTENTS

ACKNOWLEDGEMENT	ii
TABLE OF CONTENTS	iii
LIST OF TABLES	viii
LIST OF FIGURES	x
LIST OF ABBREVIATIONS	xii
LIST OF APPENDICES	xiii
ABSTRAK	xiv
ABSTRACT	xvii
CHAPTER 1 INTRODUCTION	1
1.1 Introduction.....	1
1.2 Background of the Study	5
1.3 Statement of the Problem.....	13
1.4 Research Objectives.....	20
1.5 Research Questions	22
1.6 Theoretical Framework.....	23
1.7 Significance of the Study	25
1.7.1 Malaysian Ministry of Education.....	25
1.7.2 Teachers	25
1.7.3 Primary Schoolchildren.....	25
1.8 Definition of Operational Terms.....	26
1.8.1 Primary Schoolchildren.....	26
1.8.2 English Language Learners (ELLs)	26
1.8.3 English as Additional Language (EAL).....	26
1.8.4 Authentic Learning Strategies.....	27
1.8.5 Mobile Cloud Computing Environment.....	28
1.8.6 Writing Experience	28
1.8.7 Writing Apprehension.....	29
1.8.8 Writing Motivation	29
1.8.9 Writing Attitudes.....	30
1.9 Summary.....	30
CHAPTER 2 LITERATURE REVIEW	31

2.1	Introduction.....	31
2.2	English Writing.....	32
	2.2.1 English Writing in Primary Schools	33
	2.2.2 English Writing in Malaysia	35
	2.2.3 Issues in Writing in Malaysian Chinese-vernacular Schools.....	36
2.3	Writing Apprehension.....	39
	2.3.1 Writing Apprehension and the Causes	41
	2.3.2 Writing Apprehension and Primary Schoolchildren	45
	2.3.3 Writing Apprehension and the Solutions	48
2.4	Authentic Learning Strategies.....	53
	2.4.1 Authentic Tasks.....	55
	2.4.2 Collaborative Writing.....	59
	2.4.3 Reflection	62
2.5	Mobile Cloud Computing	65
	2.5.1 Mobile Cloud Computing in Education	66
	2.5.2 Mobile Cloud Computing in Malaysian Classrooms	70
	2.5.3 Mobile Cloud Computing in the English Language Subject	74
2.6	Theoretical Framework of the Study	78
	2.6.1 Situated Learning Theory.....	78
	2.6.2 Socio-cultural Theory of Writing.....	81
	2.6.3 Gardner’s Motivation Theory	82
	2.6.4 Socio-educational Model	83
2.7	Insights of Related Research.....	86
2.8	Conceptual Framework.....	92
2.9	Summary.....	93
	CHAPTER 3 METHODOLOGY	95
3.1	Introduction.....	95
3.2	Research Paradigm.....	95
	3.2.1 Interpretive Research Paradigm	95
	3.2.2 Research Approach	96
	3.2.3 Research Design.....	98
3.3	Selection of Participants	99
	3.3.1 The Primary Schoolchildren’s Characteristics.....	100

3.4	Research Instruments	101
3.4.1	Interview	102
	3.4.1(a) Interview Protocol	103
	3.4.1(b) Conducting the Interview	108
3.4.2	Non-Participant Observation.....	109
3.4.3	Reflections.....	112
3.4.4	Document Review	115
3.5	Research Procedure.....	119
3.5.1	Time and Setting	120
3.5.2	Context	121
3.5.3	AuLStr Writing Class	123
3.5.4	The Flow of the Research Procedure	130
3.6	Data Analysis	132
3.6.1	Data Management and Data Organisation	133
3.6.2	Data Analysis and Interpretation.....	134
3.6.3	Analysing the Data.....	135
	3.6.3(a) Analysing Interview Data	135
	3.6.3(b) Analysing Fieldnotes Data	136
	3.6.3(c) Analysing Reflective Journals Data.....	136
	3.6.3(d) Analysing Document Reviews Data.....	136
	3.6.3(e) Qualitative Data Analysis Software.....	137
3.6.4	Coding Process.....	138
3.6.5	Triangulation of Data Sources	144
3.7	Trustworthiness.....	145
3.7.1	Dependability	146
3.7.2	Confirmability	147
3.7.3	Credibility	148
3.7.4	Transferability	149
3.8	Ethical Consideration.....	150
3.9	Design and Development of AuLStr.....	152
3.9.1	ASSURE Instructional Design (ID) Model.....	152
3.9.2	Authentic Learning Principles.....	153
3.9.3	ASSURE ID Model and its Relationship with AuLStr Design....	155

3.9.3(a)	Analyse Learners	156
3.9.3(b)	State Standards and Objectives	157
3.9.3(c)	Select Strategies, Technology and Instructional Resources...	158
3.9.3(d)	Utilise Resources	159
3.9.3(e)	Require Learner Participation.....	160
3.9.3(f)	Evaluate and revise	161
3.9.4	Components of AuLStr	162
3.10	Summary	163
CHAPTER 4 RESEARCH FINDINGS		165
4.1	Introduction.....	165
4.2	Background.....	166
4.3	Research Question 2 (RQ2)	171
4.3.1	Theme 1: Pedagogical Supports.....	173
4.3.2	Theme 2: Effective Feedback.....	176
4.4	Research Question 3 (RQ3)	180
4.4.1	Theme 3: Online Collaborative Writing	182
4.4.2	Theme 4: Online Reflective Writing.....	185
4.4.3	Theme 5: Feedback from Peers.....	188
4.5	Research Question 4 (RQ4)	190
4.5.1	Theme 6: Optimistic Attitude towards Writing	193
4.5.2	Theme 7: Collaboration with Peers.....	195
4.5.3	Theme 8: Enhanced Writing Motivation.....	202
4.6	Research Question 5 (RQ5)	205
4.6.1	Theme 9: Technical.....	207
4.6.2	Theme 10: Conventions and Word Choice	209
4.6.3	Theme 11: Team Members Learning Style.....	211
4.7	Emerging Themes	214
4.7.1	Emerging Theme 1: Factors for Consideration.....	215
4.7.2	Emerging Theme 2: Future Developments	220
4.8	Completed Written Work.....	225
4.8.1	Ideas and Content.....	226
4.8.2	Organization.....	227

4.8.3	Fluency	229
4.8.4	Conventions and Word Choice	231
4.9	Summary	234
CHAPTER 5 DISCUSSION AND CONCLUSION		238
5.1	Introduction.....	238
5.2	Summary of the Study	238
5.3	Findings of the Study	240
5.3.1	Research Question 2.....	241
5.3.2	Research Question 3.....	244
5.3.3	Research Question 4.....	247
5.3.4	Research Question 5.....	253
5.3.5	Emerging Themes	255
5.4	Limitations of the Study.....	257
5.5	Implications of the Study	259
5.6	Recommendations for Future Research	262
5.7	Conclusions.....	264
REFERENCES.....		267
APPENDICES		
LIST OF PUBLICATIONS		

LIST OF TABLES

		Page
Table 1. 1	Vernacular Schools <i>UPSR</i> Writing Performance in 2019	16
Table 2. 1	Writing Anxiety, Writing Apprehension & Writer’s Block	40
Table 2. 2	Causes of Writing Apprehension	42
Table 2. 3	Writing Apprehension in L2 Context	46
Table 2. 4	Writing Anxiety in L2 Context	47
Table 2. 5	A review of studies on authentic learning	58
Table 2. 6	The DELIMa Platform	76
Table 2. 7	Tenets of Conceptualization of Socio-cultural Theory of Writing	87
Table 3. 1	The Primary ELLs’ Writing Apprehension Test Scores	101
Table 3. 2	Research Question Four and the Interview Questions	105
Table 3. 3	Modification report for teachers interview guide	106
Table 3. 4	Modification report for ELLs interview guide	107
Table 3. 5	Protocol for Observation	111
Table 3. 6	Writing attributes	118
Table 3. 7	Principles in AuLStrA Guide to Writing	122
Table 3. 8	Authentic Writing Task 4 (AWT4)	123
Table 3. 9	Characteristics of AuLStrA Writing Tasks	124
Table 3. 10	Authentic Writing Tasks (AWT)	125
Table 3. 11	Device used by Participants	129
Table 3. 12	Criteria for Trustworthiness in the Study	146
Table 3. 13	Application of Authentic Learning principles in AuLStrA design	154
Table 3. 14	The selected content standards and learning standards for AuLStrA ..	157
Table 3. 15	Examples of learning objective for AuLStrA	158
Table 4. 1	Participant Demographics (ELLs’ group)	167
Table 4. 2	Participant Demographics (Teachers’ group)	170
Table 4. 3	Themes, codes and sub-codes for RQ2	172
Table 4. 4	Examples of selected responses and instruments for T1	174
Table 4. 5	Examples of selected responses and instruments for T2	177
Table 4. 6	Themes, codes and sub-codes for RQ3	180
Table 4. 7	Examples of selected responses and instruments for T3	183

Table 4. 8	Examples of Selected Responses and Instruments for T4	186
Table 4. 9	Examples of Selected Responses and Instruments for T5	188
Table 4. 10	Themes, codes and sub-codes for RQ4.....	191
Table 4. 11	Examples of selected responses and instruments for T6	193
Table 4. 12	Examples of selected responses and instruments for T7	196
Table 4. 13	Examples of selected responses and instruments for T8	203
Table 4. 14	Themes, codes and sub-codes for RQ5.....	206
Table 4. 15	Examples of selected responses and instruments for T9	208
Table 4. 16	Examples of selected responses and instruments for T10	210
Table 4. 17	Examples of selected responses and instruments for T11	212
Table 4. 18	Themes, codes and sub-codes for emerging themes.....	214
Table 4. 19	Examples of selected responses and instruments for E1	216
Table 4. 20	Examples of selected responses and instruments for E2	220
Table 4. 21	Analysis of Completed Written Work (overall)	226
Table 4. 22	Ideas and content (prose)	226
Table 4. 23	Ideas and content (poetry).....	227
Table 4. 24	Organization (prose)	228
Table 4. 25	Organization (poetry).....	229
Table 4. 26	Fluency (prose)	230
Table 4. 27	Fluency (poetry).....	230
Table 4. 28	Conventions and word choice (prose)	231
Table 4. 29	Conventions and word choice (poetry).....	231
Table 4. 30	Analysis of prose and poetry	233

LIST OF FIGURES

	Page
Figure 1. 1 Average Mastering Minimum Level UPSR by Subject.....	15
Figure 1. 2 Theoretical framework of the study	24
Figure 2. 1 An education cloud	67
Figure 2. 2 Initiatives in Malaysia education blueprint 2013-2025	71
Figure 2. 3 Socio-educational Model	84
Figure 2. 4 An adaption of Gardner’s Socio-educational Model	85
Figure 2. 5 Conceptual Framework.....	93
Figure 3. 1 Pilot testing interview guide	106
Figure 3. 2 Fieldnote	112
Figure 3. 3 Teacher eJournal	114
Figure 3. 4 My eDiary	115
Figure 3. 5 Designing AuLStra Writing Rubrics	117
Figure 3. 6 Flowchart of the research procedure.....	131
Figure 3. 7 The process of qualitative data analysis	132
Figure 3. 8 Summary of data management and organisation.....	134
Figure 3. 9 Otter.ai transcription	135
Figure 3. 10 Word cloud from NVivo12.....	138
Figure 3. 11 A screenshot of the coding in NVivo.....	139
Figure 3. 12 Examples of selected codes and sub-codes for RQ2	140
Figure 3. 13 Examples of codes and sub-codes for RQ3	141
Figure 3. 14 Examples of codes and sub-codes for RQ4	142
Figure 3. 15 Examples of codes and sub-codes for RQ5	142
Figure 3. 16 Examples of codes and sub-codes for emerging themes	143
Figure 3. 17 The relationships of the data using FreeMind (themes)	144
Figure 3. 18 Triangulation of data sources.....	144
Figure 3. 19 ASSURE ID Model	153
Figure 3. 20 ASSURE ID Model and its Relationship with AuLStra Design	156
Figure 3. 21 Framework for AuLStra and its components.....	163
Figure 4. 1 Relationship between themes, codes and sub-codes in RQ2.....	173
Figure 4. 2 Relationship between themes, codes and sub-codes in RQ3.....	182

Figure 4. 3	Relationship between themes, codes and sub-codes in RQ4.....	192
Figure 4. 4	Relationship between themes, codes and sub-codes in RQ5.....	207
Figure 4. 5	Relationship between codes and sub-codes in emerging themes	215
Figure 4. 6	A summary of the overall findings	234
Figure 5. 1	Overview of the study.....	240
Figure 5. 2	Findings for RQ2	241
Figure 5. 3	Findings for RQ3	244
Figure 5. 4	Findings for RQ4	247
Figure 5. 5	Findings for RQ5	253
Figure 5. 6	Findings for Emerging Themes	256

LIST OF ABBREVIATIONS

AuLStr	Authentic Learning Strategies in a Mobile Cloud Computing Environment
CEFR	Common European Framework of Reference
EAL	English as an Additional Language
ELLS	English Language Learners
<i>KPM</i>	<i>Kementerian Pendidikan Malaysia</i>
<i>KSSR</i>	<i>Kurikulum Standard Sekolah Rendah</i>
L2	English as another language
MCC	Mobile Cloud Computing
MOE	Ministry of Education
<i>UPSR</i>	<i>Ujian Pencapaian Sekolah Rendah</i>
WA	Writing Apprehension

LIST OF APPENDICES

APPENDIX A	AuLStrawrite Guide to Writing
APPENDIX B	Parental Information and Consent Form
APPENDIX C	Informed Assent for Primary Schoolchildren
APPENDIX D	Subject Information and Consent Form
APPENDIX E	Interview Guide for Teachers
APPENDIX F	Interview Guide for Primary Schoolchildren
APPENDIX G	AuLStrawrite Writing Rubrics (Prose)
APPENDIX H	AuLStrawrite Writing Rubrics (Poetry)
APPENDIX I	Permission from the EPRD
APPENDIX J	Permission from the State Education Department
APPENDIX K	JEPeM Approval
APPENDIX L	Permission from the School
APPENDIX M	Additional Interview Questions (Teachers)
APPENDIX N	The Daly-Miller Writing Apprehension Test
APPENDIX O	The Daly-Miller Test Scores
APPENDIX P	Interview Questions for RQ2
APPENDIX Q	Interview Questions for RQ3, RQ4 and RQ5
APPENDIX R	Expert Validation 1
APPENDIX S	Expert Validation 2
APPENDIX T	Expert Validation 3
APPENDIX U	Expert Validation 4
APPENDIX V	Matrix Visualisation of Content Analysis
APPENDIX W	Examples of Instruments
APPENDIX X	A Sample Lesson Plan
APPENDIX Y	Interview Snippets
APPENDIX Z	Samples of Authentic Writing Tasks

**PENEROKAAN STRATEGI PEMBELAJARAN AUTENTIK DALAM
PERSEKITARAN PENGKOMPUTERAN AWAN MUDAH ALIH
(AULSTRA) PENGALAMAN PENULISAN BAHASA INGGERIS DALAM
KALANGAN MURID SEKOLAH RENDAH**

ABSTRAK

Kajian ini bertujuan untuk meneroka bagaimana murid di sekolah rendah jenis kebangsaan (Cina) di Malaysia menggunakan Strategi Pembelajaran Autentik dalam persekitaran pengkomputeran awan mudah alih (selepas ini diwakilkan sebagai, (AuLStr) untuk menulis dalam bahasa Inggeris. Kajian ini bersandarkan pada kerangka teori pembelajaran situasi (situated learning theory). Lensa teori sosio-budaya (socio-cultural theory) diguna pakai untuk menyelidik cara murid menulis dalam AuLStr; dan bagaimana mereka menggunakan pengetahuan yang dibina bersama dalam tugas penulisan kolaboratif dalam talian. Daripada perspektif peserta kajian, reka bentuk kajian kes menyumbang kepada beberapa pandangan mengenai penulisan kolaboratif dalam talian. Ia menggambarkan bagaimana penulisan dikarang bersama, menjelaskan aspek yang mempengaruhi potensi pengintegrasian AuLStr dalam kelas penulisan bahasa Inggeris, dan meneroka bagaimana murid menggunakan AuLStr untuk mengatasi kebimbangan menulis. Murid yang terlibat mengambil bahagian dalam sesi pembelajaran bahasa Inggeris di Google Meet, di mana mereka dirakam menggunakan fungsi rakaman Google Meet. Selain mengambil bahagian dalam Kelas Penulisan AuLStr (AuLStr Writing Class), murid dan guru bahasa Inggeris turut menulis jurnal reflektif (Teacher eJournal dan My eDiary). Di samping itu, melalui penggunaan kaedah wawancara, lima orang guru daripada sekolah yang sama mengenal pasti peranan AuLStr dalam penulisan Bahasa Inggeris. Analisis

pengalaman peserta melalui lensa teori sosio-budaya menunjukkan bahawa AuLStrA berpotensi untuk menyediakan sokongan pedagogi untuk pengajaran dan pembelajaran penulisan bahasa Inggeris dan untuk memberikan maklum balas yang berkesan dalam persekitaran masa nyata. AuLStrA juga mempunyai potensi untuk digunakan sebagai penulisan kolaboratif dan reflektif dalam talian, dan untuk digunakan bagi mendapatkan maklum balas daripada rakan sebaya. Berkenaan dengan kebimbangan menulis, AuLStrA mempunyai potensi untuk mengurangkan tahap kebimbangan menulis murid sekolah rendah melalui sikap optimistik terhadap penulisan, kerjasama dengan rakan sebaya dan peningkatan motivasi menulis. Walaupun cabaran dalam aspek teknikal, tatabahasa, dan gaya pembelajaran ahli pasukan hadir dalam kajian, cabaran ini boleh diurus dan ianya tidak menimbulkan ancaman serius kepada AuLStrA. Kajian ini juga meneroka tema yang muncul dalam pelaksanaan AuLStrA. Ini adalah pembangunan masa depan dan faktor pertimbangan yang berkaitan dengan penggunaan AuLStrA dalam bilik darjah, antaranya adalah: untuk digunakan dalam tahap pendidikan lain; disepadukan dalam kurikulum sedia ada; dan untuk menyediakan murid sekolah rendah untuk kemahiran abad ke-21, dan seterusnya dunia pekerjaan. Faktor pertimbangan yang dikenal pasti adalah: pengetahuan guru dalam pembelajaran autentik, ketersediaan peranti digital dan kemahiran digital, masa dan sokongan ibu bapa. Kajian ini memberi penerangan tentang pengalaman menulis pelajar bahasa Inggeris sekolah rendah menggunakan AuLStrA termasuk cabaran yang perlu ditangani untuk merealisasikan potensinya. Akhir sekali, kajian ini juga telah mewujudkan peluang baharu untuk penyelidikan masa hadapan. Kajian masa depan akan membolehkan penggunaan peranti mudah alih lain dalam penyepaduan Strategi Pembelajaran Autentik; untuk mempertimbangkan menggunakan Strategi Pembelajaran Autentik untuk mempelajari mata pelajaran

bahasa lain; untuk menyiasat persepsi dan kebimbangan ibu bapa berhubung dengan penggunaan Strategi Pembelajaran Autentik dalam penulisan bahasa Inggeris; untuk menggunakan Strategi Pembelajaran Autentik untuk kemahiran bahasa lain; untuk menggunakan Strategi Pembelajaran Autentik dalam keadaan yang tidak dijangka; dan menggunakan Strategi Pembelajaran Autentik dengan kumpulan peserta lain, seperti murid prasekolah, pelajar menengah dan pengajian tinggi.

**EXPLORING AUTHENTIC LEARNING STRATEGIES IN A MOBILE
CLOUD COMPUTING ENVIRONMENT (AULSTRA) AMONG PRIMARY
SCHOOL ENGLISH LANGUAGE LEARNERS' WRITING EXPERIENCE**

ABSTRACT

This study explores how primary school English language learners in a Chinese national-type primary school in Malaysia used Authentic Learning Strategies in a mobile cloud computing environment (AuLStrA) to write in English. This thesis continues and develops within a situated learning theory framework by investigating the primary schoolchildren's experiences of AuLStrA through the lens of socio-cultural theory, and exploring how co-constructed knowledge is utilised in online collaborative writing tasks. Drawing upon case study design, this study aims to provide some insights on online collaborative writing from the participants' perspectives. It illustrates how writing is co-authored, elucidates aspects that impact the potential of integrating AuLStrA in English writing classroom, and explores how the primary school English language learners used AuLStrA to overcome writing apprehension. The primary school English language learners took part in a series of English language lessons on Google Meet, during which they were video-recorded using Meet recording function, as they collaboratively performed the authentic writing tasks. Besides taking part in AuLStrA Writing Class, the primary school English language learners and their English language teacher kept reflective e-journals (Teacher eJournal and My eDiary). On the other hand, through the use of interviews, five teachers from the same school identified roles of AuLStrA in English writing. The analysis of participant experiences through the lens of socio-cultural theory revealed that AuLStrA has the potentials to provide pedagogical supports for the teaching and learning of English writing and to

provide effective feedback in real-time setting. AuLStrA also has the potentials to be used as online collaborative writing and as online reflective writing, and to be utilised for getting feedback from peers. In regard to writing apprehension, AuLStrA has the potentials to reduce primary schoolchildren's writing apprehension level through optimistic attitude towards writing, collaboration with peers and enhanced writing motivation. Although challenges on technical aspects, conventions and word choice, and team members learning style are present in the study, these challenges are manageable and do not seem to pose a serious threat to AuLStrA. This study also explores emerging themes in the implementation of AuLStrA. These are the future development and factors for consideration pertained to the utilisation of AuLStrA in classroom which include: to be used in other level of education; to be integrated in the existing curriculum; and to prepare primary schoolchildren for the 21st century skills, and hence working world. The factors for consideration identified are: teachers' knowledge in authentic learning, availability of digital devices and digital skills, time and parental support. This study sheds light on primary school English language learners' writing experience using AuLStrA including the challenges that need to be dealt with to actualize its potentials. Finally, this study has also created new opportunities for future research. Future studies would enable the utilisation of other mobile devices in the integration of Authentic Learning Strategies; to consider using Authentic Learning Strategies to learn other language subjects; to investigate parents' perceptions and concerns in regard to using Authentic Learning Strategies in English writing; to use Authentic Learning Strategies for other language skills; to utilize Authentic Learning Strategies in unforeseen conditions; and to use Authentic Learning Strategies with other groups of participants, such as pre-school learners, secondary and tertiary students.

CHAPTER 1

INTRODUCTION

“We cannot teach writing well unless we trust that there is a real, human reason to write.”
Calkins, 1994

1.1 Introduction

Learning English using mobile devices has become popular in classrooms all over the world and it appears to be central to language practice. However, digital divisions are in existence everywhere even with the increasing access to technologies (Jacobs & Subramaniam, 2020; Mossey & Manoharan, 2019; Warf, 2019). There is unequal access to the technology itself. Despite the International Telecommunication Union’s (henceforth, ITU) efforts to provide the world population with the Internet connection, numerous barriers have kept ITU from reaching out to these people. Thus, about 41% of the world population remained unconnected (ITU, 2021). According to a survey by ITU, 90% of individuals in low- and middle-income nations are unable to afford a decent internet connection (Okoth, 2022).

During the recent outbreak of Covid-19 pandemic, more than 1.2 billion or 72.4% of total enrolled learners from around the globe were affected and classes were basically offered through online platforms (UNESCO, 2020). China, the country, which was first hit by the pandemic (World Health Organization, 2020), implemented an online school educational practice - “School’s Out, But Class’s On” (Zhou et al., 2020). It is one of the prominent examples of online education, which has made learning from home possible for 270 million students across China during the postponement of schools due to the Covid-19 pandemic (Cheng, 2020; Yao et al., 2020). In the online teaching, China teachers used Internet technology and digital teaching resources to teach while students, who are connected, could learn using

technology according to the schedule. Nonetheless, for rural students where the level of technology was limited and their network could not support the online learning platform, the online education was realised via the recorded online resources and mobile phones (Cheng, 2020).

Malaysians are generally very fortunate in term of connectivity; the percentage of Internet users in 2018 was 87% and has since increased to 90.1% in 2019 (Department of Statistics Malaysia, 2020). To a greater extent, a total of 9, 822 schools in Malaysia have been connected since 2013 (*Kementerian Pendidikan Malaysia*, 2019). In addition, the Ministry of Education (MOE) has deployed more than 10,000 cloudbooks to those schools as parts of its plan to leverage the use of Information and Communications Technology (the terms ‘ICT’ and ‘technology’ will be used interchangeably in this study) effectively in order to enhance students’ learning. In view of the fact that 24.5 million people in Malaysia are connected, learning English through mobile devices can be made possible in Malaysian classrooms (Mohamad, 2012; Mohamad & Muniandy, 2014; Mohamad & Woollard, 2009; Mohamad, Maringe & Woollard, 2012; Zain & Bowles, 2021).

When Covid-19 pandemic broke out in Malaysia in January 2020 (World Health Organization, 2020), teachers in Malaysia were directed to conduct online teaching using the suggested platform called DELIMa, or ‘Digital Educational Learning Initiative Malaysia’ (Digital Educational Learning Initiative Malaysia, 2021), as more than 7.9 million learners were affected (UNESCO, 2020). The Malaysian Ministry of Education announced the teaching guidelines during the school closures on March 27, 2020 (*Kementerian Pendidikan Malaysia*, 2020), and teachers were encouraged to use the learning platform that is linked to various cloud computing tools like Google Classroom, Microsoft Teams, digital textbooks, and interactive

videos and quizzes. In October 2020, the Education Ministry has released a guide on scheduling teaching and learning from home (also known as *PdPR*). In February 2021, an updated version of the manual (also known as *PdPR2.0*) was released to address the shortcomings faced by both teachers and students during *PdPR1.0* (*Kementerian Pendidikan Malaysia, 2021*). Google Classroom has since emerged as one of the most used education applications worldwide. The Covid-19 pandemic has boosted Google Classroom to massive downloads and it has emerged as the most downloaded education application as of March 2020 (Schaffhauser, 2020). However, it is not sufficed by simply providing teaching resources during online teaching; more communication and instant feedback is needed to improve students' performance (Yao et al., 2020) specifically in the teaching of English writing. This scenario has given a new perspective and supports the use of Google Classroom, which is explored in this study.

Despite the fact that Malaysia has long recognised the potential of technology in education, in the 2013 Malaysia Education Policy Review, UNESCO reveals that, in most cases where technology is used in teaching, it has not gone much beyond the use of PowerPoint as an instructional tool (UNESCO, 2013). This finding is still relevant and is in line with other latest studies (Chuah & Mohamad, 2020; Raman, Thannimalai & Ismail, 2019; Shanmugam, Zainal & Gnanasekaran, 2019), which suggest that technology can only be leveraged if teachers and students alike know how to use it in meaningful ways within learning processes.

Harmston, Strong and Evans (2001) and Witte (2007) have proven that connecting writing to technology is deemed meaningful as it connects to students' lives and it increases motivation and improves literacy skills needed to use technology. This finding concurs with much later studies (Cahyono & Mutiaraningrum, 2015; Choo &

Li, 2017; Hiradhar, 2013; Jones, 2015; Law & Baer, 2020; Mohamad, Ghazali & Hashim, 2018; Yamac et al., 2020) which found that primary *schoolchildren* (Cambridge University Press, n.d.) dislike writing for merely grading or assessment purposes. On the other hand, writing tasks that involved real-world relevance and are based on principles of collaborative, scaffolding, mentorship and reflective are purported to impact learners' writing (Herrington, 2009; Herrington & Oliver, 2000; Herrington & Kervin, 2007; Kleinbort et al., 2020; Lombardi, 2007; Herrington, Oliver & Reeves, 2003). Further, the 21st century learners prefer literacy in digital compared with paper-based (Choo & Li, 2017). Thus, with the incorporation of technology in the teaching of writing, it is hoped that primary schoolchildren would be more interested to write.

Since technology should not be viewed simply as a tool but rather as a medium that shapes culture (Herrington & Kervin, 2007), the integration of technology in the writing classrooms should focus on the knowledge, content and process of writing instead of learning to use the mobile devices. Nonetheless, Pim (2013) disputes the 'one size fits all' approach to using technology, as each situation entails a specific approach to English language learning, specifically the teaching of writing to primary school English language learners. The researcher of this study concurs with Calkins (1994) who professed "*We cannot teach writing well unless we trust that there is a real, human reason to write.*" Accordingly, a paradigm shift is needed to rethink how to incorporate technology in the teaching of writing and make it authentic within the primary education. It is within this context that this study is envisaged, guided by Herrington's and Kervin's (2007) authentic learning principles.

1.2 Background of the Study

English is undoubtedly the most widely used language in the world. According to Simons and Charles (2018) in Ethnologue, a comprehensive website on world languages, English ranks third after Chinese and Spanish as a mother tongue. The introduction of English to the indigenous peoples of British colonies led to the existence of numerous independent states where English continues in daily use today. English has since become the language behind most technological and scientific developments, and the common means of communication, the medium for commerce and education (Broughton et al., 2003; Nawaila, Kanbul & Alhamroni, 2020). The developing technology in English speaking countries is another strong reason why English enjoys world-wide currency apart from political and historical considerations. In fact, English has become the modern lingua franca in a world that is economically, scientifically and culturally largely dominated by Anglo-American countries (Meneghini & Parker, 2007). Since most of African and Asian languages could hardly handle the concepts and terms of modern sciences and technology, English is left as one of the viable options for the development of 21st century learning (Broughton et al., 2003; Higgs, 2020).

Malay, which is the national and official language in Malaysia, is the medium of instruction in public schools, and English is taught as a second language. English is regarded as a compulsory second language in Malaysia. However, unlike the usual understanding of the concept of “English as a Second Language” in countries like Australia or the United States (US), English as a Second Language (ESL) in Malaysia means English is second in importance to Bahasa Melayu (Asmah, 1995; Thiyaga Rajah, 1990). It is taught in school beginning Primary 1 at the age of seven. (Darus, 2010; KPM, 2001). Thus, the term English as an Additional Language (EAL) is more

appropriate for the context of this study owing to the fact that primary schoolchildren in the selected school already know one or more language, i.e., Mandarin (also known as Chinese language) and Bahasa Melayu, and they are adding English language to their language list (Andrews, 2009; Arnot et al., 2014).

In the context of this study, the term primary school English Language Learners (ELLs) and pupils are used throughout the study to refer to all primary schoolchildren whose first language is not English (Arnot et al., 2014), and are attending school at the chosen research site. The well-known term ESL is not appropriate for the context of this study as the primary school pupils here learn English as another language, and they do not get to practise it in the community of the target language, unlike the situation in the UK, USA or Australia (Webster & Lu, 2012). The term EAL is chosen over ESL since English is the third or fourth language for these pupils (Nazri, 2013). As posited by Scheneider and Davies-Tutt (2014), these terms refer to the teaching and learning of English to students whose first language is other than English. Further, they assert that these terms are not interchangeable with English as a foreign language (EFL), which refers to the context of learning and using English as a foreign language in countries with a different dominant language. Hence, the terms L2 and EAL are used interchangeably in this study.

As far as the teaching of English is concerned, countries around the world faces a number of challenges, and one of them lies heavily in the teaching and learning of writing as writing is one of the four English language skills taught and tested in their education system. Undoubtedly, writing is always viewed as a difficult skill for a student to acquire (Saravanan & Aziz, 2021). Studies on writing difficulties among EFL students, for instances, have been conducted in the Philippines (Gorospe & Rayton, 2022), Thailand (Loan Nguyen & Suwannabubpha, 2021), Indonesia (Sabiq,

2021), Saudi Arabia (Banu et al., 2021), Pakistan (Mahmood & Alam, 2020) and Pakistan (Fareed, Ashraf & Bilal, 2016). Those studies found that among the challenges are differing levels of students' academic achievements, lack of interest among students in engaging classroom activities, students' lack of vocabulary, and difficulties in motivating those students to write. However, according to those studies, the main issue identified is, despite the fact that writing is a crucial academic skill, it is not promoted or used effectively among students. Although English is required in most schools, Rashid et al. (2022) echoed Leverenz's (2014) and Faraj's (2015) views on the implementation, which is insufficient, focusing solely on the linguistic structure of the students. According to Deane (2018), this is most probably due to how the teaching of writing is executed in most classroom settings, where everyday writing practices centred around demonstrations of knowledge such as completing worksheets, responding to readings, writing summaries and taking notes, while the teacher is often the only audience or the sole reader.

On the home ground, Malaysia is facing similar challenges (Chua, Yunus & Suliman, 2019; Ghulamuddin et al., 2021; Tan, 2006). At the upper primary school level, pupils write a variety of text types, most of which are very guided in nature and strictly conform to examination genres. Thus, the pupils' profound writing talents have not been developed to their full potential. To put it another way, the teaching methods might not effectively prepare pupils for writing. This suggests that Malaysian pupils are unable to properly and creatively express themselves in class. If pupils do not exercise their writing abilities, they may face challenges. Fear of writing is one of the main causes of difficulties that Malaysian English language learners have in their writing tasks (Ananthan & Said, 2019; Ien, Yunus & Embi, 2017; Jalok & Idris, 2020; Karim, 2018; Tan, 2006; Wong et al., 2011; Yunus & Mat, 2014).

In response to nationwide concerns over English Language performance, four major education reforms were introduced by the Ministry of Education (MOE) and the government of Malaysia. In 1982, the Integrated English Language Syllabus for Primary Schools or *Kurikulum Bersepadu Sekolah Rendah (KBSR)* which employed the Communicative Language Teaching (CLT) approach was introduced. This approach emphasized on learning language for communicative purposes but not for grammatical knowledge. According to Nunan (2003), the fundamental principles in CLT are learner centredness and contextualized language use.

KBSR lack references to the integration of computer technologies into the instruction of English language learning (Darus, 2010) even so the discipline of education has been heavily influenced by enormous advancements in computer technologies. In 2011, *Kurikulum Standard Sekolah Rendah (KSSR)* or Standard-Based English Language Curriculum (SBELC) was implemented in Year 1. The new curriculum aims to overcome illiteracy problems among primary schoolchildren and to improve quality of teaching and learning process. There are six pedagogical principles outlined in this curriculum: back to basics, learning is fun, meaningful and purposeful learning, teaching is learner-centred, integration of salient new technologies, assessment for learning and character-building infused (Curriculum Development Division, 2011), and it is hoped that with the implementation of the principles can enhance language acquisition of pupils in English, improve quality of teaching and learning as well as to overcome the problem of illiteracy among primary schoolchildren in Malaysia.

The latest development in the English Language Curriculum for Primary School is Common European Framework of Reference (CEFR). CEFR is being implemented in Year 1 in primary schools and Form 1 in secondary schools throughout

Malaysia in the year 2017 (MOE, 2020). CEFR encouraged student-centeredness via the use of an action-oriented approach in teaching and learning. However, it is important to note that the autonomy emphasised in the West might be challenging for Malaysian students (Afip et al., 2019) since they are traditionally taught to rely on teachers for information and knowledge. Students might be exposed to possibilities to enhance their writing skills as a result of the adoption of a learner-centred approach, but they must have gained appropriate awareness to make the efforts viable.

As such, new directions in Malaysian English education are called for, distinctively in the learning and teaching of writing. Teachers should integrate strategies in the teaching of writing (Sovakandan, Jaganathan & Husain, 2018) as learners might experience difficulties and become apprehensive while writing (Hyland, 2016; Kaur & Sidhu, 2012; Qashoa, 2014; Yu, 2020). Chien (2012) and Raimes (1985) asserted that the application of writing techniques has been shown to have an effect on writing success. Due to many factors such as the emphasis on grammar, the actual instruction of writing in English writing classes is still very much restricted by the principles of product-based approach besides excelling in national examinations (Li & Razali, 2019). However, teachers must recognise their reliance on the more conventional product-based strategy that is widely employed might deprive Malaysian students the opportunity to learn.

Instead of focusing simply on achieving well in national examinations through a product-based approach, teachers and students must recognise that English education is supposed to prepare them for life (Li & Razali, 2019). It is also essential to carry out the Ministry of Education's actual aspirations and goals, which carry the hopes of Malaysians in general, to develop younger generation not only into exam scorers, but also into people who can use their English writing skills in real life context (MOE,

2019). Thus, a paradigm shift from the current method to a more effective method of studying English writing is called for.

Nonetheless, although research on the effect of writing strategies on literacy instruction has escalated in recent decades, research on how English language teachers integrate authentic learning strategies in the teaching of writing are still uncommon. As a result, authentic learning techniques developed by Herrington and Kervin (2007) were used in the teaching of writing in this study. In addition, technology was incorporated into the writing strategies. Lumpkin, Achen and Dodd (2015) asserted that incorporating technology-based strategies has potentials to impact students' learning.

A plethora of research on technology-based materials has been conducted to investigate its effects on teaching and learning a language in the context of English as a Second Language (ESL) and English as a Foreign Language (EFL) (Carlsen, & Willis, 2007, Genc, 2012; Genc & Gulozar, 2011; Muller et al., 2011; Shanmugam, Zainal & Gnanasekaran, 2019). Educators believed that the integration of technology into instruction eased English language learning because both teachers and students can reach a great number of resources, including authentic reading and listening materials, online dictionaries, and grammar and vocabulary exercises (Johnson, Maddux & Liu, 2000; Nawaila, Kanbul & Alhamroni, 2020; Tomei, 2007; Watson & Tinsley, 1995). Further, teachers can take advantage of the benefits of digital platforms when analysing online writing activities in English writing classes. It is worth noting that the viability of such evaluation procedures is inextricably linked to the fact that technical tools enable easy access to stored records of students' online engagement and collaboration (Chen et al., 2022).

Despite growing interest in investigating the effects of technology on teaching and learning a language in the ESL/EFL context over the last two decades, there are still rooms for improvement in the potentials of technology integration in primary school writing classrooms, particularly in the context of English as a second language in Malaysian primary schools. Further, efforts by educational institutions to adopt technology-based instructional strategies were not without glitches and problems (Azman, 2016; Ghavifekr & Quan, 2020; Selvaraj, 2010).

Aligning with the inception of globalization and the need to incorporate technology in education, one of the flagships in Multimedia Super Corridor project, the SMART School initiative was adapted by MOE (Hussin, 2020). This second reform in education came about in 1999 with the aim of equipping students with computer literacy and ICT skills. Undesirably, this project was suffused with hardware and software problems right from the start (Ghavifekr & Sani, 2015). Lack of instructional design, limited computer literacy and time factor are among the obstacles faced by teachers and students. These constraints subsequently led to irrelevant content, technical malfunctions, inefficient ICT infrastructure and insufficient hardware and they hinder teachers from integrating ICT in their teaching (Ghavifekr & Quan, 2020; Yahya & Raman, 2020).

Despite the constraints and hindrances, majority of teachers agreed to the contributions of technology-nested instructional strategies in English teaching (Lumpkin et al., 2015; Nawaila et al., 2020), but they come with a cost. Their access and affordability have become a major concern for the schools. Nonetheless, Kumar and Bhardwaj (2020) affirmed that the cost factor in technology adoption can be addressed by cloud computing technology. The advent of cloud computing, an emerging computing paradigm, promises many new exciting possibilities. Besides

huge cost savings, cloud could also mitigate schools from infrastructure complexities and maintenance services (Nayar & Kumar, 2018).

While cloud computing is extremely beneficial in most fields of work and life, it is incredibly useful in the education space. In the field of education, cloud computing has been around for decades. It has been used extensively in higher education for a wide variety of functions including word processing, spreadsheet, presentation, video conference programs, and e-mail (Ahmed, Jaafar & Ghareb, 2017; Lin, Yu, & Wang, 2014; Slahor, 2011). Studies suggested the importance of technology-based instructional strategies in cloud computing (Ahmed, Jaafar & Ghareb, 2017; Arpaci, 2016; Korucu & Karakoca, 2020), but little was known about research, which had addressed writing activities in a cloud computing environment that may impact ELLs performance, specifically in Malaysian primary schools.

Notwithstanding the widespread access to mobile devices and digital tools, according to study, many English language teachers still use technology in restricted ways (Higgs, 2020; Higgs, Miller & Pearson, 2013). According to Garcia, Stamatis and Kelly (2018), in classrooms, technology is mostly utilised based on the technological aspects of the devices rather than the social and pedagogical ways in which they are used. The same thing applied for the teaching of writing. Hochman, who invented 'Writing Revolution', acknowledged that teachers experienced difficulties in teaching writing to children, but not in assigning them writing tasks (Loewus, 2017). Therefore, as we move into the 21st century teaching, more relevant, authentic and applied teaching writing strategies using technology, specifically cloud computing, need to be incorporated into learning environments to innovate primary schoolchildren writing process. This is why Authentic Learning Strategies in cloud computing environment fits in with this study. Further, writing skill is most

successfully refined through meaningful iterative experiences with writing across the learners' school year (Hochman & Wexler, 2017; Kleinbort et al., 2020; Walvoord, 2014). Although there was evident in literature confirming that authentic and applied teaching and learning strategies using technology have been incorporated into learning environments (Herrington & Kervin, 2007; Herrington & Oliver, 1995; Herrington & Oliver, 1996, Herrington, Reeves and Oliver, 2006; Lombardi, 2007; Tan, Teo & Chye, 2009), studies on how it was implemented in the teaching of writing and who was involved, are still lacking. The gaps of the studies are shown in Chapter 2.

1.3 Statement of the Problem

Writing skill is one of the most critical aspects in the learning and teaching of English in Malaysia. Kashef, Mariadass and Ghabool (2012) revealed that Malaysian students have problems in writing tasks, especially in language use and punctuation. The notion is supported by Veramuthu and Shah (2020) who regarded writing skill as the toughest task in L2 acquisition. Lack of English language proficiency is the main cause of difficulties that primary schoolchildren face in their writing tasks (Musa, Lie, & Azman, 2012; Chua, Yunus & Suliman, 2019). Furthermore, students did not see the real cause for why they were asked to write, which in turn led to writing apprehension, "a situation and subject specific individual difference associated with a person's tendencies to approach or avoid situations perceived to potentially require writing accompanied by some amount of perceived evaluation" (Daly & Miller, 1975, p. 327). Learners usually wrote within the immediate classroom context where writing was taught and learned (Fairclough, 1992 in Tan, 2006). The learners were rarely asked to write outside classroom context or for other genuine reasons (Jalok & Idris, 2020).

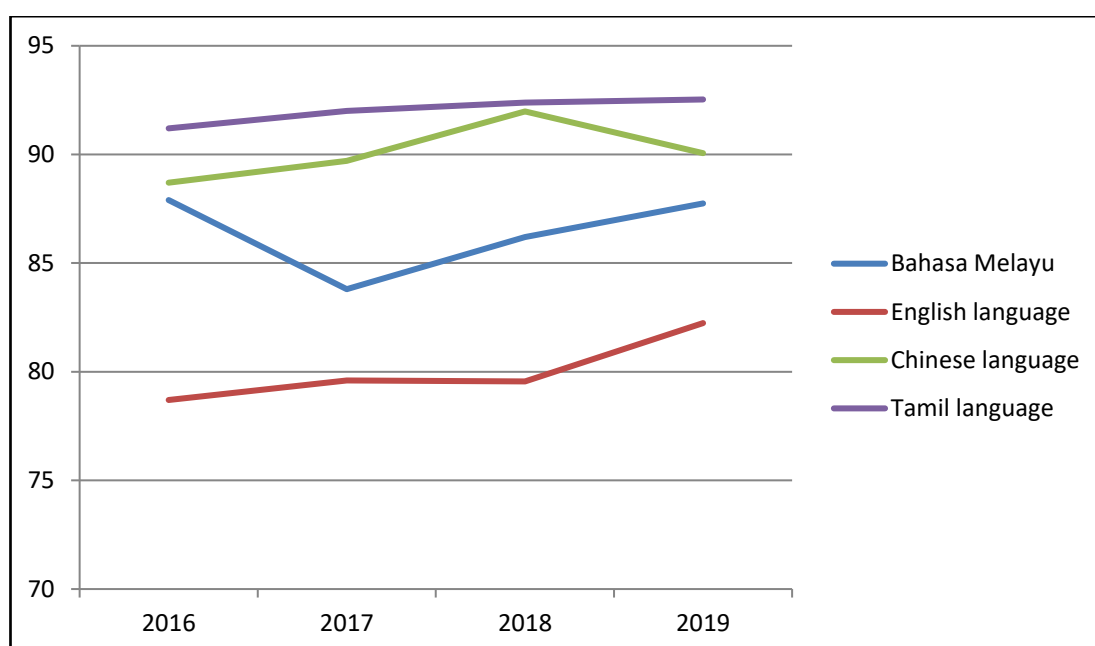
In the Malaysian context, one of the dominant discourses worth looking at is the discourse of examinations. The discourse of examinations, according to Tan

(2006), narrows school writing to what examiners anticipate, resulting in enforcement and tactical or strategic responses from students. Meanwhile, Maros et al. (2007), Musa et al. (2012), and the most recent study, Siddek and Ismail (2021) found that the first language interference was very tangible in their writings. Moreover, students aimed to write just enough for them to get by in class and in the examination. Such engagement in writing discourages critical thinking, develops apprehension and clearly lack authenticity.

Studies report low quality of writing is caused by writing apprehension (Jalok & Idris (2020), high apprehensiveness led to negative predispositions towards writing ability (Badrasawi, Zubairi & Idrus, 2016), level of writing apprehensiveness is indirectly correlated with writing apprehension and self-efficacy beliefs (Singh & Rajalingam, 2012), and motivation and apprehension is related to achievement (Kassim, Daud & Daud, 2013). Irrefutably, in Malaysia, one of the obstacles that impedes ELLs' writing performance is writing apprehension. What is less known is, how this apprehension, particularly the avoidance behaviour, affects writing performance in Malaysian primary school classrooms. Besides, little is known about the interference of apprehension in the writing process of primary school English language learners in Malaysia since most of the aforementioned studies focused on tertiary students. The 11-year-old pupils who speak English as either third or fourth language at a Chinese national-type primary school were the focused of this study as past studies show that writing can be intimidating for students of all ages, and it can occur at a very young age (Feil, 2016; Yu, 2020).

This is evident in the results of public exam for primary schools, *Ujian Pencapaian Sekolah Rendah* (henceforth, *UPSR*). Candidates fall behind other subjects tested in the *UPSR* in English language Writing paper, and it has been a

common scenario since the inception of *KSSR* in 2016. This is reported by the Ministry of Education in the *Pelaporan Pentaksiran Sekolah Rendah 2018* (KPM, 2018). As shown in Figure 1.1, only 78.7% of primary school students who took the test in 2016 secured the average mastering minimum level (also known as, MTM), compared with other language writing papers. Although it is observed that there is a slight increase in the MTM from 2018 to 2019, English Paper 2 remained the lowest in terms of MTM in the *UPSR*.



Note: Kementerian Pendidikan Malaysia, 2019

Figure 1. 1 Average Mastering Minimum Level UPSR by Subject

Therefore, this study highlights the importance of writing strategies as writing skill is much needed in primary education. Faced with national public examination like *UPSR* where writing is tested as one of the papers (MOE, 2016), primary schoolchildren are confused, and teachers are challenged by a massive task to ensure that primary schoolchildren are learning content as well as developing skills acquired to tackle the exam questions (Moses & Mohamad, 2019).

In Malaysia, there are two types of primary schools: (a) national school and (b) vernacular schools (Chinese and Tamil). Mother tongue is used as a medium of instruction in national-type schools, while Bahasa Melayu and English are taught as compulsory subjects (Nazri, 2013). Pupils in Chinese vernacular schools are obviously falling behind their peers when it comes to English language writing in national schools (*SK*) according to the *UPSR* result released by the Malaysian Ministry of Education that compares four main language achievements (*KPM*, 2018). This drawback was partly due to their learning environment and the L1 interference or negative transfer (Chen, 2020; Zhang & Zhan, 2020).

In the 2019 *UPSR* result measuring language, mathematics and science literacy, English writing paper ranked last in the exam. Comparing with other subjects that offer writing paper in the *UPSR*, English shows the lowest percentage in terms of candidates who scored As while the highest in numbers of grade Es. Although a little improvement is shown in 2019 *UPSR* result, English Writing paper scores is still the lowest compared with other language papers with 17.76% of vernacular candidates did not meet the test's baseline proficiency for English language writing, as shown in Table 1.1.

Table 1.1 Vernacular Schools *UPSR* Writing Performance in 2019

Subject	Grade				
	A	B	C	D	E
English language	15.51	17.53	23.80	25.40	17.76
Bahasa Melayu	25.39	16.04	28.84	17.47	12.26
Tamil language	31.22	34.11	18.69	8.51	7.47
Chinese language	28.88	23.60	26.34	11.24	9.94

Source: *KPM*, 2019

Of the two vernacular schools in Malaysia, Chinese national-type schools have attracted a substantial amount of multi-racial pupils. Since the 1990s, there has been

an increasing inflow of non-Chinese students into Chinese vernacular primary schools across Malaysia (Shen, 2006 in Tan, Ngah, & Darit, 2013), and this has become a growing concept in Malaysia's educational growth (Tan, Ngah & Darit, 2013). Due to the learning environment that requires primary schoolchildren to place more emphasis on Mandarin (which is used interchangeably with Chinese language), English is regarded as second or third in importance compared to Mandarin and Bahasa Melayu as this is evident in the total instructional time per week for an English language class at the Chinese national-type schools is 180 minutes (Curriculum Development Division, 2015).

Motivation is a vital component of effective language learning, and is a complex process that is constantly changing (Dornyei, 2001a). According to Gardner (1985), motivation to learn L2 involves three “integrative aspects”, which entails “psychological and emotional identification” (Dornyei, 2003). Besides the identification, motivation to write in L2 is also subjected to learners’ sense of agency and interests in the learning process (Lo & Hyland, 2007). However, in the “outer circle” of English-speaking country like Malaysia, the aspects of “integrative orientation” are mostly absent from learners’ learning environment (Dornyei, 1990) and English language is taught in school as one of the subjects. This study looks at the “integrative orientation” aspects of motivation in relation to writing apprehension. Hashemian and Heidari (2013) state that integrative motivation correlates with the success in L2 academic writing; learners with integrative motivation do better in L2 writing.

Even though English language writing can be acquired as one of the school subjects, and some of the elements in writing can be taught overtly, students must be given adequate opportunities for social interactions and self-expression since language

learning is profoundly a social event (Dornyei, 2003). In addition, studies (Noels, 2001a; Oldfather & West, 1999; Richards, 1993) suggested that the following psychological needs ought to be fulfilled in order to increase motivation in L2 acquisition: (a) a sense of competency, (b) a sense of self-worth, (c) autonomy, (d) enjoyment, and (e) interest. Upon examining motivation in the Malaysian writing classrooms, most of the psychological needs are neglected. The traditional method of English teaching is ubiquitous while writing classrooms are characterised by products, perfect piece of writing and extensive drilling for the examinations (Chua, Yunus & Suliman, 2019; Choo & Li, 2017; Sovakandan, Jaganathan & Husain, 2018). Hence, in bridging the gap, this study seeks to explore how those psychological needs could be met in order to enhance motivation in L2 writing, and eventually ease writing apprehension. The primary school English language learners' writing experience were studied in the context of Authentic Learning Strategies in a mobile cloud computing environment, in which their sense of competency, sense of self-worth, autonomy, enjoyment and interest would be explored during writing activities.

Besides motivation, L2 learners' attitude towards writing is another factor that might impact their writing in English. Over the past decades, research suggests that learners who demonstrated a positive writing attitude performed better than their peers with negative attitude (Bulut, 2017; Graham, Berninger & Fan, 2007; Hashemian & Heidari, 2013; Kear et al., 2000), and primary schoolchildren's writing attitude is found to be higher than that of their secondary school counterparts (Yildiz & Kaman, 2016 in Bulut, 2017). Previous research has indicated that factors such as time, English-learning beliefs and experiences, low-stakes writing, perceived value of peer assistance, group dynamics and technology-nested writing strategies may influence learners' attitudes towards English writing (Bustamante & Eom, 2017; Chen & Yu,

2019; Dai, 2010; Tok & Kandemir, 2015). Although these studies provide overview of the aspects that affect learners' attitudes, they mostly focus on a single experiment or on learners' attitudes in general. There is a need for further research into why students have different attitudes towards writing and how those attitudes affect their English learning. This is because learners who hold negative attitude are unlikely to accomplish their language learning goals (Gardner, 2001).

Since attitudes towards language learning can nurture or hinder the learning process (Lenhart, Arafeh & Smith, 2008), L2 teachers can use these critical questions to help them establish writing techniques that foster a sense of communication and genuine writing. To this end, technology-nested writing strategies might be able to influence English language learners' attitude towards English writing. The innovation and novelty that technology-based instructional strategies bring with it may encourage English language learners to shift the way they think about writing in English (Hiradhar, 2013; Higgs, 2020; Lumpkin, Achen & Dodd, 2015). Although digitally mediated teaching and learning of language is well-received by teachers, effective design of technology-nested writing strategies for primary school English language learners remains understudied, and technology use in school often focuses on technical aspects of digital tools rather than on the social and pedagogical contexts of their use (Garcia et al., 2018).

In bridging the gap to link motivation, attitude and writing apprehension, Authentic Learning Strategies was integrated in a mobile cloud computing environment. The significance of integrating instructional strategies in a mobile cloud computing environment in schools has been established in the literature review. The reviews recognized varied emerging contexts for practicing real-world writing (Herrington & Kervin, 2007; Herrington & Oliver, 1995; Herrington & Oliver, 1996,

Herrington, Reeves and Oliver, 2006; Hochman & Wexler, 2017; Kleinbort et al., 2020; Lombardi, 2007; Tan, Teo & Chye, 2009; Walvoord, 2014). One of the most researched areas is related to the implementation of authentic writing tasks which provide opportunities for students to write for real audiences and purposes (Herrington, & Oliver, 1995; Herrington, & Oliver, 1996; Herrington, Reeves & Oliver, 2006; Herrington, & Kervin, 2007; Herrington, Kleinbort et al., 2020; Reeves & Oliver, 2010). In the same vein, there are also studies on the usage of technology with collaborative writing (Calvo et al., 2011; Erkens et al., 2005; Hadjerrouit, 2014).

The majority of these research, however, have focused on students in mainstream English classrooms in the ‘inner circles’ (Kachru, 1985). Despite the growing numbers of such studies, the exploration of primary school English language learners’ writing experience using authentic learning strategies in the ‘outer circle’ like Malaysia (Canagarajah & Said, 2009; Kachru, 2005), where English was mostly used as a second language or third language, is deficient. In Malaysian context, authentic learning strategies have been implemented in educational technology and multimedia courses at higher education institutions (Husnin et al., 2013; Yeen-Ju et al., 2014; Yeen-Ju et al., 2015; Yeen-Ju & Mai, 2016), used by secondary school students in Geography studies (Abdeljaber et al., 2021), while in primary school, it was introduced in Science subject (Baskaran & Abdullah, 2022). Therefore, this study looked at Year Five Malaysian primary school English language learners’ writing experience and how do they utilise Authentic Learning Strategies in a mobile cloud computing environment in their writing activities.

1.4 Research Objectives

In this study, five research objectives have been developed. The first objective is the design and development of Authentic Learning Strategies in a mobile cloud computing

environment to support the primary school English language learners using an instructional design model.

1. To design and develop Authentic Learning Strategies in a mobile cloud computing environment to support the primary school English language learners using an instructional design model.

The second objective is related to the roles of the Authentic Learning Strategies, which is established to be implemented in a mobile cloud computing environment.

2. To explore the roles of Authentic Learning Strategies according to English teachers' perspectives.

The third research objective is about primary school English language learners and their writing practices. This objective aimed to explore the ways primary school English language learners use Authentic Learning Strategies when they carry out English writing tasks.

3. To explore how the primary school English language learners use Authentic Learning Strategies in English writing tasks.

Triggered by the aspiration to address issues identified through the literature review, the fourth research objective is developed. This objective aimed at investigating the how the primary school English language learners use Authentic Learning Strategies to overcome their writing apprehension so they can write in English.

4. To explore how the primary school English language learners use Authentic Learning Strategies to overcome their writing apprehension so they can write in English.

The fifth objective is about the challenges faced by primary school English language learners when they use Authentic Learning Strategies in the English writing.

5. To explore the challenges faced by primary school English language learners in the use of Authentic Learning Strategies in the English writing.

1.5 Research Questions

Based on the research objectives, five research questions have been formulated for this study. They are as follows:

1. How Authentic Learning Strategies in a mobile cloud computing environment is designed and develop to support the primary school English language learners using an instructional design model?
2. What are the roles of Authentic Learning Strategies in the English writing classroom according to English teachers' perspectives?
3. How do primary school English language learners use Authentic Learning Strategies in English writing tasks?
4. How do primary school English language learners overcome writing apprehension using Authentic Learning Strategies?
5. What are the challenges faced by primary school English language learners in the use of Authentic Learning Strategies in English writing?

1.6 Theoretical Framework

The theoretical framework for this study is based on three selected theories and one model. The theories are Brown's Situated Learning Theory (1989), Prior's Sociocultural Theory of Writing (2008), Gardner's Motivation Theory (1975) and the selected model is Gardner's Socio-educational Model (2005).

The situated learning theory serves as the main theory of the theoretical framework for this study, and it provides a framework for Herrington's and Kervin's (2007) authentic learning strategies. The study of socio-cultural writing is based on the work of Prior (2008). Prior's Socio-cultural Theory of Writing situates that writing extends beyond the classroom and in this study, it presents context to include understanding of language, motivation, prior knowledge, and influences of technology (Hodges, 2017).

Gardner's Motivation Theory supports the theoretical foundation for this study in that primary school English language learners' motivation to learn another language is closely related to attitudes to learning situation, integrativeness and instrumentality. Meanwhile, primary school English language learners' attitudes and motivation towards writing in this study were examined within Gardner's (2005) socio-educational framework. The detailed descriptions of the theoretical framework are described in Chapter 2. The theoretical framework for this study is illustrated in Figure 1.2.

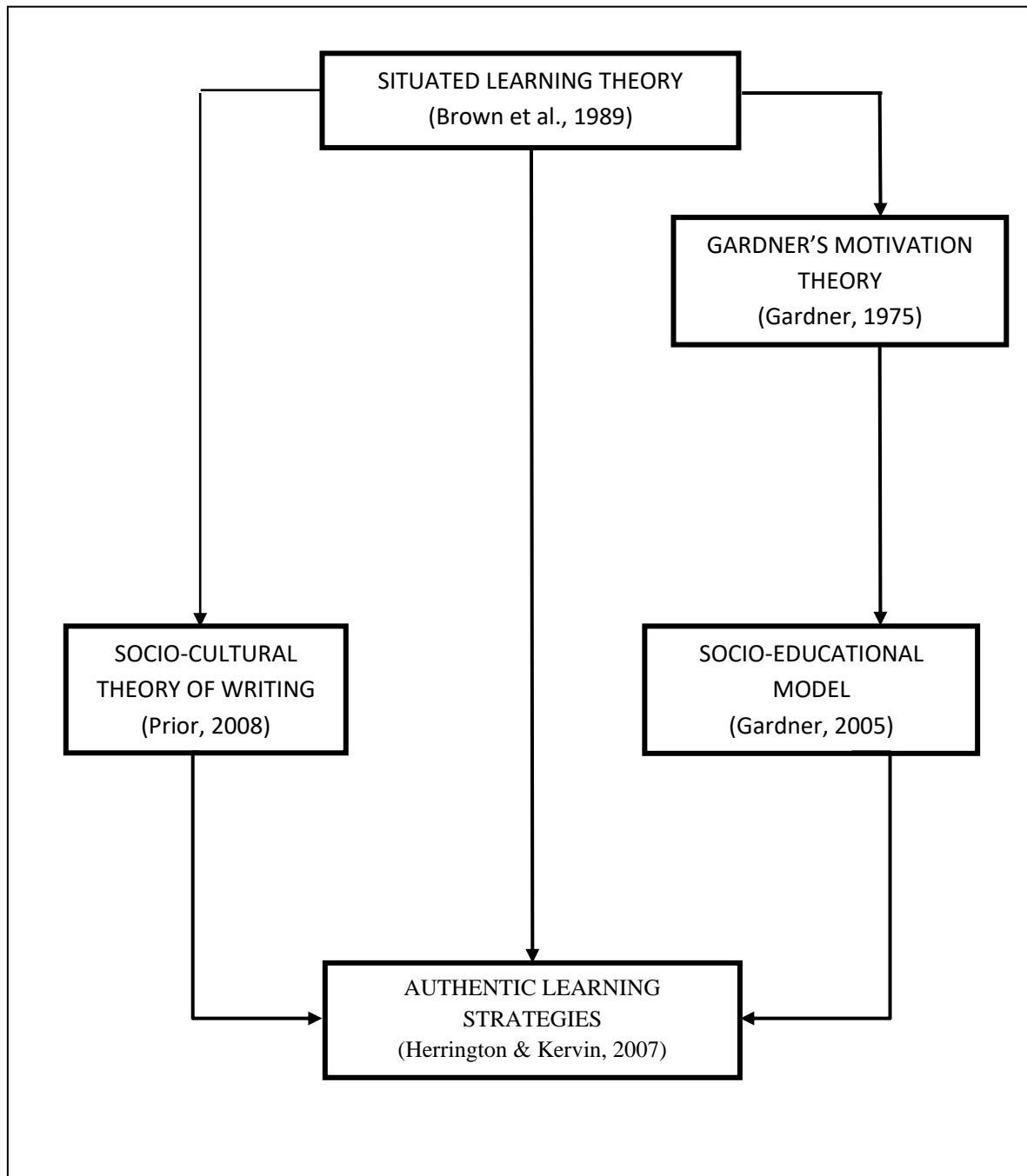


Figure 1. 2 Theoretical framework of the study