

THE IMPACT OF SOCIAL MEDIA USE IN COLLABORATIVE LEARNING TOWARDS
LEARNING PERFORMANCE AMONG RESEARCH STUDENTS

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A thesis submitted in fulfilment of the
requirements for the award of the degree of
Doctor of Philosophy (Information System)

Faculty of Computing
Universiti Teknologi Malaysia

NOVEMBER 2015

This thesis dedicated to...

*My father, my mother, my wife and my children who taught me that the best kind
of knowledge to have is that, which is learned for its own sake*

My beloved brothers and sisters,

And all my loving family and friends

*My love to you will always remain and thank you so much for being
So patient and being there for me.*

ACKNOWLEDGEMENT

First of all, I would like to express my deep thanks to ALLAH SWT, the One and only one who granted me the perseverance and ability to successfully complete my PhD.

I cannot explain in words what I feel today, when finally, I have the opportunity to express my gratitude for all people who supported me. I would like to express my gratefulness to all of these people. I owe considerable thanks to my supervisor Dr. Mohd Shahizan Othman. From the first day, when I came to see him for an introductory meeting to this date, he has proven to be a very kind and helping person. He was always available when I needed him and was unstinting in his willingness to provide feedback, suggestions, help, encouragement and financial support to publication my papers also throughout the entire process of writing this thesis. Also goes to Mrs. Lizawati Mi Yusuf for her assistance and suggestions on my publication. Special thanks to my parents, my wife and my children who cheered me on from the beginning of my study. Last but not least, I am grateful to my beloved family and all my friends for their warm encouragements and supports.

I would to express sincere gratitude to Faculty of Marine Hodeida University and Ministry of Defense for the support and giving me valuable opportunity to learning. Besides, I would like to thank the authority of Universiti Teknologi Malaysia (UTM) for giving me scholarship (IDF) and providing me with a good environment and facilities such as computer laboratory to complete this thesis.

ABSTRACT

The use of social media for active collaborative learning and engagement to affect learning performance seems to be one of the examined topics in Information Systems domain compared to other technology adoption. However, social media uses distraction from studies and affects study habits, thus, using social media results in academic difficulties. Research students seldom use social media for educational purposes, also they do not use it interactively for collaborative learning and academic purposes. Previous frameworks and models of social media use have many significant negative impacts on student engagement, collaborative learning and learning performance. Thus, this research aims to determine the interactive factors for active collaborative learning and engagement as well as perceptual factors, and social media use for active collaborative learning and engagement to affect learning performance. This study proposes a theoretical model based on the theory of constructivism and theory of Technology Acceptance Model (TAM). A mixed method quantitative and qualitative was used to conduct a survey and interview of samples at five public universities in Malaysia. Data were analysed using AMOS, SPSS and Structural Equation Modelling (SEM) to investigate causal and mediating relationships between variables. Findings of the research revealed that interaction among research students, and interaction with lecturers or supervisors enhance active collaborative learning and engagement were significant at 60% and 73% respectively. It also indicates that active collaborative learning and engagement which affect the learning performance of research students achieved significant ratio of 74%. In addition, perceived ease of use and usefulness define a person's social media use for active collaborative learning and engagement that enhances satisfaction and affect the learning performance of research students were 71% and 74% respectively. It is found that perceived usefulness and satisfaction of research students are insignificant because some students use social media on social purposes not for educational purposes. Hence, it is important to raise awareness by the universities and lecturers for students to use social media as an active collaborative learning purpose as it will positively affect the learning performance of research students. Finally, the results indicate that the use of social media is significant for active collaborative learning and engagement which positively affect learning performance of research students of Malaysian Higher Education.

ABSTRAK

Penggunaan media sosial untuk pembelajaran kolaboratif aktif dan penglibatan memberi kesan kepada prestasi pembelajaran dan menjadi satu topik yang dibincangkan dalam domain Sistem Maklumat berbanding penggunaan teknologi lain. Namun, penggunaan media sosial mengganggu pembelajaran dan memberi kesan kepada tabiat belajar, maka penggunaan media sosial menyebabkan kesukaran akademik. Pelajar penyelidik jarang menggunakan media sosial untuk tujuan pendidikan, juga, mereka tidak menggunakannya secara interaktif untuk pembelajaran kolaboratif dan tujuan akademik. Kerangka kerja sebelum ini dan model penggunaan media sosial mempunyai banyak kesan negatif ke atas penglibatan pelajar, pembelajaran kolaboratif dan prestasi pembelajaran. Oleh itu, kajian ini bertujuan menentukan faktor-faktor yang interaktif untuk pembelajaran kolaboratif aktif dan penglibatannya serta faktor-faktor persepsi, dan penggunaan media sosial untuk pembelajaran kolaboratif aktif dan penglibatan yang mempengaruhi prestasi pembelajaran. Kajian ini mencadangkan satu model teori berdasarkan teori konstruktivisme dan teori Model Penerimaan Teknologi (TAM). Kaedah campuran kuantitatif dan kualitatif digunakan untuk menjalankan soal selidik dan temuduga sampel di lima universiti awam Malaysia. Data dianalisis dengan menggunakan AMOS, SPSS dan Model Persamaan Struktur (SEM) untuk menyiasat sebab-musabab dan menjadi pengantara pembolehubah. Hasil kajian menunjukkan bahawa interaksi antara pelajar penyelidikan dan interaksi dengan pensyarah atau penyelia meningkatkan pembelajaran kolaboratif aktif dan penglibatan dengan nisbah yang bermakna, masing-masing 60% dan 73%. Kajian juga mendapati bahawa pembelajaran kolaboratif aktif dan penglibatan memberi kesan kepada prestasi pembelajaran pelajar penyelidikan dengan nisbah yang bermakna iaitu 74%. Tambahan pula, tanggapan mudah guna dan kebergunaan menentukan penggunaan media sosial seseorang bagi pembelajaran kolaboratif aktif dan penglibatan meningkatkan kepuasan dan memberi kesan kepada prestasi pembelajaran pelajar penyelidikan dengan nisbah, masing-masing 71% dan 74%. Didapati bahawa tanggapan mudah guna dan kepuasan pelajar penyelidikan adalah tidak bererti kerana sesetengah pelajar menggunakan media sosial untuk tujuan sosial bukan untuk tujuan pendidikan. Oleh itu, penting untuk meningkatkan kesedaran oleh universiti-universiti dan pensyarah kepada pelajar untuk menggunakan media sosial sebagai tujuan pembelajaran kolaboratif aktif kerana ia akan memberi kesan positif kepada prestasi pembelajaran pelajar penyelidikan. Akhirnya, keputusan menunjukkan bahawa penggunaan media sosial adalah penting untuk pembelajaran kolaboratif aktif dan penglibatan memberi kesan positif kepada prestasi pembelajaran pelajar penyelidikan Kementerian Pengajian Tinggi Malaysia.

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENTS	iv
	ABSTRACK	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xiii
	LIST OF FIGURES	xvi
	LIST OF ABBREVIATIONS	xviii
	LIST OF APPENDICES	xxi
1	INTRODUCTION	1
	1.1 Overview	1
	1.2 Problem Background	3
	1.3 Problem Statement	8
	1.4 Research Question	9
	1.5 Research Objective	10
	1.6 Research Scope	10
	1.7 Importance and Benefits of this research	11
	1.8 Justification of the Research	13
	1.9 Organization of the Study	13
	1.10 Chapter Summary	14
2	LITERATURE REVIEW	15
	2.1 Introduction	15

2.2	Higher Education in Malaysia	16
2.2.1	Research Universities in Malaysian	17
2.2.2	Social Media Use in Higher Education	18
2.2.3	Types of Social Media Use in Higher Education	20
2.3	Theories and Variables Used in This Research	21
2.3.1	Research Students Interactivity	22
2.3.2	Research Students Engagement	23
2.3.3	Research Students Active Collaborative Learning	23
2.3.4	Perceived Usefulness	24
2.3.5	Perceived Ease of Use	25
2.3.6	Social Media Use	26
2.3.7	Satisfaction	26
2.3.8	Learning Performance	27
2.4	Comparison Impact of Social Media on Learning performance	32
2.5	Related Frameworks and Models Used in Prior Research	33
2.6	Summary	49
3	THE THEORETICAL MODEL	50
3.1	Introduction	50
3.2	Theoretical Model	51
3.3	Research Theories	51
3.3.1	Review of Constructivism Theories	52
3.3.2	Definitions of Constructivism	53
3.3.3	Social Constructivism	54
3.3.4	Theoretical of Constructivism	55
3.3.5	Active Collaborative Learning Theory	59
3.4	Technology Acceptance Model (TAM) Theory	60
3.4.1	Theory of Reasoned Action	61
3.4.2	Technology Acceptance Model and Its Extensions	61
3.5	Description of Hypotheses	65
3.5.1	Interactivity Factors	66
3.5.1.1	Interactive with Peers and Supervisors	66
3.5.1.2	Researchers Student Engagement	67

3.5.1.3	Active Collaborative Learning	68
3.5.2	Factors influencing Technology Acceptance	70
3.5.2.1	Perceived Ease of Use	71
3.5.2.2	Perceived Usefulness	72
3.5.2.3	Social Media Use	72
3.5.2.4	Satisfaction	73
3.6	Learning Performance	75
3.7	Summary	76
4	RESEARCH METHODOLOGY	77
4.1	Introduction	77
4.2	Research Overview	78
4.2.1	Research Paradigm	78
4.2.2	Selecting Suitable Research Approach	83
4.3.3	Research Strategy	85
4.3	Research Operational Framework	88
4.3.1	Phase 1: Theoretical Foundation	90
4.3.2	Phase 2: Instrument Development	91
4.3.3	Phase 3: Research Framework Validation	92
4.3.4	Phase 4: Main Study and Hypotheses Testing	94
4.4	Research Design	95
4.4.1	Instrument Development	95
4.4.2	Questionnaire Pre-Test	96
4.4.3	Pilot Study	98
4.4.4	Measurement and Construct Development	100
4.4.5	Sampling Method and Sampling Size	104
4.4.5.1	Population Selection	104
4.4.5.2	Sample Size and Sampling Procedure	105
4.4.6	Data Collection	107
4.5	Data Analysis	108
4.5.1	Data Preparation and Screening	112
4.5.1.1	Data Entry	112
4.5.1.2	Missing Data	112
4.5.1.3	Outlier detection	113

4.5.1.4	Normality	114
4.5.2	Validity and Reliability	115
4.5.2.1	Reliability	117
4.5.2.1.1	Scale Reliability	117
4.5.2.1.2	Individual Reliability	118
4.5.2.1.3	Composite Reliability	118
4.5.2.1.4	Average Variance Extracted	119
4.5.2.2	Validity Test	120
4.5.2.2.1	Content Validity	120
4.5.2.2.2	Construct Validity	121
4.5.2.2.3	Convergent Validity	121
4.5.2.2.4	Discriminant Validity	122
4.5.2.3	Unidimensionality	123
4.5.3	Model Fit Indices	124
4.5.3.1	Hypothesis Testing	126
4.5.3.2	Software Employment	127
4.6	Summary of Operational Framework	127
4.7	Summary	129
5	DATA ANALYSIS QUANTITATIVE RESEARCH	130
5.1	Introduction	130
5.2	Data Preparation and Screening	131
5.2.1	Missing data	131
5.2.2	Outliers	131
5.2.3	Normality	133
5.3	Descriptive Statistics	133
5.4	Overall Sample	135
5.4.1	Demographic Profile	136
5.4.2	Basics of Using Social Media	140
5.4.3	Descriptive Analysis	147
5.5	Reliability	149
5.6	Validity	152
5.6.1	Convergent Validity	152
5.6.2	Discriminant Validity	153

5.7	Measurement Model Assessment	155
5.8	Structural Equation Model Development	165
5.8.1	Hypotheses Results	167
5.9	Multiple Correlations	175
5.10	Multiple Regressions	177
5.10.1	Learning Performance with Constructivism	177
5.10.2	Learning Performance with TAM	179
5.10.3	Constructivism, TAM with Learning Performance	181
5.11	Conclusion of Analysis	183
5.12	Chapter Summary	188
6	DATA ANALYSIS QUALITATIVE RESEARCH	190
6.1	Introduction	190
6.2	Demographic Data of Respondents	191
6.3	Using Social Media	192
6.3.1	Using Social Media to Educational Purpose	192
6.3.2	Using Social Media to Collaborative Learning	193
6.3.3	Using Social Media to Learning Performance	194
6.4	Perceived Usefulness and Perceived Ease of Use	195
6.5	Tools of Social Media Use, Affect Learning Performance	198
6.6	Impact of Social Media on Learning Performance	201
6.7	Satisfaction of Social Media Use for Collaborative Learning and Engagement	204
6.8	Suggestions Use Social Media	205
6.9	Summary	206
7	RESULTS AND DISCUSSION	208
7.1	Introduction	208
7.2	Main Survey Results	209
7.2.1	Testing of Research Hypotheses	209
7.2.2	Discussion of the Research Hypotheses	210
7.2.3	Findings and Discussion for Background	227
7.3	Major Findings and Discussion	229
7.3.1	Descriptive Statistics and Correlation	229

	7.3.2 Descriptive Analysis on Using Social Media	234
	7.4 Review of the Validity of Structural Equations Models	236
	7.5 Summary	237
8	CONCLUSION	238
	8.1 Overview	239
	8.2 Research Summary and Achievements	239
	8.2.1 First Research Objective	239
	8.2.2 Second Research Objective	242
	8.2.3 Third Research Objective	248
	8.3 Research Contributions	249
	8.3.1 Theoretical Contributions	250
	8.3.2 Practical Contributions	251
	8.3.3 Academic Contributions	253
	8.4 Theoretical Implications of Study	254
	8.5 Limitations of Study	256
	8.6 Recommendations to Affect Learning Performance	257
	8.7 Future Research	258
	8.8 Concluding Remarks	259
	REFERENCES	260
	Appendices A-G	290-310

LIST OF TABLES

TABLE NO	TITLE	PAGE
2.1	Social Media Platforms	21
2.2	Operational Definition of Variables	30
2.3	Summary of Findings from Previous Case Studies	46
2.4	Summary of Research Frameworks, Models and Their Causal Links	48
4.1	Summary of Research Approaches and Paradigms	80
4.2	Characteristics of Quantitative and Qualitative Approaches	84
4.3	Research Operational Framework for Phase 1	90
4.4	Research Operational Framework for Phase 2	91
4.5	Research Operational Framework for Phase 3	93
4.6	Research Operational Framework for Phase 4	95
4.7	Expert Evaluators Profile	97
4.8	Cronbach Alpha (Pilot Test)	100
4.9	Summary of Instruments Used To Measurement Model	102
4.10	Summary of Goodness Fit Indices	125
4.11	Summary of Operational Framework	128
5.1	Observations Farthest From the Centroid	132
5.2	Descriptive Statistics for All Variables	135
5.3	Demographic Profile of Respondents	137
5.4	Using Social Media Based on Learning	141
5.5	Using Social Media Based on Place	141
5.6	Using Social Media Based on Purposes	142
5.7	Using Social Media for Active Collaborative Learning	143
5.8	Using Social Media for Sharing	144
5.9	Using Social Media for Discussing	144

5.10	Using Social Media for Publishing	145
5.11	The Motivation of Using Social Media	146
5.12	The Rate of Using Social Media	146
5.13	Mean Interval Used in Analysis	147
5.14	Measuring All Factors	148
5.15	Composite Reliability and Average Variance Extracted	151
5.16	Average Variance Extracted (AVE)	154
5.17	Fit Indices for the Measurement Model (First Order)	157
5.18	Items Deleted	158
5.19	Fit Indices for the Measurement Model (Second Order)	159
5.20	Model Fit of the Measurement Model	160
5.21	Fit Indices for the Measurement Model Constructivism	162
5.22	Fit Indices for the Measurement Model of TAM	163
5.23	Squared Multiple Correlation Items	164
5.24	Fit Statistics of Structural Model	166
5.25	Path Statistical Results (Summary of Hypothesis Testing)	168
5.26	Fit Statistics of Structural Model Constructivism	170
5.27	Path Statistical Results for Constructivism	172
5.28	Fit Statistics of Structural Model TAM	173
5.29	Path Statistical Results for TAM	175
5.30	Squared Multiple Correlation for Endogenous Variables	176
5.31	Summary Multiple Regressions Constructivism Theory	178
5.32	Summary for Multiple Regressions TAM Theory	180
5.33	Summary for Multiple Regressions constructivism and TAM	182
5.34	Hypotheses and Results	188
6.1	Country of Origin of Respondents	191
6.2	Program of Study	192
6.3	Use of Social Media for Educational Purposes	193
6.4	Use of Social Media for Active Collaborative Learning	194
6.5	Use of Social Media to Affect Learning Performance	195
6.6	Perceived Usefulness of Social Media	196
6.7	Perceived Ease of Use of Social Media	197
6.8	Perceived Overall Benefits Between Research Students	198
6.9	Type of Social Media to Enhance Educational Purpose	199

6.10	Type of Social Network Used for Collaborative Learning	200
6.11	Type of Social Media Used to Enhance Learning	201
6.12	Does Social Media Affect Sharing and Research Skills	202
6.13	Impact of Using Social Media on Learning Performance	202
6.14	Positives of Using Social Media on Learning Performance	203
6.15	Negatives of Using Social Media on Learning Performance	204
6.16	Satisfaction of Social Media Use for Collaborative Learning	205
6.17	Suggestions in How to Use Social Media	206
7.1	Descriptive Statistics and Correlation Matrix	230

LIST OF FIGURES

FIGURE NO	TITLE	PAGE
2.1	Overview of Literature Review Structure	16
2.2	The Conceptual Framework for Interactivity	33
2.3	The Research Framework of Utilization Social Media	34
2.4	Five NSSE and Their Relationship to Academic Performance	35
2.5	Relationships between Collaborative Learning and Satisfaction	36
2.6	Conceptual Framework for Social Network to Support Collaborative Learning	36
2.7	A Modified Social Media Utilization	37
2.8	Social Media Utilization Model	37
2.9	A Model for Social Networked Learning Adoption	38
2.10	The Research Model E-learning in Libyan Higher Education	39
2.11	Model of Users Satisfaction on Facebook	39
2.12	Final Model Acceptance of Facebook	40
2.13	Extended UTAUT Model for Collaborative Learning with Wiki System	41
2.14	Theoretical Model of Social Networking Site Use	41
2.15	Research Model of Facebook for Academic Purposes	42
2.16	Model of Adapted from Davis et al. (1989)	43
2.17	Research Model of Antecedents of Social Media Use	43
2.18	Research Model of People Use Social Networking Sites	44
2.19	A Social Networking Media Adoption Model	45
3.1	Zone of Proximal Development	56
3.2	Constructivist Educational Model	58

3.3	Theory of Reasoned Action	61
3.4	Technology Acceptance Model (TAM)	62
3.5	The Extensions to TAM	63
3.6	The Research Model and Hypotheses	64
4.1	Deductive Approach for Current Study	87
4.2	Research Design	89
4.3	Data Analysis Process (SEM)	111
4.4	Summary Methods Used to Establish Measures, Validation	116
5.1	Time of Using Social Media on Semesters	138
5.2	Time of Using Social Media on a Day	138
5.3	Time of Using Social Media on a Week	139
5.4	The Measurement Model	161
5.5	The Measurement Model of Constructivism Theory	162
5.6	The Measurement Model of TAM	163
5.7	The Structural Model	167
5.8	Structural Model for Constructivism Theory	170
5.9	Structural Model for TAM	173
5.10	Structural Equation Model for Interactive Factors	183
5.11	Structural Equation Model for Perceptual Factors	184
5.12	Research Model Path and T-values	185
5.13	Research Hypotheses Testing	186

LIST OF ABBREVIATIONS

AGFI	-	Adjusted Goodness-of-Fit Index
AMOS	-	Analysis of Moment Structures
AP	-	Academic Performance of researchers and students
APEX	-	Accelerated Program for Excellence
AVE	-	Average Variance Extracted
B	-	Beta
CA	-	Cronbach's Alpha
CFA	-	Confirmatory Factor Analysis
CFI	-	Comparative Fit Index
CL	-	Collaborative Learning
CMC	-	Computer Mediated Communication
CO	-	Compatibility
CR	-	Critical Ratio
CR	-	Composite Reliability
CR	-	Construct Reliability
CSCL	-	Computer-Supported Collaborative Learning
DF	-	Degrees of Freedom
DS	-	Discomfort
EN	-	Engagement
EU	-	Perceived Ease of Use
FL	-	Factor Loading
GFI	-	Goodness of Fit Index
GM	-	Interactive with students and researchers
GOF	-	Goodness-Of-Fit
GPA	-	Grade Point Average
GSS	-	Group Support Systems
H	-	Hypothesis

HE	-	Higher Education
IC	-	Inter-Construct Correlations
ICT	-	Information and communications technology
IFI	-	Incremental Fit Index
IN	-	Intention to Use Social media
IS	-	Information System
IT	-	Information Technology
IR	-	Internal Reliability
IRU	-	Innovative Research Colleges
LISRE	-	Linear Structural Relations
L		
LMS	-	Learning Management Systems
LOGO	-	Multi-Paradigm Language
MM	-	Measurement Model
MI	-	Modification Indices
MHE	-	Malaysian Higher Education
MKO	-	More Knowledgeable Other
ML	-	Maximum Likelihood
MAR	-	Missing at Random Type
N	-	Number
NFI	-	Normed Fit Index
NSSE	-	National Survey of Student Engagement
OSN	-	Online Social Networking
PGFI	-	Parsimonious Goodness of Fit Index
PhD	-	Doctor of Philosophy
PLS	-	Partial Least Squares
PU	-	Perceived Usefulness
QS	-	World University Rankings
R^2	-	Squared Multiply Correlation
RFI	-	Relative Fit Index
RMR	-	Root Mean Square Residual
RMSE	-	Root Mean Squared Error of Approximation
A		
RS	-	Researchers and students' satisfaction

SE	- Standard Error
SEM	- Structural Equation Modeling
SET	- Social Exchange Theory
SD	- Standard Division
SI	- System Interactivity
SICC	- Squared Inter-Construct Correlations
SM	- Structural Model
SM	- Social Media
SMCs	- Squared Multiple Correlations
SPSS	- Statistical Package for the Social Sciences
SSCL	- Social Media Support Collaborative Learning
SU	- Interactive with supervisors or lecturers
SW	- Standardized items loadings
TAM	- Technology Acceptance Model
THES	- Times Higher Education World University Rankings
TLI	- Tucker-Lewis coefficient
TPB	- Theory of Planned Behavior
TRA	- Theory of Reasoned Action
TUT	- Tampere University of Technology
UK	- United Kingdom
UKM	- National Universiti Kebangsaan
UM	- Universiti Malaya
UPM	- Universiti Putra Malaysia
USA	- United States of America
USM	- Universiti Sains Malaysia
UTAU	- Unified Theory of Acceptance and Use of Technology
T	
UTM	- Universiti Teknologi Malaysia
WTC	- Willingness To Communicate
X^2	- Chi-square
X^2/df	- Normed Chi-Square per degree of freedom ratio
ZPD	- Zone of Proximal Development

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	Survey Questionnaire	290
B	Interview Questions	297
C	Composite Reliability and Discriminant Validity	300
D	Explore Factor Analysis	304
E	Assessment of Normality	308
F	Sample of Permission for Data Collection	310

CHAPTER 1

INTRODUCTION

1.1 Overview

Like many other countries Malaysia has been hit by the social media phenomenon. Statistics reveal that Malaysia is among the top five countries in terms of number of Facebook accounts created (Ainin *et al.*, 2015). Social media is widely considered as facilitating active collaborative learning among research students. However, there is a lack of research on this topic in Malaysian higher education. Thus, the present research attempted to minimize the literature gap by examining the use of social media for active collaborative learning and engagement to affect learning performance of research students. The research model was developed on the basis of the constructivism theory and technology acceptance model (TAM).

Based on the constructivism theory and technology acceptance model (TAM), this research provided insight about interactive and perceptual factors of social media use. The interactive factors included interactivity with group member or peers, interactivity with supervisor or lecturers, active collaborative learning and engagement. Perceptual factors included perceived ease of use, perceived usefulness, social media use and satisfaction of research students. Therefore, both interactive and perceptual factors affect learning performance of research students in Malaysian higher education.

Active collaborative learning can occur on social media, as they can be used to help individuals work together to complete a collective objective (Cheung et al., 2013). In addition to this, social media use facilitates positive relationship between the learning performance and satisfaction of research students (Cao and Hong, 2011). Furthermore, Ainin et al. (2015) reported a positive relationship between students learning performance and Facebook usage.

Alloway and Alloway (2012) expressed active collaborative learning as the continuum by students for interactive and engagement to exchange ideas and viewpoints through social media (Lariscy *et al.*, 2009) for example Facebook. Additionally, these means of communication include other paraphernalia for social exchange, for example e-mail, intranet, blogs, video conferencing, photo discussing, wikis, and virtual mobile phone industries, which are known as social media (Eyrich, 2008). The overall idea of communication is a system that allows individuals to take advantage of technology to interact, collaborate and communicate on content, opinions, encounters, experience, and technologies within a group by active collaborative learning and engagement (Ala-mutka and Punie, 2010).

Social media ease of use and usefulness helps students to become more active, create understanding and discussion among peers, supervisors, instructor and experts, the receipt of expert guidance, and problem fixing abilities (Hamid *et al.*, 2011). Perceived ease of use and perceived usefulness were statistically significant predictors for satisfaction. Statistically, satisfaction is significantly higher for users who have more friends and who interact with more students compared to those who have fewer friends and less interactivity (Sibona and Choi, 2012).

Researchers have addressed various issues and phenomena using social media network at various academic and social levels. Extant literature on social media is of opinion that various helpful methods can be applied in higher education sector. However, this research aims to develop a model on social media use for active collaborative learning and engagement by interactive and perceptual factors in turn affecting the learning performance of research students.

1.2 Problem Background

Students seldom use social media for educational purposes (Argan, 2010). Furthermore, students use social media for socializing activities and not for interactivity to active collaborative learning, engagement and academic purpose (Helou *et al.*, 2012; Cao and Hong, 2011; Moran *et al.*, 2012). According to Cao *et al.* (2013), a research model of antecedents and consequences of social media was used but results indicated a higher perceived risk of using social media to waste time and reduce motivation to learn. Moreover, as highlighted by Wang and Chen (2011), various scholars have indicated that time allocated in using social networking was heavily affected. It is likely that most Malaysian higher education students use social media and spend many hours checking social media, and that there is an adverse aspect to research students utilization of social media.

There is a growing concern that the use of extensive social media can lead to loss of motivation. (Rouis *et al.*, 2011) described that motivation may increase the inner wish of the particular student to do well in learning performance. Accordingly, Arthurs and Templeton (2009) indicated that collaborative class activities can be accompanied by individual projects to enhance student learning. Students' have a strong desire to have active collaborative learning and learning with technology, and for that reason their novelty effects may be misleading in the belief that social media supports active collaborative learning (Mustapha, 2010).

There is a negative impact on interactions among students (Sibona and Choi, 2012). Social media does effect and provide challenges in the student's academic transition from college to university level educational experiences which might hinder learning performance of research students (Dahlstrom *et al.*, 2011). The effects of using social media based active collaborative learning were investigated and it was found that social media could increase learning achievements in active collaborative learning environments. Consequently, researchers should track and analyze the interaction pattern that occurs during active collaborative learning (Su *et al.*, 2010).

Lecturers are familiar with old technologies but they don't use social media for teaching and student interaction purposes (Roblyer *et al.*, 2010). Students are not satisfied with existing platforms for interacting used by lecturers (Wolf *et al.*, 2012). Moreover, lecturers do not have the required skills for social media use (Hamid *et al.*, 2011). According to Wolf *et al.* (2012) there is an excuse for effective active collaborative learning and understanding the communication between students and teachers concerning their training, as students are not convinced by the existing platforms for interaction used by the teachers; however the students are receptive to new social media which will facilitate learning with teachers. Lecturers are of the opinion that students rarely use social media network for educational purposes (Argan, 2010; Nemetz *et al.*, 2012).

Despite this, faculty members who use social media have reported issues pertaining to social media such as difficult to use, ineffective measurement and assessment (Moran *et al.*, 2012). Comparatively, empirical evidence suggested that students on campus needed more support in utilizing complementary social media active collaborative learning options in comparison with face-to-face conferences. Lecturers may have significant roles in supporting students when moving to the utilization of social media in assisting brief questions, solutions and coordination in showing such media for active collaborative learning and engagement (Hrastinski and Aghaee, 2011). Evaluative periods were articulated as a way of feedback process between lecturers and student (Forkosh and Hershkovitz, 2012).

Using social media resulted in academic difficulties (Junco, 2012; Junco and Cotton, 2012; Madge, *et al.*, 2009; Flad, 2010). Using social media affects Grade Point Average (GPA) and learning performance (Nemetz *et al.*, 2012; Junco *et al.*, 2011; Paul *et al.*, 2012; Kirschner and Karpinski, 2010). Research students use social media for learning which has negative effect on their concentration like time spent (Kirschner and Karpinski, 2010). Madge *et al.* (2009) found that time allotted to Facebook for social reasons was not used for academic purposes.

According to Jacobsen and Forste (2011), the students' learning performance and social media use revealed that social media are negatively associated with grades, and since students report using social media in school or while doing homework, the distractions might be dangerous to students' learning performance. Even after controlling the offline time use, there are a substantial number of negative associations between social media use and learning performance of universities research students. As the level of attention increases, the amount of time spent on social media is greater than before, implying that there is an increased level of attention which has a negative influence on their academic achievement (Paul *et al.*, 2012).

Using social media affects study habits and is a distraction from studies (Ahmed and Qazi, 2011; Flad, 2010; Nemetz *et al.*, 2012). Even though the current emphasis in education has moved substantially to active collaborative learning over individual learning (Yadin and Bach, 2010) suggested that individual learning abilities and individual accountability should also be cultivated and evaluated for significant collaborative understanding. Furthermore, students have to be more self-directed in using the growing assimilation of technology into learning (Tsai, 2011; Beres *et al.*, 2012). Concerning the use of social media for active collaborative learning group work, students not familiar with social media and even students who reported very negative experiences with the tool expressed that the idea of using a social media for active collaborative learning and engagement seemed attractive to them, but they mentioned that they would rather use media for interactivity (Rodriguez *et al.*, 2012).

Studies have also shown that multitasking with technology specifically using social media decreases both efficiency and productivity in an academic setting and that multitasking has an impact on the relationship between social media use and Grade Point Average (GPA) in United States and European universities. The results also showed that the negative relationship between social media use and GPA was moderated by multitasking and the waste of time in the US sample. This may be due to European students being less prone to multitasking (Karpinski *et al.*, 2013).

Therefore, it may be recommended that students who are constantly multitasking appear to have lower learning performance in college. The truth is that students who regularly use social media network may take more time doing their homework, and this may lead to the lack of ability of those students to handle their time effectively. However with active collaborative learning will be handled effectively (Kirschner and Karpinski, 2010). Research conducted by Ohio Condition College disclosed that university students who utilize Facebook cut back time on studying and also have lower grades than students who don't use social media (Kalpidou *et al.*, 2011). Therefore, there is a general negative impact on students' learning performance (Karpinski *et al.*, 2013). In education, Facebook, generally, negatively affects the educational performance of which scholars noted that the effect is greater for male students (Haq and Chand, 2012).

Previous models and frameworks of social media have many significant negative impacts on student engagement, active collaborative learning and learning performance (Cao and Hong, 2011; Junco, 2012; Kirschner and Karpinski, 2010; Haq and Chand, 2012; Paul *et al.*, 2012; Ahmed and Qazi, 2011; Karpinski *et al.*, 2013). In addition, few researchers in Malaysia have conducted studies on social media in higher education with different perspectives and theories. Therefore, it is recommended to investigate both interactive and perceptual factors which influence academic performance by social media (Lee *et al.*, 2012; Lin and Lu, 2011; Alloway and Alloway, 2012; Hamid *et al.*, 2011).

Based on a study by Selwyn and Grant (2009) and Madge *et al.* (2009), student centered provide good examples of active collaborative learning tools for discussing files and collaborative work and learning. Students in Malaysia are reasonably well exposed to social media network programs and are comfortable in this learning process. Answers are in line with similar participants interviewed elsewhere but varied slightly on specific social networking tools because of exposure. Malaysian students are discovered to be passive instead of actively contributing factors to an understanding of networking tools (Zakaria *et al.*, 2010).

While a wide range of study on social media aimed to explore influential factors on the usage of social media network, there is lack of comprehensive studies on social media network which integrated all essential factors of social media using network for active collaborative learning and engagement in a single study (Lin and Lu, 2011). Thus, conducting research on social media in Malaysian higher education will be able to integrate all factors related to social media which is seen as a critical step in understanding students' social media use for active collaborative learning and engagement and the effect it has on their learning performance.

Understanding the research students who are using social media requires investigation of all factors that influence the usage of social media by the individual. In particular, exploring both interactive and perceptual factors related to social media use can be a potential direction for better and comprehensive understanding of satisfaction and social media use for active collaborative learning and engagement to affect learning performance (Lee *et al.*, 2012; Lin and Lu, 2011; Alloway and Alloway, 2012; Hamid *et al.*, 2011). With reference to the researchers in Malaysia, most models have weaknesses and are unable to contribute toward higher education in this country.

The gaps in this research are that previous models have focused either on perceptual factors or interactive factors but not both in developing model (Nemetz *et al.*, 2012). Lack of models in learning performance involving the use of social media as research subject in Malaysia (Lin and Lu, 2011) and previous research had less consideration toward models of social media under educational environment (Zakaria *et al.*, 2010). Therefore the main aim of this research is to overcome the weaknesses which will be developed in a model that shows interactivity, perceptual, social media use to active collaborative learning, engagement, achieve satisfaction of research students in Malaysian higher education through constructivism theory (Vygotsky, 1978; Benson, 2001; Carlile *et al.*, 2004) and Technology Acceptance Model TAM model (Davis, 1989; Venkatesh and Bala, 2008) to evaluate learning performance.

1.3 Problem Statement

There has been a vast amount of research on social media networks. In recent years, a new stream of research in this field has started gaining attention in regard to social media usage. Research on social media has been predominantly conducted in fields such as privacy (Mohamed and Ahmad, 2012), psychology (Wang *et al.*, 2012), health (Lauckner *et al.*, 2013), marketing (Fuciu and Gorski, 2013), cultural (Al-Omouh *et al.*, 2012), social (Lee, 2013). Nevertheless, there is lack of studies (Zakaria *et al.*, 2010; Selwyn and Grant, 2009; Madge *et al.*, 2009) that have researched understanding the use of social media as tools of effective learning performance through active collaborative learning in higher education and how it can elevate the quality of learning in Malaysian higher education institutions. So far, focus has been placed in developed countries such as the USA, Australia and the UK.

However, this research will describe and discuss studies in Malaysian higher education. Additionally, the few studies which have investigated social media acceptance and adoption have neglected significant parts of inherent nature of social media which is related to both interactive and perceptual factors of social media use (Yeh *et al.*, 2011; Lee *et al.*, 2012).

This research is important and will determine characteristics and factors and the relationship between social media use for active collaborative learning and engagement that affects learning performance of research students in Malaysian higher education. In addition, while there are many social media models there is no model in evaluating learning performance and satisfaction of research students via using social media for active collaborative learning and engagement in Malaysian higher education, representing a gap in this area. Thus, the research problem in this study will be to investigate and explore the factors that affect the relationships between active collaborative learning and engagement to influence to learning performance of research students, with satisfaction of using social media in Malaysian higher education.

The problem statements of this research can be expressed in three main parts. The first part concerns the lack of reflection on social media use for active collaborative learning and engagement with consideration of relevant interactive and perceptual factors (Nemetz *et al.*, 2012; Argan, 2010). Haq and Chand (2012) stated that 61% negatively affect the studies via the usage of social media while Kirschner and Karpinski, 2010 stated that 74.3% usage of social media has negative impact on learning performance. The second part concerns the lack of practical instrument models for measuring such factors in such a context in a single study (Lin and Lu, 2011; Yeh *et al.*, 2011; Lee *et al.*, 2012) and lack of intention to use social media for collaborative learning and engagement with consideration of relevant interactive and perceptual factors (Nemetz *et al.*, 2012; Argan, 2010; Lin and Lu, 2011). The third part concerns the possibility of modeling acceptance of social media with constructivist theory through a theoretical model of constructs relevant to both interactive and perceptual factors which exist in the social media in the educational environment (Zakaria *et al.*, 2010; Selwyn and Grant, 2009; Madge *et al.*, 2009). In addition, there is a lack of models that have researched understanding using social media and how it affects learning performance in Malaysian higher education (Zakaria *et al.*, 2010; Selwyn and Grant, 2009; Madge *et al.*, 2009).

1.4 Research Questions

The main research question the researcher hopes to answer is: What are the interactive and perceptual factors that affect active collaborative learning and engagement, which in turn affect learning performance? To answer this main research question, there is a need to investigate several sub questions which have been identified as follows:

1. What are the interactive and perceptual factors and what is the basis of using social media?
2. What is the relationship between interactive and perceptual factors and learning performance?

3. How can a model of social media use through interactive and perceptual factors be developed?

1.5 Research Objectives

This research aims to develop a model of social media use for active collaborative learning and engagement by interactive and perceptual factors which in turn affect learning performance in Malaysian higher education institutions, and an investigation of the validity of the theories constructivism and Technology Acceptance Model (TAM) for interactivity and social media use for active collaborative learning and engagement to affect an learning performance of research students in Malaysian higher education. The specific objectives of the study are as follows:

1. To identify the basics of social media including the relevant interactive and perceptual factors.
2. To determine the relationship between interactive and perceptual factors and learning performance.
3. To develop a model of social media use through interactive and perceptual factors.

1.6 Research Scope

Based on the research questions and research objectives discussed above, the aim of the current research is the development of a theoretical model of social media use for active collaborative learning and engagement through relevant interactive and perceptual factors. Thereby, this research focuses on the measurement of a reliable and validated theoretical model for social media, to understand determinants of

interactive and perceptual factors that affect the learning performance of research students.

Social media is widely considered for educational or non-educational purposes among research students. Since there are a variety of social media encompassing many attributes of online technologies, thirteen tools were selected in this research to gather more information about tools that can be used in an educational environment (Yakin, 2013; Buzzetto, 2012; Liu, 2010; Solis, 2008). This research targets five research universities in Malaysia, and the targeted group includes the research students enrolled in master taught course, master mixed mode, master research and PhD in those academic institutions.

1.7 Importance and Benefits of Research

This research enriches the current literature on the use of social media for active collaborative learning and engagement which is still emerging. It also contributes in practice by exploring the factors of social media use to affect the successful learning performance of research students for harnessing learning in the higher education context. The importance of this research linking social media with research students at universities in collaborating learning and engagement among students and faculty members and to obtain more knowledge and knowledge sharing requires more exploration of factors influencing users in such educational environments. At the same time, social media are growing remarkably which highlights the need for further investigation of the use of these sites for educational purposes. Furthermore, this research contributes to the understanding of the effect of the use of social media on learning performance through exploring interactive and perceptual factors which provide insights into social and interactive research students by discussing such existing factors in the context of social media use.

The significance and contribution of this research can be categorized into two aspects, theoretical and practical contributions. In terms of theoretical contribution, the research constructivism theory used with Technology Acceptance Model (TAM) by using social media for active collaborative learning and engagement.

In addition, this research may allow researchers and practitioners to understand the relevant interactive and perceptual factors that influence and affect learning performance of research students. Moreover, this research provides a unique model that integrates constructivism with TAM in academic research context.

In terms of practical contribution, this research allows the leaders in departments, faculties, research management units in universities, and ministry of higher education to have a broad perception about social media use for active collaborative learning and engagement to affect learning performance by interactivity and technology acceptance. Thus, research students are encouraged to use social media for educational purposes. Moreover, the research leads to the development of an instrument and factors for academic institutions to analyze and measure the learning performance of research students in terms of their use of technology.

The findings of this research may also contribute to the body of ideas and knowledge on social media use which is accompanied by the development of justified constructs and verified measurement of a theoretical model of social media use. Such findings are a practical step which is critical for future research studies on social media.

Finally, these studies may have implications for Malaysia in general, since higher education is essential in Malaysia when the universities and colleges can use interactive for active collaborative learning and engagement to affect learning performance of research students in Malaysian higher education.

1.8 Justification of Research

There is limited understanding of literature on utilization of social media network for active collaborative learning to affect learning performance of research students in higher education. The intention of this research is to fill this gap by determining the standards affecting utilization of social media network which affect the learning performance of research students in Malaysian higher education.

The researcher additionally proposes to increase the wealth of social media network research by analyzing and developing theoretical model of using social media for active collaborative learning and engagement to affect learning performance of research students in higher education. The subject of this research is of maximum importance and appropriate since the use of social media by researchers and students at universities and colleges in higher education is declining and shifting to previous traditional education to make use of the social media within the universities and colleges. Finally, development of effectiveness in education such as utilization of social media between students for active collaborative learning and engagement will open new opportunities for universities and college to support the students in courses with more knowledge associated with using social media as well as for active collaborative learning and engagement to affect learning performance of researchers and students in Malaysian higher education.

1.9 Organization of Research

This research consists of eight chapters; Chapter 1 introduces the research issues, background and the research problems for this research. This is followed by research questions, objectives and justification of the research, significance, scope of the research and the organization of this research. Chapter 2 contains literature review, which focuses on previous research, presenting a review of literature and relevant research associated with use of social media network through interactive and

perceptual factors to affect learning performance of research students. Chapter 3 provides the theoretical model of research and states the hypotheses. Chapter 4 presents the research methodology and justifies the methods used in this research. This is followed by discussion of research design including population, sample, data collection and the development of the instrument. It also covers methods used for data analysis.

The analysis of quantitative data associated with the research model, the summary of the overall response rate, characteristics of respondents and data screening are some of the topics covered in Chapter 5. The determinants of reliability indices using SEM analysis and the Analysis of Moment Structures (AMOS) software are also discussed. Chapter 6 presents the analysis of qualitative data. Chapter 7 presents the results and discussion and Chapter 8 presents the research summary and achievements for each objective, research contributions, theoretical implications of research, limitations of research, recommendations, future research and concluding remarks.

1.10 Summary

This chapter carried out an introduction to the development of a theoretical model of the use of social media for active collaborative learning and engagement to affect the learning performance of research students in Malaysian higher education, provided the problem background and problem statement, then formulated the research questions and objectives, research scopes, research significance to be achieved, new contributions, and the justification of research. Finally, it concludes with an overall structure of the eight chapters of this thesis. Hopefully, by developing the next chapters, the objectives of research will be achieved.

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