



Pertanika Journal of
**SOCIAL SCIENCES
& HUMANITIES**

JSSH

VOL. 26 (S) JAN. 2018

A special edition devoted to

**Culture, Education and Communication:
Approaching the Humanities**

Guest Editors

**Chong Su Li, Sumathi Renganathan
& Abd Ur-Rahman Mohamed Amin**



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Pertanika is now over 40 years old; this accumulated knowledge has resulted the journals being indexed in abstracted in SCOPUS (Elsevier), Thomson (ISI) Web of Knowledge [ESCI, BIOSIS & CAB Abstracts], EBSCO & EBSCOhost, ERA, DOAJ, AGRICOLA (National Agric. Library, USA), Cabell's Directories, Google Scholar, MyAIS, Islamic World Science Citation Center (ISC), ASEAN Citation Index (ACI) & Rubriq (Journal Guide).



Preface

This Special Issue puts together a collection of articles that were first presented at the International Conference of Humanities and Social Sciences (ICHSS) in August 2016, in Kuala Lumpur, Malaysia. This conference was organised by Universiti Teknologi PETRONAS. More than 60 papers were presented at the conference by participating speakers from Malaysia, Indonesia, Jordan and Pakistan. Of these, a total of 9 papers were chosen for this Special Issue.

Chiming with the theme “Education, Culture and Communication: Approaching the Humanities”, this collection tells of the various issues which social scientists in the 21st century are concerned about. From an interrogation of geographical and social space right through to the questioning of the spiritual and metaphysical realm, these articles flag up salient topics that affect how a civil society thinks of and understands itself. Despite their different paradigms and levels of arguments, the authors have voiced their thoughts about how sociocultural perspectives are brought to bear on everyday lives as seen in our schools, universities, workplaces, houses of worship and cities. What unites these authors is their pursuit for answers to questions that broaden epistemologies within the discipline of humanities. Although the articles in this collection attempt at offering some answers, what is clear is that these questions must continue to be asked and probed. We hope that our readers will take up the baton and continue the race.

Acknowledgement must be accorded to members of the Department of Management and Humanities, Universiti Teknologi PETRONAS for lending their full support in organising the conference and coordinating publication efforts. We are also grateful to the reviewers for their time and commitment rendered during the review process. Finally, this Special Issue would not have been possible without the wisdom and valuable advice of Dr Nayan Kanwal, the Chief Executive Editor, UPM Journals.

Guest Editors:

Chong Su Li (*Dr.*)

Sumathi Renganathan (*Dr.*)

Abd Ur-Rahman bin Mohamed Amin

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Verifying International Students' Satisfaction Framework for the Development of MISS-Model in Malaysia

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ABSTRACT

A proposed framework to measure international students' satisfaction on their learning and living in Malaysia was developed based on literature reviews on international students (Chong, 2015). The proposed framework has five domains in measuring factors influencing international students' satisfaction, namely, academic internal environment, non-academic internal environment, external environment, image and perceived value. Each of these five domains has their own contributing variables or factors. This verification process is needed because the literature reviewed is limited in the context of Malaysia. Hence, an empirical study was conducted to verify the proposed framework by interviewing 20 international students from 14 nationalities at 11 private universities located in the Klang Valley, Malaysia. The transcribed scripts and notes taken during the interview were analysed. Based on the data collected from the interviews, two objectives of the research were met. Firstly, it has verified and confirmed factors in measuring international students' satisfaction. Secondly, new variables were suggested by interviewees. The outcome of the research has contributed towards improvement of the proposed framework, thereby making it a more comprehensive model. This study and the proposed framework are useful

to both the government and institutions of higher learning to improve their services. This will in turn help Malaysia to achieve its aspiration of becoming an international education hub.

Keywords: Education hub, internationalization of higher education, international student satisfaction

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INTRODUCTION

International student mobility has always been the focus for internationalisation of higher education by many institutions and countries. It has been forecast by the International Development Programmes in Australia that the global demand for international education would reach approximately 7.2 million students by 2025 (Australia Education International [AEI], 2012). The market will require an average of 4% annual growth from 2014 with five million students who study abroad to reach 7.2 million students by 2025 (International Consultants for Education and Fairs Monitor [ICEF Monitor], 2015). This growth is intensified due to the emerging upper-middle-income countries such as China, Brazil, Mexico and Turkey. Sending countries from these upper-middle-income economies have recorded a significant increase of 161 percent between 2000 and 2012 (World Education News and Reviews, 2015).

International education has marked a major contribution to international exports (Radulovich, 2008). Countries and institutions have gained much economically from student mobility. According to the Australian Bureau of Statistics, in 2014 to 2015, the export of international education was at AUD\$18.8 billion, making it the third largest export and the largest service export in Australia (Australian Government, 2015). Meanwhile, in the United States (U.S.), which is the largest international education exporter, international students contributed US\$30.5 billion in 2015 according to the

U.S. Department of Commerce (Institute of International Education, 2016). As the second largest exporter, the United Kingdom (U.K.), about £\$10.2 billion income from education export was garnered for 2011-2012 (Department for Business, Innovation and Skills, 2013). Malaysia as the emerging contender in the education market has benefited from education export with income generated at RM2.6 million in 2010 (Ministry of Higher Education [MoHE], 2011a).

Besides the economic motivation in the recruitment of international students, university branding and reputation is also one of the contributing factors. Universities strive to elevate their brand through university ranking. This is because the number of international students enrolled is one of the criteria in many university ranking systems, for example Times Higher Education World University Rankings, and QS World University Rankings. By hosting more international students, the ranking of a university can improve.

These two major motivations have made international student recruitment an important strategic agenda for countries and higher education institutions, especially as the international education market is getting more diversified and competitive. For instance, in the case of the US, although it is still the largest host country, its market share fell from 23% in 2000 to 17% in 2011 (ICEF Monitor, 2015). In order to attract and retain international students, the country and/or institution will need to provide conducive and quality learning and

living environment to eventually satisfy international students' total experience at the host country. Therefore, understanding the factors that influence international students' satisfaction is crucial for a country that aspires to be an education hub.

Hence, a proposed framework in measuring international students' satisfaction was developed (Chong, 2015) based on the review of literature. The proposed framework has identified five domains that influence international students' satisfaction, namely: (a) academic internal environment, (b) non-academic internal environment, (c) external environment, (d) image and (e) perceived value. The development of the framework will be discussed further in the paper.

The objectives of this paper are to verify the proposed framework on factors influencing international students' satisfaction and to identify new variables that may influence international students' satisfaction in Malaysia. The subsequent writing is organised into justification of the study, significance of the study, review of literature, methodology, findings and discussion, limitations, recommendations, and conclusion.

JUSTIFICATION

This study serves as part of a bigger research on the development of Malaysia International Students' Satisfaction Model (MISS-Model) proposed by the researchers. The process of the development of MISS-Model encompasses the review of literature, proposed framework, verifying

the proposed framework, development of a survey instrument, data collection via questionnaire, data analysis and modelling of MISS-Model. This study aims to verify the proposed model, which is the third stage in the development of MISS-Model.

The verification of the proposed framework is required because of limited literature in the context of Malaysia. Of the 42 primary sources of literature on international students which were reviewed, half of these were based on Malaysian literature and only two empirical studies were found to directly measure the factors influencing international students' satisfaction. In comparison, more studies on international students and student satisfaction have been conducted in Australia, the United Kingdom and the United States. By verifying the factors empirically, the validity and reliability of the factors identified in literature can be increased.

Significance of the Study

The finding from this study will contribute to the body of knowledge in confirming and identifying factors that influence international students' satisfaction in Malaysia. More importantly, as Malaysia aspires to be an international education hub, the Ministry of Higher Education (MoHE) has set a target to attract 200,000 international students by 2020 (MoHE, 2007). In achieving this, it is imperative to identify the key factors that influence satisfaction of international students. Data collected from this research will serve as input to construct a survey instrument

contributing to the development of MISS-Model. This model will be used to measure international students' satisfaction at national or institutional level in the future. The outcome of the larger study, which is the development of MISS-Model will be used to recommend new policies and strategies to attract international students. This will contribute towards enhancing inflows of international students to attain the education hub vision of the country.

Internationalisation of Higher Education in Malaysia

Internationalisation effort of higher education in Malaysia started back in the 1980s where its focus was on Transnational Education (TNE). Many franchises or joint degree programmes were offered by newly established private colleges in Malaysia with their partner universities abroad (Tan, 2002; Tham, 2013). The offer was more for meeting the demand of local market between the 1980s and 1990s. During this period, more local students were enrolled in these colleges compared to international students (Tan, 2002).

The demand from international students increased after 2001, possibly as an after-effect of September 11. Many students from gulf countries have diverted their study destination from Western countries to Asian countries. Table 1 shows the growth in international student enrolment. Within the span of 15 years, from 2001 to 2015, the total number of international student enrolment increased dramatically from 18,242 to 122,034.

Table 1
International student enrolment from 2001 to 2015

Year	Institution type		Total
	Public HEI	Private HEI	
2001	4,770	13,472	18,242
2002	5,045	22,827	27,872
2003	5,239	25,158	30,397
2004	5,735	25,939	31,674
2005	6,622	33,903	40,525
2006	7,941	36,449	44,390
2007	14,324	33,604	47,928
2008	18,485	50,679	69,164
2009	22,456	58,294	80,750
2010	24,214	62,705	86,919
2011	25,855	45,246	71,101
2012	26,232	57,306	83,538
2013	28,826	52,598	81,424
2014	32,842	74,996	107,838
2015	33,369	88,665	122,034
Total	261,955	681,841	943,796
%	28%	72%	100%

Source: Ministry of Higher Education Malaysia (n.d., 2011b, 2012, 2014, 2015)

However, the country has failed to meet the target of 150,000 international students for 2015. Even though there is an increase in the total number of international student enrolment, Malaysia should not underestimate the threat from emerging contenders, for example Singapore Global Schoolhouse, Hong Kong Regional Education Hub and a few others in the gulf countries, namely Dubai International Education City and Qatar Education City (Knight & Morshidi, 2011). Therefore, in order to stay competitive in the international higher education market, Malaysia needs to improve its pull factors in attracting international students to the country

by understanding the determinants of satisfaction among international students.

International Students' Satisfaction

In studies on student satisfaction, many researchers take the role of students as customers (Arambewela, 2003). This is the notion that students pay for their fee and expect to receive services that meet their expectations. As in any business including higher education, satisfying customers is pertinent for business growth. When customers are satisfied, they will create many positive effects, such as positive word-of-mouth, being loyal and become a returned customer (Jamal & Naser, 2002). Similarly, in the case of international students, if they are satisfied with living and studying in the host country, they too will generate positive ripple effects, such as promoting and recommending the study destination and institution to relatives and friends. They may also be returning to the same country and/or institution to further their postgraduate studies (Arambewela, 2003; Arambewela & Hall 2006; Slethaug & Manjula, 2012).

The Development of International Students' Satisfaction Framework

The development of international students' satisfaction framework involved a few processes. Firstly, an extensive review of literature on international students was conducted. A total of 42 primary sources of literature and 32 secondary sources were reviewed to identify factors that influence

international students' satisfaction (Chong, 2015). The vast reading was derived from five major themes of literature: (a) choice of study destination, (b) international students' experience and expectations, (c), challenges, problems and adjustment faced by international students, (d) perspective on service quality and (e) factors that influence both local and international students' satisfaction.

The second process in developing the framework was the review of literature on customer satisfaction. Based on the review, factors that evaluate customer satisfaction comprise customer expectation, perceived quality, perceived value and image (Grigoroudis & Siskos, 2004; Turkyilmaz & Ozkan, 2007). This review of literature is important in the development of the framework because in this study, students are treated as customers, although they assume more roles than just customers, which are not discussed in this paper.

A database of variables was recorded in an excel spreadsheet, and factors were then mapped to variables and finally to domains. The outcome from this mapping was a proposed framework on factors influencing international students' satisfaction (refer to Figure 1). The proposed framework captures five broad domains which include (a) academic internal environment, (b) non-academic internal environment, (c) external environment, (d) image, and (e) perceived value. The categorisation of domains was derived from theory of international student satisfaction and customer satisfaction. Each of the domains has variables to capture

factors that influence satisfaction. There were 39 variables, with 11 variables from academic internal environment domain, 11 variables from non-academic internal

environment domain, 13 variables from external environment domain, two variables each for image and perceived value.

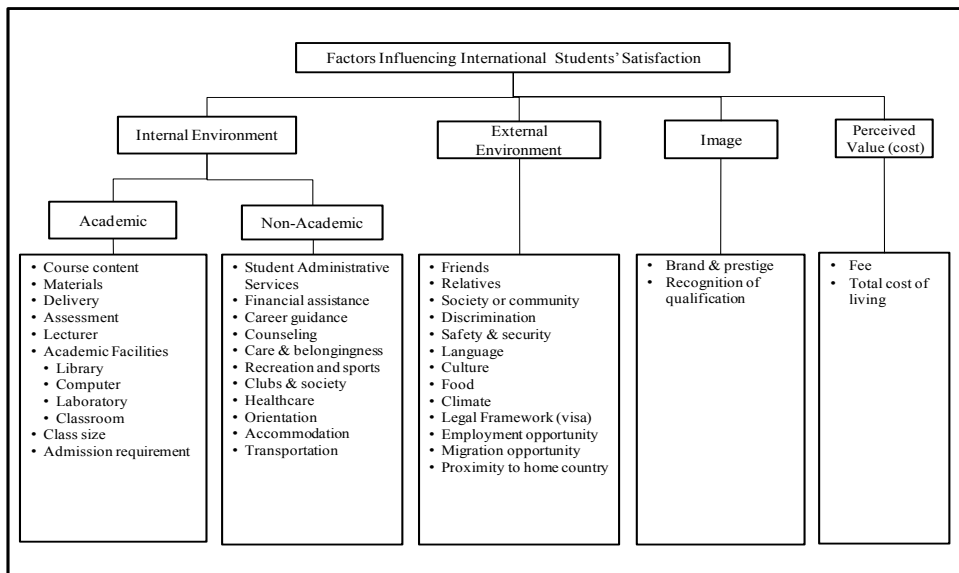


Figure 1. Proposed framework of factors influencing international students' satisfaction

Internal environment comprises two areas which are academic environment and non-academic environment (Bianchi & Drennan, 2011). Internal academic environment domain covers all educational services. It refers to teaching quality, study programme, teaching staff and method of instruction, engagement of teachers with students, academic performance of the students, industrial training, and other services and facilities related to teaching and learning, for example, computer laboratories and library facilities (Arambewela & Hall, 2006; Bianchi & Drennan, 2011; DeShields, Kara, & Kaynak, 2005; Douglas, McClelland, & Davies, 2008).

The internal non-academic environment domain includes other support services within the campus that are non-academic related, for example accommodation, security, student services, student clubs and society, orientation, transportation, gym, and attractive campus with shops (Arambewela & Hall, 2006; Bianchi & Drennan, 2011; Douglas et al., 2008; Mavondo, Tsarenko & Gabbott, 2004). The non-academic services form part of the overall student satisfaction as they utilise these services while on campus.

External environment includes the social and physical dimension outside the university campus (Arambewela & Hall,

2011). The notion that external environment plays a vital role in a student's satisfaction hinges on the time spent; it is almost one third outside the campus vicinity integrating into the host country's community. They take the forms of social relationship such as friendship patterns, discrimination, housing and accommodation, beautiful touristic attractions and good weather, and well organised and safe city with good customer service, transportation and medical services, experiencing a new culture, food and language, feeling welcomed and accepted by local people (Bianchi & Drennan, 2011). All these contribute to the entire experience and will impact the overall international students' satisfaction.

Image and reputation of a country and institution is a strong determinant of student satisfaction. Image refers to the brand name that adds prestige to the students through the international recognition of their degrees at home. Temizer and Turkyilmaz (2012) found that image has a positive effect on student satisfaction and loyalty.

Perceived value is the "perceived level of service quality relative to the price paid by students" (Temizer & Turkyilmaz, 2012 p. 3804). Variables in this domain include tuition fee and total cost of living at the host country.

METHODS

Variables identified from the literature are secondary data. To verify the framework, the researchers opted for interview to collect primary data because interviewing

is sometimes the only way to get data from source (Merriam, 2009). Hence, a one-to-one interview with international students in Malaysia was the direct source of data to verify the framework. The methodology and data collection is discussed in detail in the following paragraphs.

Sample Size

The determination of the total number of interviewees was based on past research of similar nature by following researchers such as Arambewela (2003); Clemes, Gan and Kao (2008); LeBlanc and Nguyen (1999). These researchers interviewed students within the range of 11 to 16 interviewees. The 20 interviewees in this study is a justified number as compared to previous researchers who had a maximum of 16 international students to interview.

Selection of Sample

In this study, undergraduate international students who have enrolled at private universities were selected as samples because more than 70% of international students (refer to Table 1) were enrolled to study at private higher education institutions (PrHEI). Based on the data of enrolment of international students from 2008 to 2013 (Department of Higher Education, Ministry of Education Malaysia), 48% of international students were pursuing their bachelor degree. Thus, the samples for this study were undergraduate international students from second, third or final year

because they had longer experience in the learning and living environment compared to first year students (Mavondo et al., 2004).

Data Collection

The interviewees were reached through recommendations of personal contacts from different institutions and referrals from other international students. Invitations to prospective interviewees were sent either through email or telephone short message services (sms). Once the interviewee agreed to participate, a consent form was given to accept the terms and conditions that entailed the study. Semi-structured interview questions were asked, and the interview process was audio recorded. A total of 20 international students from 11 private universities located in the Klang Valley were interviewed. The majority of interviews were conducted at the respective campus with a few at shopping malls. Each interview lasted 60 to 90 minutes. The transcriptions of the interview were given to interviewees to verify. The interviews were conducted for the duration of six months, from November 2014 to April 2015.

Profile of Interviewees

The 20 international students who were interviewed came from 14 different countries. They were between the age of 18 and 34.

About 60 percent of the interviewees were males and 40 percent were females. All of them were single except two male students. Half the students were enrolled in science, technology, engineering, and mathematics (STEM) programmes, while the rest were enrolled in social sciences and humanities programmes. All were self-funded to study in Malaysia except one student who was on government scholarship. The interviewees were of diverse religious backgrounds including Islam, Buddhism, Hinduism and Christianity. They stayed in areas such as Kajang, Pusat Bandar Damansara, Petaling Jaya, Cheras, Cyberjaya, Subang Jaya, Puchong and Kota Damansara, which are all near their campuses.

ANALYSIS OF DATA

The transcribed scripts and notes taken during the interviews were analysed. Similar words or meanings identified were grouped into factors according to the domains. An excel file database was created to record the factors according to the five domains: (a) academic internal environment, (b) non-academic internal environment, (c) external environment, (d) image, and (e) perceived value. Subsequently, comments from interviewees were grouped into respective factors (refer to excerpt in Figure 2). Table 2 shows examples of comments from interviewees according to domains.

A. AcaIntEnv	
A1 Course Content	
P1	Course content - OK, enjoy some elective subjects
P2	Course content- quality of education-international course content
P4	Course content - good & international, use international textbook
P5	Course content - lecturer cover 100% syllabus
P6	Course content - academic very good. UK standard
P7	Course content - subjects are interesting
P8	Course content - affiliation with Lancaster University, UK.
P9	Course content - is good but can be improved
P10	Course content - 80% happy; some content seems not relevant, repeating
P12	Course content - good learning experience, media law - understand Malaysia media law.
P17	Course content - as what I expected, I only expect lecturer to give me guidance. I only rely 50% from university and 50% from own self.
P18	Course content - university teaches simple thing (basic), we need to improve (learn more) by ourselves.
P20	Course content - not strong, simpler than high school.

Figure 2. Example of comments from interviewees in factors

FINDINGS

At the end of the interview, interviewees were given the opportunity to view the proposed framework and to confirm and suggest other factors that might influence their satisfaction. All interviewees confirmed all the variables that would influence their satisfaction. All variables confirmed by the interviewees were captured in the proposed framework (refer to Figure 1). The following are additional variables suggested by interviewees and are presented in this report according to domains.

Academic Internal Environment

There are three additional factors and sub-factors suggested by the interviewees:

English as Medium of Instruction

Interviewees highlighted that some lecturers used Malay language in the class. Interviewees P1, P4 and P5 responded that some lecturers taught in English. However, they had Malaysian accent that made it difficult for foreign students to understand.

Sub-Factor for Lecturer: Diversity of Lecturers

Interestingly, interviewee P7 believed that having more lecturers from diverse nationalities may help to give international exposure to her learning experience. This is under the sub-sector of the factor "lecturer" in the original proposed model.

*Sub-Factor for Delivery of Lesson:
Industrial Visit*

The method of delivery is also important as learning is not merely confined to the classroom setting. Interviewee P18 expressed hope that lecturers would organise industrial visits as part of the learning experience. This is an addition to the sub-factor in the delivery of lesson.

Non-Academic Internal Environment

Through these interviews, interviewees offered invaluable input on the factors that influence their satisfaction under the non-academic internal environment domain. These include location of campus, diversity of student population and physical building on campus.

Location of Campus

Interviewees P11 and P17 viewed location of campus as an important factor influencing their satisfaction. P11 highlighted that the campus is convenient and it is near the airport. Meanwhile, interviewee P17 equated the location of his campus, which is in the state of Selangor, to be in the heart of Malaysia – a location where he can easily connect with his activities and enables him to meet the needs of his family. P9 shared that the location of his campus is good. He enjoyed both the quietness of living in places like Cheras and the happenings in Kuala Lumpur city centre and *Mid Valley* shopping mall.

Diversity of Student Population

One of the reasons some international students chose to leave their country to study abroad was to gain international experience (Mazzarol & Soutar, 2002). Interviewee P5 highlighted that he would prefer to study in an institution that has more international student population where he can socialise with people from various nationalities and this will definitely enhance his study and living experience abroad. Meanwhile, P15 voiced out that diversity of student population on campus is important particularly in clubs and societies, where one can get acquainted with people of different nationalities and benefit for one's personal development.

Physical Building

Interviewee P20 indicated that his institution was operating in office buildings, which did not have the infrastructure to operate as a university. He further commented that it is important to experience the physical learning environment as a “university environment.”

External Environment

There are many additional factors suggested by interviewees that fall under the external environment domain. This is not surprising as students spend almost 30 percent of their time outside the campus environment (Arambewela & Hall, 2011).

Places of Worship / Practice of Religion

Interviewees of different religions, P1, P16, P17 and P19 who are Muslims, P4 a Christian and P7 a Hindu highlighted that it is easy for them to participate and practice their religions in Malaysia. They are able to find their respective house of worship, that is, mosque, temple and church. In particular, Muslim students mentioned that the environment in Malaysia has made it easy for them to live as Muslims, for example in the month of Ramadhan, they have easy access to places to pray like surau, halal food and other consumables. However, P7 did highlight that vegetarian food is difficult to find.

Public Transportation

Malaysia has many places of attraction, however, the lack of public transport to these places has made it difficult for participant P4 to visit these places. Thus far, she had been able to only visit places of attraction if driven by her local friends. If the public transport system improved, it would increase her mobility in visiting more places of attraction in Malaysia.

A pertinent factor in public transport is the taxi service in Malaysia. Interviewees P5, P6, P7, P8, P11, P14, P16 and P18 revealed that they had bad experiences during their taxi rides. Among the problems encountered included over charging by taxi drivers and non-usage of the meter.

On the other hand, P9 is happy with the taxi services in Malaysia. For him, taxis in Malaysia are clean and cheap. He related an incident when once, a taxi driver returned

his friend's hand phone that had been left in the taxi.

Places of Attraction

As found by other researchers (Koe & Saring, 2012; Mazzarol & Soutar, 2002), places of attraction is one of the factors when choosing a study destination. This study confirms this finding. P2, P5 and P7 highlighted that they like the greenery found in Malaysia and P1 found Malaysia to be a beautiful country. P11 who came from a hot desert climate really enjoyed the cool breeze of the highlands in Malaysia, and has visited Genting Highlands and Cameron Highlands with his family.

P4 said she hopes to visit places of attraction while staying and studying in a country. She commented that some of her contemporaries from her home country choose a particular destination of study based on the attractions of the host country. P18 added that he would be happy if the institution could plan and arrange visits to tourist destinations in Malaysia. Thus, the findings reveal that places of attraction in a country will also affect the overall satisfaction of international students.

Government-to-Government Relationship (G2G)

P17 highlighted that G2G relationship would help to increase his satisfaction. He believed that when both governments are in good bilateral relationship, more opportunities would open up for both countries. For example, it will be good to increase the mobility of students for both countries. It

will make things easier for them to live in Malaysia. P4 mentioned that she would feel more secure when both governments are on bilateral terms.

Accommodation

Majority of the interviewees (14/19 = 74%) stayed out of campus. Many (P11, P12, P16, P18) found the rental outside the campus to be cheaper compared to staying on campus. Besides the cost, other reasons for staying out are they can cook (P2, P12, and P8) and have more freedom as they do not need to comply with rules imposed by the campus, for example, curfew hours. They also feel more at home and comfortable (P8, P18). Those with family such as P17 and P19 stated that staying outside campus was preferred as they could meet the needs of their family. P1 stated that some landlords charged higher rates to Africans and it is more difficult to rent if you are male international student. In response to that, P6 added that it is also more difficult to find a place to rent if you are black.

Sub-Factor for Legal Framework

Student visa issued by the Malaysian government allows international students to work part-time if certain conditions are complied with. One of the conditions is the student can only work during the semester break or term holidays that exceed seven days. Interviewees P5 and P10 raised their concern that if they were given the flexibility to work during the semester, it would highly improve degree of satisfaction.

Image

University Ranking

Aside from recognition of qualifications, whether in home country or worldwide, P9 strongly felt that the image of an institution is influenced by university ranking. He added that the university's image could be alleviated if the institution shows effort in constant improvement.

Perceived Value (PV)

Personal International Living Experience and Exposure

The perceived value is not limited to the total cost of both tuition fees and cost of living against qualification obtained. In fact, some interviewees believed that their satisfaction lies in their experience living abroad. For example, P1 is happy to experience living abroad and to have insights into Malaysia. While P5, P8, P9 and P19 experienced multi-cultural and diversity of the Malaysian society, which added to their personal development gained through international experience.

Description of Factors

Besides verifying the factors and new factors identified during the interview, interviewees also contributed significantly to the description of some factors. These descriptors will be used as part of the input to construct survey questionnaire for the subsequent research work, the development of MISS-Model. Table 2 is an example of descriptors for one factor in each domain.

Table 2
Example of description of factors in domain

Domain	Factor	Description
Academic Internal Environment	Lecturers	Approachable, good at English, helpful, fair, provide feedback, punctual, qualified, knowledgeable, competent in teaching, open-minded, caring, has sense of humour, has two-way communication
Non-Academic Internal Environment	International Office and Admin Staff	Competency of staff, informative, staff attitude, helpful, must have good command of English, cooperative, understanding, efficient, reliable, caring
External Environment	Food	Easy to find food, problem getting vegetarian food, lovely food and reasonable price, a lot of <i>halal</i> food
Image	Brand	View their university and its affiliation of having good image and reputation, proud to be in the institution of learning
Perceived Value	Fee	Reasonable, affordable, expensive, flexible payment term, increases over the year

Improved Framework

The findings from this study have provided valuable input to improve the proposed framework of factors influencing international students' satisfaction. The improved framework has the five domains with a total of 58 variables compared to

39 variables in the initial framework. A total of 19 new variables were suggested by interviewees. Figure 3 is the improved proposed framework of factors influencing international students' satisfaction in cooperating with the 19 new variables.

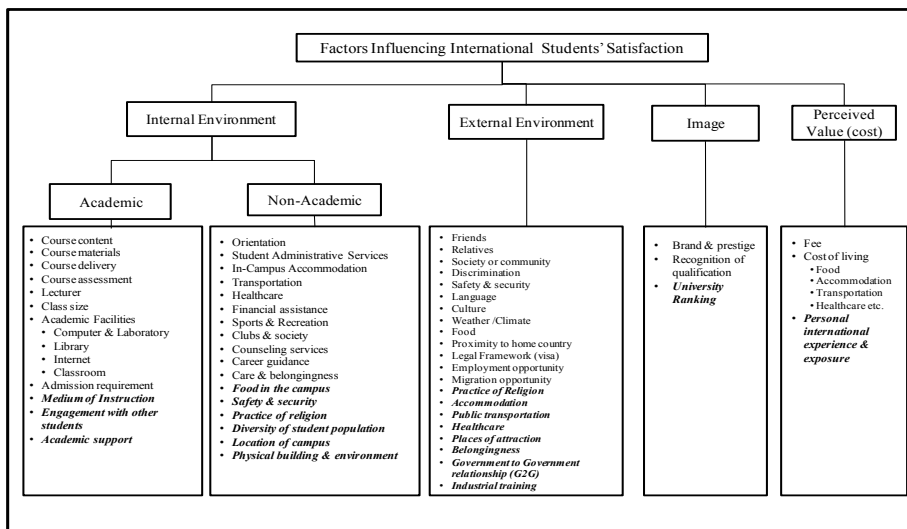


Figure 3. Improved proposed framework of factors influencing international students' satisfaction

Validity of Factors

Member check technique was used to validate the data. A total of 10 international students from a private university were invited to validate the factors. It was conducted between July and August 2015 as part of a pre-test process before pilot study of subsequent research using a survey questionnaire. It was part of the MISS-Model development process.

LIMITATIONS AND RECOMMENDATIONS

All the interviews were conducted in the Klang Valley. Hence, the findings on external environment domain may be similar. The majority of the samples are staying in urban communities, therefore, the society and infrastructure have almost identical environments. It would be interesting to also extend the interview with international students who study in campuses located in a smaller city.

It is recommended that the factors verified and identified, together with the descriptors from each factor be used in the development of survey instrument. This approach is consistent with many other similar research endeavours on students' satisfaction (Aldridge & Rowley, 1998; Arambewela, 2003; Brown & Mazzarol, 2009; Clemes, Gan, & Kao, 2008; LeBlanc & Nguyen, 1999; Sadiq & Mohammad, 2003; Siti, Abdul, & Rohaizat, 2010).

This improved framework needs to be tested statistically. Hence, a larger scale survey can be conducted to gather

more feedback from the population. With a larger sample, the survey may explore the relationships among the domains and factors that influence international students' satisfaction.

CONCLUSION

This study has confirmed the initial proposed framework of factors influencing international students' satisfaction and in addition, has found new influencing factors in all the five domains. Among the additional factors are diversity of lecturers and student population, location of campus, practice of religion, public transport, places of attraction, G2G relationship, university ranking and others. With that, the framework has been improved and revised to reflect a more comprehensive framework based on the context of Malaysia. This framework provides important input for the development and modelling of MISS-Model.

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The Development and Validation of Preliminary Scale to Assess Affiliative Oriented Organisational Citizenship Behaviour

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ABSTRACT

Affiliative oriented organisational citizenship behaviour (OCB) refers to teachers' voluntary acts in exhibiting helping behaviours towards students, colleagues, and schools. This paper sets out to discuss, in detail, how this study developed the Affiliative Oriented Organisational Citizenship Behaviour Scale (AOCBS) to measure teachers' behaviour in forming OCB. In this study, a conceptual model for affiliative oriented OCB was built based on extensive literature review and served as a guideline in generating an initial set of 14 new items. Content validity was assessed by two academic supervisors and five experts in human resource, education, and psychometrics. Reviews by academic supervisors revealed three items that need to be refined to provide clarity to respondents. Furthermore, the expert review suggested removing six items due to low content validity index ($CVI < 0.80$). Thus, only eight items were retained as they represent the content specification. Future research is required to assess the construct validity and reliability of AOCBS, which will provide empirical evidence on the reliability and validity of this new instrument. AOCBS has the potential to measure and evaluate affiliative oriented OCB among teachers.

Keywords: Affiliative oriented organisational citizenship behaviour, content validity, helping behaviour, item generation, scale development, teacher

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INTRODUCTION

Organ (1988, p. 4) defined organisational citizenship behaviour (OCB) as "individual behaviour that is discretionary, not directly or explicitly recognised by the formal reward system and that in the aggregate promotes the effective functioning of the organization." In other words, OCB

refers to employees' voluntary acts that will enhance their work performance, and help the organisation operate more efficiently, as well as ensure the success of the organisation (Ehrhart, Bliese, & Thomas, 2006; Greenberg, 2010; Nasir et al., 2011).

School as an educational organisation can no longer depend on teachers' prescribed jobs to ensure its efficiency (Switala, 2012), especially when Malaysia aims to be a developed high-income country. World Bank (2013) has reportedly urged developing countries to emphasise on quality education as it is crucial in developing first-class human capital and sustainable economic growth, lest Malaysia will risk falling behind in terms of education competitiveness and human development. These demands have led to insufficient teachers' formal roles and schools need teachers who are willing to exhibit extra-role behaviour in order to enhance students' academic performance. Expectedly, teachers' willingness will lift the quality of education in Malaysia (Khalid, Jusoff, Othman, Ismail, & Rehman, 2010).

Despite the importance of teachers' OCB in enhancing the quality of education and school effectiveness (Burns & DiPaola, 2013), scholars still struggle to develop a reliable and valid measurement of teachers' OCB (Somech & Oplatka, 2014) due to the overlapping issues of OCB dimensions (Van Dyne, Cummings, & McLean Parks, 1995). Thus, this study aims to develop a reliable and valid instrument to assess teachers' OCB, specifically the affiliative oriented OCB.

Overlapping OCB Dimensions Issues

Organisational citizenship behaviour concept has been known for almost three decades. However, scholars (DiPaola & Tschannen-Moran, 2001; Van Dyne et al., 1995) are still debating its dimensionality (Somech & Oplatka, 2014). Scholars still cannot find consensus on OCB dimensions because scholars often self-claim that their dimension is the latest developed OCB dimension and has led to overlapping dimensions of OCB.

For example, Organ's (1988) altruism and courtesy, Williams and Anderson's (1991) OCB-I, George and Brief's (1992) helping others, and Van Scotter and Motowidlo's (1996) interpersonal facilitation actually overlap and fall into the helping behaviour category. In educational context, scholars such as DiPaola and Tschannen-Moran (2001); Somech and Drach-Zahavy (2000) argued over OCB dimensions even though Van Dyne et al. (1995) claimed the dimensions of helping behaviour OCB should fall into affiliative oriented OCB. DiPaola and Tschannen-Moran (2001) provided empirical evidence that Somech and Drach-Zahavy's (2000) dimensions of teachers' OCB, namely the OCB toward students, OCB toward the team, and OCB toward school, actually fall into one dimension labelled as helping behaviour.

LePine, Erez and Johnson (2002) claimed that the scholars' eagerness to develop new indistinct dimensions of OCB might be guided by a misconception of the earliest concept of OCB introduced

by Organ (1988). This misconception has led researchers to put more emphasis on helping behaviour form OCB (Van Dyne et al., 1995). Furthermore, LePine et al. (2002) asserted that Organ's (1988) dimensions of OCB such as altruism, conscientiousness, sportsmanship, courtesy, and civic virtue should be categorised into a latent construct termed as helping behaviour. This notion is supported by Podsakoff, Whiting, Podsakoff and Blume (2009). They affirmed that the earliest conceptualisation introduced by Bateman and Organ (1983), Organ (1988) and Smith, Organ and Near (1983) over emphasised helping behaviour.

Due to this issue, Van Dyne et al. (1995) extensively reviewed the extra-role behaviour literature. Based on their reviews, it is inferred that OCB dimensions should be distinguished based on oriented behaviours namely the affiliative oriented OCB (helping behaviour) and change oriented OCB. Following Van Dyne's et al. (1995) suggestion, OCB dimensions which represent helping behaviour and maintaining status-quo should be categorised as affiliative oriented OCB. Thus, this study attempted to develop affiliative oriented OCB which consists of helping behaviour and maintaining status-quo.

Affiliative Oriented OCB

Van Dyne et al. (1995) suggested that affiliative behaviour comprises passive behaviours such as interpersonal, cooperation, and status-quo maintenance which preserve the harmonious relationship in an organisation. In this study, affiliative oriented OCB defines teachers' discretionary extra-role behaviours as helpful and cooperative (Motowidlo, 2000; Organ, 1997).

Somech and Drach-Zahavy (2000), as one of the earliest scholars interested in examining teachers' OCB, highlighted that teachers' OCB must be directed towards students, colleagues, and school, in order to address the globalisation and education reform. Even though Somech and Drach-Zahavy (2000) view teachers' OCB as multidimensional, their dimensions are actually uni-dimensional because they represent affiliative oriented OCB (DiPaola & Tschannen-Moran, 2001). Review on OCB literature has led this study to group the overlapping behavioural forms of affiliative oriented OCB and categorise them into three sub-themes based on Somech and Drach-Zahavy's (2000) suggestion as shown in Table 1.

Table 1
Behavioural forms of affiliative oriented OCB

Sub-themes	Behavioural forms of affiliative oriented OCB
Helping students	<ul style="list-style-type: none"> • OCB toward students (Somech & Drach-Zahavy, 2000) • Community orientation by helping (Hussin & Chin, 2014) • OCB directed towards pupils (Oplatka, 2006) • OCB in school (DiPaola & Tschannen-Moran, 2001)
Helping colleagues	<ul style="list-style-type: none"> • Altruism (Kamil, Sulaiman, Osman-Gani, & Ahmad, 2014; Organ, 1988; Smith et al., 1983) • Generalised Compliance (Smith et al., 1983) • Conscientiousness (Farh, Earley, & Lin, 1997; Organ, 1988) • Courtesy (Organ, 1988) • OCB that benefits individuals (OCBI) (Williams & Anderson, 1991) • OCB towards team (Somech & Drach-Zahavy, 2000) • Helping co-workers (George & Brief, 1992) • Interpersonal helping (Moorman & Blakely, 1995) • Interpersonal facilitation (Van Scotter & Motowidlo, 1996) • Helping and cooperating with others (Borman & Motowidlo, 1997) • Altruism toward colleagues (Farh et al., 1997) • Helping behaviour (Podsakoff, MacKenzie, Paine, & Bachrach, 2000) • OCB in school (DiPaola & Tschannen-Moran, 2001) • Sportmanship as an interpersonal and protective OCB (Moon et al., 2004) • Helping co-workers (Farh, Zhong, & Organ, 2004)
Helping others	<ul style="list-style-type: none"> • Sportmanship (Organ, 1988; Podsakoff et al., 2000) Civic virtue (Kamil et al., 2014; P.M. Organ, 1988; Podsakoff et al., 2000) • OCB that benefits and focus on organisation (OCBO) (Williams & Anderson, 1991) • Protecting the organisation (George & Brief, 1992) • Spreading goodwill (George & Brief, 1992) • Functional participation (Van Dyne, Graham, & Dienesch, 1994) • Social participation (Van Dyne et al., 1994) • Persisting with enthusiasm and extra effort as necessary to complete own task activities successfully (Borman & Motowidlo, 1997) • Volunteering to carry out task activities that are not formally part of own job (Borman & Motowidlo, 1997) • OCB toward organisation (Somech & Drach-Zahavy, 2000) • Sportmanship as an interpersonal and protective OCB (Moon, Van Dyne, & Wrobel, 2004) • Group activity participation (Farh et al., 2004) • Promoting company image (Farh et al., 2004) • Protecting and saving company resources (Farh et al., 2004, Farh et al., 1997) • OCB directed towards the staff (Oplatka, 2006) • OCB directed at school level (Oplatka, 2006)

METHODS

Development of Affiliative Oriented OCB Scale

This study sets out to develop affiliative oriented OCB Scale by adapting the procedures suggested by scale development

experts such as DeVellis (2003), MacKenzie, Podsakoff and Podsakoff (2011), and Netemeyer, Bearden and Sharma (2003). As the development of AOCBS is still in its preliminary stage, this study only discusses the first three steps involved in AOCBS development as shown in Figure 1.

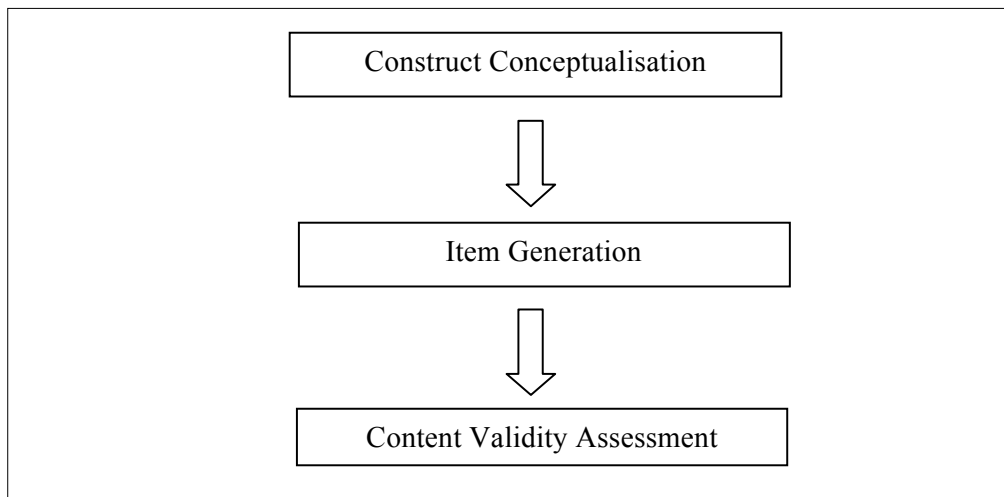


Figure 1. Preliminary development of AOCBS

Construct Conceptualisation

According to Slavec and Drnovšek (2012), conceptualisation of construct is crucial to ensure the generated items represent the construct being studied. In the first step of AOCBS preliminary development, affiliative oriented OCB as the domain associated with this construct, was specified by providing an operational definition and developing a conceptual model. Based on Motowidlo (2000) and Organ (1997), affiliative oriented OCB refers to teachers' willingness to exhibit helping behaviour in school organisation. Specifically, Somech and Drach-Zahavy (2000) refer to OCB in school as OCB

directed towards students, colleagues, and schools. Based on Motowidlo (2000); Organ (1997) and Somech and Drach-Zahavy's (2000) definitions, the operational definition of affiliative oriented OCB in this study is teachers' willingness to exhibit helping behaviour towards students, colleagues, and others (school).

Based on review of literature, this study suggests a conceptual model for affiliative oriented OCB as shown in Figure 2, consisting of three sub-themes; helping students, helping colleagues, and helping others. This conceptual model was used as the basis for the development of AOCBS.

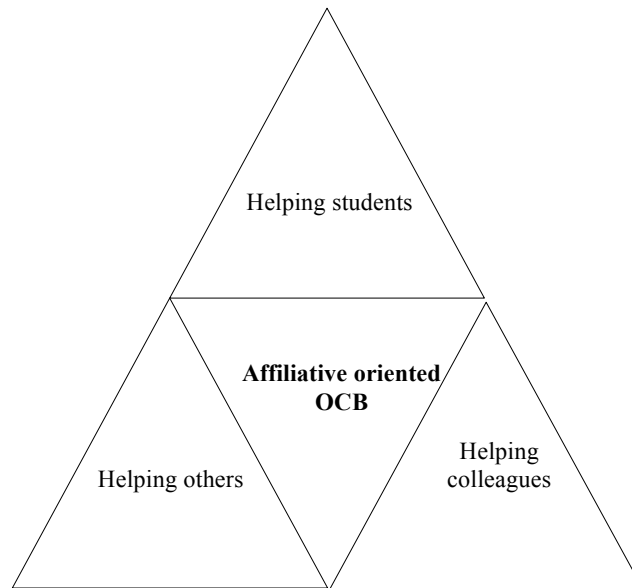


Figure 2. Conceptual model of affiliative oriented OCB

Item Generation

In the second step of AOCBS development, the list of possible items that capture affiliative oriented OCB were generated based on extensive literature review on the dimensions of helping students, helping colleagues, and helping others. The list was compiled by adapting and adopting the existing scales, and creating suitable items that appear to fit the operational definition of affiliative oriented OCB.

The process has created item pools for affiliative oriented OCB. A larger set of items were then compared with each other to identify duplicate items. Items with similar meanings were screened to ensure there was no redundancy and selection of items that best capture the domain of affiliative oriented OCB. Items that did not fit the affiliative oriented OCB and its dimensions

were deleted. Once again, the selected items were screened for language appropriateness. Ambiguous and double-barrelled items were restructured to provide comprehensiveness to respondents. Items that were originally developed in non-educational context were revised to better suit the educational context. Additionally, the items were also rewritten to reflect the context of a self-administered instrument.

The final pool of items consist of 14 items that are consistent with the operational definition and conceptual model of teachers' affiliative oriented OCB. According to DeVellis (2003), a pool of items could act as a safeguard if some of the items need to be deleted in the next step, which is the content validation assessment. Table 2 shows 14 items in which the contents were validated by academic supervisors and a panel of experts.

Table 2
Items for affiliative oriented OCB

Dimension	Sub-dimensions	Number of items	Items	Sources
affiliative oriented OCB	1. Helping students	6	1. I take extra effort to give large quantities of homework that is not made compulsory by the school and marking the homework thoroughly in order to help students achieve academically	Oplatka (2006)
			2. I stay after school hours to help students with lesson materials	Somech and Drach-Zahavy (2000)
			3. I conduct extra classes to enhance students' academic achievement	Hussin and Chin (2014)
			4. I keep thinking about students' problems even after formal working hours	Oplatka (2006)
			5. I am sensitive to students' behavioural change	Oplatka (2006)
			6. I teach students during school holidays	Hussin and Chin (2014)
	2. Helping colleagues	4	7. I assist absent teachers with their tasks	Somech and Drach-Zahavy (2000)
			8. I help colleagues handle their personal crisis	Oplatka (2006)
			9. I share my self-developed teaching aids and learning materials with colleagues	Somech and Drach-Zahavy (2000)
			10. I prepare learning programmes for substitute teachers	Somech and Drach-Zahavy (2000)
	3. Helping others	4	11. I assist my principal with his or her work	Williams and Anderson (1991)
			12. I go to school on school holidays to decorate the school	Somech and Drach-Zahavy (2000)
			13. I volunteer for the school committee	Somech and Drach-Zahavy (2000); Hussin and Chin (2014)
			14. I willingly use my own money in helping the school organise programmes	DiPaola and Tschannen-Moran (2001)

Content Validation Assessment

The final step in the development of preliminary AOCBS is content validation assessment. According to Hinkin (1998), content validation serves as a pre-test to ensure only the best items that represent the content domain are retained. In the following section, the two stages of expert judgement as suggested by Netemeyer et al. (2003) were used; content validation by academic supervisors and content validation by a panel of experts will be discussed.

In the first stage, the generated items were subjected to content validity assessment by academic supervisors. The assessment was conducted through a qualitative procedure in which the academic supervisors provided writing comments on items that needed to be refined or deleted. In addition, both, academic supervisors were requested to provide writing comments on representativeness, relevance, clarity, arrangement, and suitability of the items in the context of Malaysian education. This was to ensure any unrelated item was excluded from the AOCBS. Academic supervisors were also requested to suggest items that failed to be included in the earlier generated set of items. Subsequently, one on one discussions with both academic supervisors were conducted to obtain their verbal feedback on the items that required revision. At this stage, none of the items was deleted, making all 14 items subjects for the second stage validation by the panel of experts.

In the second stage, items were subjected to content validation by a panel

of five experts. Expert selection was based on their experience in the fields related to the development of AOCBS. Their expertise was identified through their curriculum vitae in the respective official website of their institution of higher learning. Emails were sent to invite five senior lecturers with at least 10 years of experience in human resource development, educational management, and psychometrics to validate the items. Once they expressed agreement, a validation package containing a cover letter, operational definitions of construct and sub-constructs, and items to be validated were emailed to them.

In comparison to the earlier stage of validation assessment by academic supervisors, this stage employed quantitative and qualitative procedures to assess the representativeness and suitability of the items in the Malaysian field of education. Firstly, the quantitative procedure was employed to assess content validity by calculating the Content Validity Index (CVI) for each item from 1 = not relevant to 4 = highly relevant (Rubio, Berg-Weger, Tebb, Lee, & Rauch, 2003). CVI for each item was calculated by dividing the number of experts who rated 3 or 4 with the total number of experts in this study. Items with CVI of less than 0.80 was considered for deletion (Davis, 1992). Next, the experts were requested to provide writing feedback or suggestions on the clarity and suitability of the items. Discussions via face-to-face, telephone, and email were carried out with the experts. Items were then modified wherever necessary based on the experts' feedback.

RESULTS

Content Validity Assessment by Academic Supervisors

At this stage, none of the items was deleted, but review by the academic supervisors suggested revision on three items (item 1,

2, 10). Based on one-on-one discussion with the academic supervisors, the items were revised to provide clarity to the respondents in understanding the items. Comments by academic supervisors are provided in Table 3.

Table 3
Revised items in response to comments from academic supervisors

Sub-dimensions	Items	Comment from academic supervisors	Action taken	Revised items
1. Helping students	1. I take extra effort to give large quantities of homework that is not made compulsory by the school to help them achieve academically	Complicated	Revise	I assign extra homework to students on my own initiative
	2. I stay after school hours to help students with lesson materials	Ambiguous	Revise	I stay after school hours to assist students academically
2. Helping colleagues	10. I prepare learning programmes for substitute teachers	Ambiguous	Revise	I prepare learning materials for substitute teachers

Content Validity Assessment by Panel of Experts

By using the content validity index equation as mentioned in the preceding section, six items, although deemed relevant by the academic supervisors, were found by the panel of experts to lack representativeness as the CVI for these items was 0, as shown in Table 4. According to Davis (1992),

items with a CVI of less than 0.8 should be considered for deletion because the items were less likely to capture the content domain. Thus, these six items were re-evaluated. After a discussion with the experts, the items were deleted. As a result, the AOCBS has a content of eight validated items.

Table 4
Deleted items in response to comments from panel of experts

Sub-dimensions	Items before content validation by panel of experts	CVI	Action taken
1. Helping students	4. I keep thinking about students' problems even after formal working hours	0	Deleted
	5. I am sensitive to students' behavioural change	0	Deleted
2. Helping colleagues	8. I help colleagues handle their personal crisis	0	Deleted
3. Helping others	11. I assist my principal with his or her work	0	Deleted
	12. I go to school on school holidays to decorate the school	0.4	Deleted
	14. I willingly use my own money in helping the school organise programmes	0.2	Deleted

DISCUSSION

The rigorous scale development procedures are vital to build a psychometrically sound instrument to ensure the information to answer the research questions of the study is valid and reliable (DeVellis, 2003; Netemeyer et al., 2003). This study describes the earlier steps in developing the Affiliative Oriented Organisational Citizenship Behaviour Scale (AOCBS).

The results from the two stages of content validation assessment yielded the final eight items that have undergone qualitative and quantitative validation procedures. The procedures revealed that affiliative oriented OCB in a school context comprises helping students, helping colleagues, and helping others. This implies that OCB in a school context should be viewed differently from an organisational context as stressed by DiPaola and Tschannen-Moran (2001). Furthermore, the results also indicated that the final eight items highly captured the content domain of affiliative oriented

OCB and was able to provide clarity to the respondents.

Even though content validity is subjective as it depends on the reviewers' opinions, the fact that the content validity assessment went through two stages of expert reviews and employed both qualitative and quantitative procedures of content validation suggests that AOCBS is comprehensive as it includes much of what needs to be covered in developing the AOCBS. The items in the AOCBS would be clearly understood as they have been refined to provide clarity to respondents, and are not redundant, making it a highly relevant AOCBS. Furthermore, as mentioned above, ambiguous items were refined and items that did not represent a constructive specification were deleted.

The result of content validation assessments also revealed that items from established scales still need to be refined to suit the Malaysian education context as the existing items were developed based on the Western context. This implies that

cross-cultural items will need to be validated before being employed to the multicultural Malaysian teachers who are not necessarily proficient speakers of English language.

In summary, this study showed that preliminary AOCBS, which has been developed to measure teachers' willingness to help students, colleagues, and others, has the potential to measure and evaluate affiliative oriented OCB among teachers as the preliminary scale is comprehensive and has been content validated.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

This study attempted to develop an Affiliative Organisational Citizenship Behaviour Scale that could be used to measure teachers' voluntary acts in helping students, colleagues, and others. As the development of AOCBS is still in its preliminary stage, the items were only subjected for content validation by academic supervisors and a panel of experts. Furthermore, the result of content validity is subjective as it depends on the reviewers' opinion.

Thus, it is recommended for future studies to gather further empirical evidence on the validity and reliability of AOCBS. As suggested by DeVellis (2003), Hinkin (1998), MacKenzie et al. (2011), Netemeyer et al. (2003); Slavec and Drnovšek (2012), besides content validation, the scale developer should conduct pre-tests, pilot tests, exploratory factor analysis, and reliability analysis on a newly developed scale to establish its validity and reliability.

As the items were developed in the English language, it is also suggested for future research to translate the items to Bahasa Melayu as it could provide a more accurate understanding for Malaysian respondents.

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The Evaluation of mLearning Implementation Model for English Language Learning via Fuzzy Delphi Method

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ABSTRACT

This paper introduces Fuzzy Delphi method as an educational tool to evaluate a technology-mediated education implementation model as part of a larger study. Specifically, the aim of the present study is to evaluate a mLearning implementation model as learning support for undergraduate students in formal language learning which was developed by the authors prior to this study. The study adopted the Fuzzy Delphi method to evaluate the model. Overall, from the findings presented in this paper, as the defuzzification values for all items in the questionnaire exceeded the minimum value of 33.6, the findings conclusively suggest that the participants have consensually agreed to all four aspects of evaluation of the model: 1) suitability of the elements (learning activities), 2) domain classification of the learning activities, 3) relationships among the learning activities, and 4) suitability of the model in teaching and learning activities in assisting students to fulfill their language learning needs and course outcomes. Thus, according to the participants or experts of the study, based on these aspects, the model is suitable to serve as a guide in the implementation of mLearning as learning support for undergraduate formal English language learning for *Professional and Communication Skills* course. The findings not only serve to introduce

mLearning implementation model for language learning but also contribute to how the Fuzzy Delphi method could innovate assessment and evaluation of technology aided learning initiatives like mLearning.

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INTRODUCTION

In the instruction of undergraduate language subjects, it is a major challenge for lecturers to provide meaningful language exposure to as many individual students as possible to develop their language competence, due to constraints as large class enrolments, but with limited time allotted for formal language classes. To add to the odds, most formal language instructions are still confined to the traditional drill and exercise principles. Mobile learning (mLearning) in language learning can be generally defined as a learning platform which is assisted by mobile devices and technologies which serve to facilitate social interaction ubiquitously in assisting learners to achieve their learning goals. Previous studies have supported the positive implication on students' language learning. For instance, Cavus and Ibrahim (2009) developed MOLT (mobile learning tool) and found that students were motivated in learning vocabulary through short message service (SMS) over their mobile device. Another study argued that the use of multimedia mediated through mobile devices successfully improved students' language skills (Saran, Cagiltay, & Seferoglu, 2008). In this study, mLearning was employed as a complementary tool to formal learning but the term 'to augment classroom learning' was more preferred (Quinn, 2011; Terras & Ramsay, 2012). In setting the perspective, classroom activities could be extended beyond the classroom anytime and anywhere, thus, allowing more opportunities for students to fulfill their learning goals according to their own pace.

The general aim of this study is to investigate how mLearning could be sustainably employed through the development of mLearning implementation model for an undergraduate English Language communication course. In this study, mLearning is defined as a set of learning activities via interaction, mediated through mobile technologies to augment language learning in assisting undergraduate language learners to achieve both target needs and language competency needs. The definition takes into account interaction as learning approach for language learning and language activities as an element of the model. The paper which is part of a larger study specifically presents the outcome of the evaluation of the English language mLearning implementation model (refer to Figure 1) (Abdullah, Siraj, & Hussin, 2014).

LITERATURE REVIEW

Past studies in mLearning have mainly focused on mobile devices, either in digital functions of mobile devices (Forehand, Miller, & Carter, 2017; Jackson, 2015), effectiveness of mobile devices in preparation of learning activities (Burton et al., 2015; Tseng, Tang & Morris, 2016; Vahey & Crawford, 2002), or mobile computer based project (Burke, Colter, Little, & Riehl, 2005). In Malaysia, aligned with the current mobile technology trend, the National Higher Education Strategic Plan (NHESP) has listed mLearning as one of the 23 Critical Agenda Projects (CAP), which is described as learning through enhanced portable technologies

such as mobiles and tablets (Pelan Strategik Pengajian Tinggi Negara [PSPTN], 2013). The country's support for mLearning through CAPs project and enhanced by the high degree of mobile communication device penetration in the country, especially among the present generation provides an ideal platform for mLearning opportunities. The Malaysian Communications and Multimedia Commission (2017) reported that for the first quarter of the year 2017, the mobile-cellular penetration was at 134 units for every 100 inhabitants, with a whopping 30.6 million units countrywide. However, despite the supporting factors above, mLearning is still at its infancy in Malaysia and research studies are critically needed in the area of mobile assisted education (Embi & Nordin, 2013). The main factor contributing to the slow pace in adoption of mLearning in this country despite the high accessibility to technology could be due to the scarcity of research studies in mLearning implementation areas. Most of the mLearning research for education in Malaysia to date has largely concentrated on perceptions (Hashim, Ahmad, Fatimah, & Rohiza, 2010), learners' satisfaction (Ismail, Gunasegaran, Koh, & Idrus, 2010), awareness (Alzaza & Yaakub, 2011), readiness (Ismail, Bokhare, Azizan, & Azman, 2013), learners' motivation (Narayanansamy & Ismail, 2012), and factors affecting mLearning acceptance (Yadegaridehkordi, Iahad, & Baloch, 2013). In order to take full advantage of mLearning in effective education delivery, research initiatives need to progress beyond

investigating perceptions, readiness, or attitudes of the present learners towards mLearning. It is undoubted that studies in these areas are useful, but since past studies have abundantly reported on positive acceptance towards mLearning adoption (Embi & Nordin, 2013), further studies in mLearning implementation should be the next initiative.

Local studies which have contributed to implementation of mLearning can also be found though limited to specific context. For instance, an investigation on usability guidelines for designing mLearning portal was carried out by Seong (2006), who proposed three categories of usability and 10 usability guidelines for highly efficacious, user friendly and usable mobile interface. In another study, Shuib (2009) proposed a mLearning curriculum design for Malaysian secondary schools which he designed for History lessons. These studies have described the examples on practical implementation of mLearning. However, the studies were conducted either in adoption of mLearning in techno centric view or mLearning as a learning content delivery medium. Although it has been found to be useful, with the path taken by these studies, there is a wide gap in mLearning studies in the context of mLearning as a learning solution, for example as support to a learning problem, which conventional learning is unable to resolve. The argument is that mLearning as a solution or as support to a learning problem could be more sustainable in its adoption, instead of becoming a learning

replacement to conventional learning. Consistently, Koller, Harvey and Magnotta (2008) stated that one of the main features of technology-based education is the emphasis on learning solutions and learning results as it is contextual and accessible to learners, especially whenever it is needed. Unfortunately, in the studies of mLearning in language learning, most of these studies have often focused on formal learning contexts where mobile devices are primarily regarded as learning content delivery media (Kukulska-Hulme & Shield, 2008). An example is an investigation on design and development of a collaborative mLearning module (DeWitt & Siraj, 2010), which addressed Malaysian secondary school learners' needs of the use of technology in science learning. Another pertinent point would be that findings at secondary school level would not be appropriate in the design and implementation of mLearning at tertiary level. This is because the level of sophistication between students at secondary and tertiary level is different due to the gap in cognitive levels. The education structure of secondary level is designed to general knowledge and skills to prepare students for higher education while tertiary education system is tasked to prepare students with advanced and specific hard and soft skills for the job environment. Thus, to fill the gap in mLearning implementation studies, focusing on the idea of mLearning as a learning solution in the form of learning support to help students in their language learning

needs, the mLearning implementation model for undergraduate English Language learning was developed in this study. This paper describes the study at the evaluation phase in validating whether the mLearning model of the study can be a suitable guide in implementing mLearning as learning support for undergraduate students in formal language learning.

Overview and Interpretation of the Model

Although the paper focusses on the study at the evaluation phase, it is pertinent to describe the interpretation of the model developed through the larger study to facilitate the base for discussion on the evaluation. With reference to Figure 1, the model was developed for the *Professional Communication Skills* course (PCS), which is a compulsory undergraduate English for Specific Purpose (ESP) course of a private tertiary engineering institution. The model consists of 24 learning activities, which is an integration of mostly informal mLearning activities and formal learning activities. Based on the findings of the larger study, the elaboration of each learning activity is given as follows:

1. *Attend in-class lectures on effective communication*

The experts consensually agree that this learning activity has to be included as physical face-to-face guidance from the lecturer.

2. *Access and listen to lectures about effective communication on podcasts through mobile devices*

In this learning activity, students are required to download in-class lectures on effective communication in the form of audio or audio-video formats to either listen or watch for information and reinforcement of learning.

3. *Search and browse for information on effective communication, language competence, and technical use of devices through mobile devices*

This learning activity involves students' initiatives to obtain supportive content and information for self or collaborative learning process to gain communication skills, improve language competence or get the best practices in technical mobile device use.

4. *Listening to or reading online micro information on effective communication, competence (grammar) or technical use of mobile tools and devices through 'push' technology via mobile devices*

This learning activity serves to complement learning activity 3. The difference between these learning activities is that learning activity 4 contains small learning content packages regulated by the lecturer or by the assigned content provider to push these learning packages from time to

time to students through their mobile devices.

5. *Develop mobile tags for information and knowledge on communication, language competence, and technical use of mobile devices via QR code or social bookmarking*

This activity is a collaborative effort among students to share information and knowledge through mobile tagging. QR (quick response) code or social bookmarking such as *Twitter* is a form of a mobile tag which enables students to develop and store information easily.

6. *Record and upload presentations to elicit comments from lecturers and peers via mobile devices*

This activity represents the main learning activity to aid students' effective learning output for the language communication course. Students can record trial presentations to be shared with other students and the lecturer to elicit comments to improve their presentation skills before being evaluated.

7. *Video conferencing with other students and/or the lecturer via mobile devices to improve communicative and competence skills*

This learning activity involves scheduled video conferencing among students or between students and the lecturer.

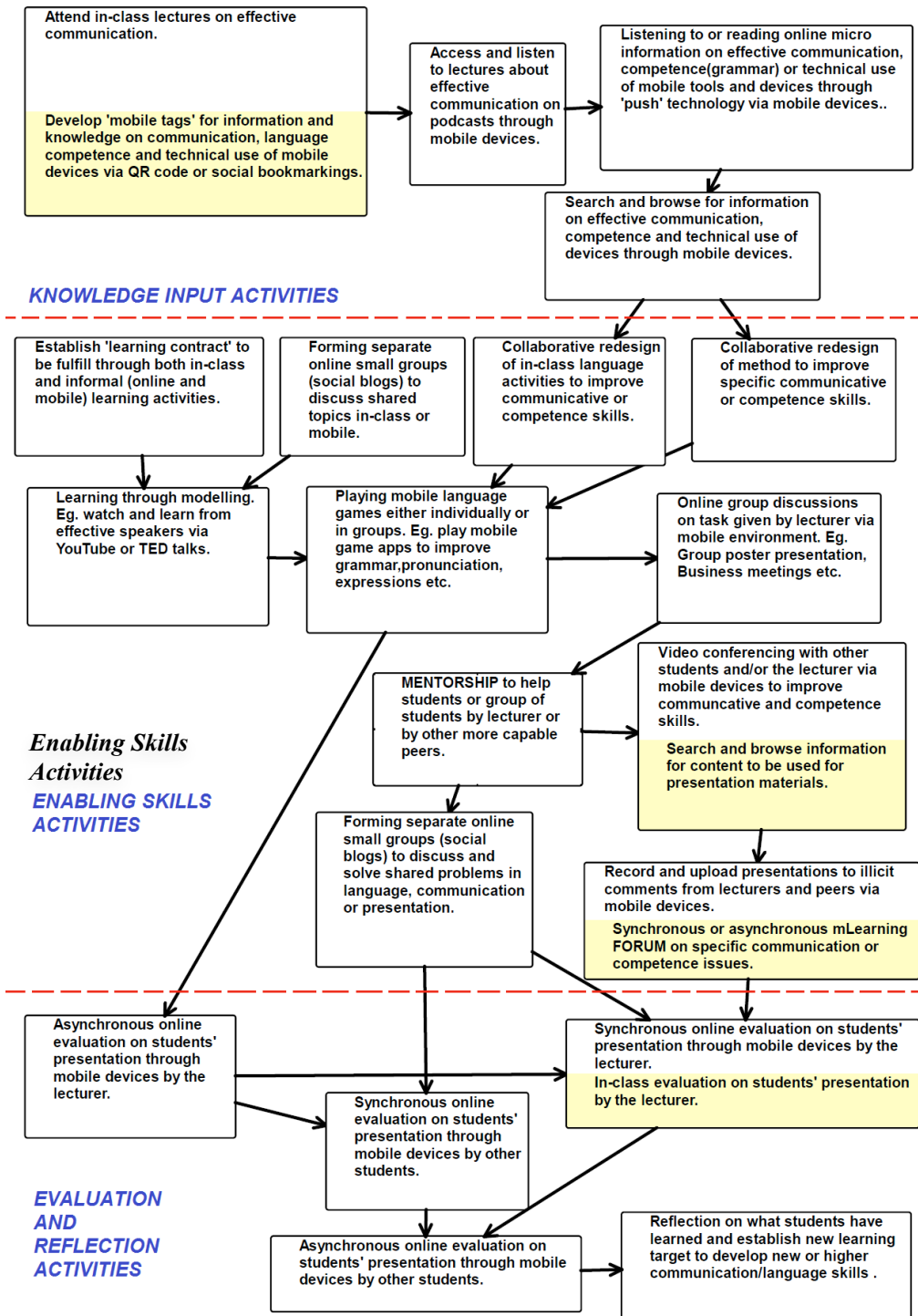


Figure 1. Interpretive Structural Modeling (ISM) based mLearning Implementation Model of Undergraduate English Language Learning for Professional and Communication Skills course (Abdullah, Siraj, & Hussin, 2014)

8. *Online group discussions on tasks given by lecturer via mobile environment, for example group poster presentation, business meetings*
Online group discussion opens up avenues for students to engage themselves in discussions on tasks or assignments given by the lecturer through mobile devices.
problems in language, communication skills, or presentation
This learning activity assists students in overcoming problems in language, communication, or presentation with the help of lecturer or more capable peers.
9. *Establish learning contract to be fulfilled through both in-class and informal (online and mobile) learning activities*
Although mLearning postulates learner-centered learning, a complete guide assisted by the course instructor or the lecturer is needed to regulate learners' learning process in the mobile context to achieve their targeted learning goals more effectively. Learning contracts can be developed and proposed by the students, assisted by the lecturer.
10. *Forming separate online small groups (social blogs) to discuss shared topics in-class or mobile*
As mLearning thrives on social and collaborative learning, this learning activity is proposed for students' collaborative knowledge construction through information sharing both in the physical and mobile environment.
11. *Forming separate online small groups (social blogs) to discuss and solve shared*
12. *Mentorship to help students or group of students by lecturer or by other more capable peers.*
This learning activity facilitates collaborative learning through scaffolding to assist students who are unable to achieve learning targets or overcome learning shortcomings on their own (Vygotsky, 1978, p. 86).
13. *Synchronous or asynchronous mLearning forum on specific communication or language competence issues.*
Synchronous forum session involves prescheduled slots where interested students may log in to an online forum scheduled at a specific time to discuss a particular topic. Asynchronous forum is a continuous forum similar to a blog where students can log in at any time to participate in discussions.
14. *Collaborative redesign of in-class language activities to improve communicative or competence skills*
This learning activity allows students to collaborate and modify their in-class language activities using their mobile

devices to improve their communication or competence in a more motivating way.

15. *Collaborative redesign of method to improve specific communicative or competence skills*

Similar to learning activity 14, students collaboratively modify ways to improve their communicative or competence skills using their mobile devices. With this learning activity, students are able to record a short video presentation of their own topic of interest and upload it online to elicit comments from other students and the lecturer via blogs or other social applications.

16. *Playing mobile language games individually or in groups, for example playing mobile game apps to improve grammar, pronunciation, expressions*

Experts believe this activity needs to be considered as part of students' learning experience, as long as careful selection of mobile games is in place. The lecturer may involve students in selection of games application to be downloaded on their mobile devices to aid their learning process.

17. *Learning through modeling, for example, watch and learn from effective speakers via YouTube or TED talk*

Most experts view this learning activity as necessary to be considered as part of students' learning experience where

students learn through good examples. For instance, students can learn quickly through short videos on the difference between conducting persuasive talks for general topics and technical ones.

18. *Search and browse information for content to be used for presentation materials*

This learning activity involves students searching and browsing the Internet for input for their presentation, either in the form of content or supporting effects to enhance the quality of their presentation slides such as background slides, slide transitions, latest statistical displays and others.

19. *Synchronous online evaluation on students' presentation through mobile devices by the lecturer*

This learning activity involves evaluation of students' learning output (for example, poster presentation) by the lecturer based on students' live presentation through social networks such as Skype or face-time video calls.

20. *Synchronous online evaluation on students' presentation through mobile devices by other students*

This learning activity is similar to learning activity 19 but the evaluation is conducted by the students. Students can be notified through 'push' technology to log in at the specified time of presentation and evaluate the presentation.

21. *Asynchronous online evaluation on students' presentation through mobile devices by the lecturer*

The experts view this type of evaluation as a continuous assessment on students' work, thus providing a more thorough assessment as the lecturer can repeatedly refer to the videos for any strength or weaknesses of the presentations which may be overlooked before finalising the evaluation marks.

22. *Asynchronous online evaluation on students' presentation through mobile devices by other students*

Similar to learning activity 21, students' learning output can be evaluated online by students, either in the classroom or through mobile devices.

23. *In-class evaluation on students' presentation by the lecturer*

Similar to learning activity 1, the experts view this learning activity to be included as institutional validity for formal education.

24. *Reflection on what students have learned and establish new learning target to develop new or higher language communication skills*

This learning activity is where students reflect upon what they have already achieved in their learning goals at a certain stage or stages. This helps students to chart their learning achievement to improve skills and

develop new learning targets parallel to the course outcomes.

Based on the model in Figure 1, the learning activities are connected to each other in a hierarchical manner based on pair wise technique. As suggested by the participants' input, the final model is divided into three sections or domains: knowledge input activities, enabling skills activities, and evaluation and reflection activities. Knowledge input activities that consist of learning activities 1 to 5 are activities that aid students in obtaining the necessary background information and knowledge about effective communication skills. However, knowledge input is not merely about delivery of content. In its early years, mLearning was adopted as a medium for content delivery (Kukulka-Hulme & Shield, 2008), but Quinn (2011) argued that the value of mLearning is learning which is facilitated through dynamic social interaction and this advantage needs to be exploited where learners can interact with other learners or resources. Through the concept of seamless learning anytime and anywhere, not only do learners access learning free from the boundaries of time and space, more importantly, they are able to reach out to other people and resources when it is needed most. This is the main capability of mLearning which supersedes other technology-based learning.

In complementing this concept, activities 9 and 10 promote establishment of communication among learners through online social blogs and learning contracts

as the initial platform for subsequent social learning processes. The enabling skills activities (learning activities 6 to 20) are the most important activities that the students engaged in to develop their communication skills through formal learning and mLearning. The evaluation and reflection skills activities (learning activities 19 to 24) are sets of activities to evaluate the students' language communication skills and for them to reflect upon their acquired skills - to further improve their skills or to develop new skills. The three domains are interconnected through their respective learning activities to form a holistic mLearning implementation model. For example, language activities 8, 16, and 17 rely on the conduct of activities 9 and 10. Language activities which are clustered in shared boxes (such as activities 1 and 5, 7 and 18, 6 and 13, and 19 and 23) suggest that these activities should be conducted in any sequence or concurrently and can complement each other).

METHODS

Fuzzy Delphi method is adopted for the evaluation of the model (refer to Figure 1) in this study because it is an established decision-making tool. Since evaluation of the model involves decision-making, the method is adopted. Another reason is that the method relies on experts' opinions in making decisions. Since the model has been developed using experts' views, it is compatible to use a panel of experts to evaluate the model too. Besides, Fuzzy Delphi method has also been used for

evaluation purposes in past studies, although it is widely used for planning, projections, decision-makings, and development. For example, the technique has been used in evaluating hazardous waste transportation firms (Gumus, 2009), evaluating battle tanks (Cheng & Lin, 2002), evaluating software development projects (Buyukozkan & Ruan, 2008), and evaluating public transport system (Hsu, 1999). In education, the method has been applied too. For example, Tarmudi, Anas Muhiddin, Rosdy and Tamsin (2016) applied Fuzzy Delphi in evaluating teaching effectiveness based on students' perspective. The authors reported that the method was very useful in dealing with the complexity of choosing the right teaching methods by lecturers.

In terms of the sample of the study, as the study applies the modified Fuzzy Delphi method, a panel of experts was chosen through purposive sampling to evaluate the model. A total of 48 experts were selected to evaluate and validate the model. In Delphi method, the most important step is the selection of experts as it affects the quality of the result of the study (Jacobs, 1996; Taylor & Judd, 1989). However, there is no standard criterion in the technique in the selection of experts (Kaplan, 1971). Thus, in setting the criteria for expert selection for a specific study, Pill (1971) and Oh (1974) stated that the experts should have some background or experience in the related field of study, be able to contribute opinions to the needs of the study, and be willing to revise their initial judgment to reach consensus among experts. Consistent with this,

Delbecq, Van de Ven and Gustafson (1975) proposed that qualified subjects for a Delphi study should consist of three groups: 1) the top management who uses the outcomes of the Delphi study, 2) professional individuals as staff members and supporting team, and 3) targeted individuals whose judgment are being elicited. In this study, based on the above criteria, the evaluation was conducted on mainly language instructors such as teachers or lecturers who also have experience in using technology in education. With regard to the numbers of experts for the study, the literature has yet to reach a consensus (Hsu & Sandford, 2007). For instance, past researchers proposed between 10 to 15 experts (Adler & Ziglio, 1996; Delbecq et al., 1975) as optimal in a Delphi study but some argue that 10 to 50 respondents are needed to facilitate the study (Witkin & Altschul, 1995). However, Ludwig (1994) explains that the number of experts used should represent a pooling

of judgments and the capability of the research team in processing information. In this study, the researchers employed 48 respondents to form the evaluation panel for the model.

The instrument used for this study was a set of evaluation survey questionnaire. The questionnaire consisted of 25 questions divided into two parts: 1) experts' personal details, and 2) experts' view of the model. The first part consisted of two sections: Section A and Section B. Section A was used to elicit participants' background information and Section B was used to gather information on participants' use of mobile technologies. The second part served to elicit experts' view of the model. In detail, this part aimed to gather the participants' collective opinions on the evaluation of the model (Figure 1) on the following aspects and their respective quantitative items as listed in Table 1.

Table 1
Aspects and quantitative items to evaluate the model

Aspects	Quantitative Items
1 Suitability of elements (learning activities)	1.1 Experts' view on mLearning activities proposed in the model
2 Domain classification of the learning activities	2.1. Grouping of mLearning activities into three domains as shown in the model: knowledge input activities, enabling skills activities, and evaluation and reflection activities
	2.2. List of activities grouped under knowledge input activities as shown in the model
	2.3. List of activities grouped under enabling skills activities as shown in the model
	2.4. List of activities grouped under evaluation and reflection activities as shown in the model

Table 1 (continue)

Aspects	Quantitative Items
3. Relationships among the learning activities	3.1. Relationships among the mobile learning activities in the knowledge input activity domain as shown in the model in aiding the students to achieve their learning needs and course outcomes
	3.2. Relationships among the mobile learning activities in the enabling skills activity domain as shown in the model in aiding the students to achieve their learning needs and course outcomes
	3.3. Relationships among the mobile learning activities in the evaluation and reflection activity domain as shown in the model in aiding the students to achieve their learning needs and course outcomes
	3.4. Overall relationships among the mobile learning activities as shown in the model in aiding the students to achieve their learning needs and course outcomes
4 Suitability of the model in teaching and learning activities in aiding the students to fulfill their language learning needs and course outcomes	4.1. The model shows a clear guide on how a language communication skills course can be conducted using mLearning in complementing the conventional classroom learning.
	4.2. It is practical to use a network of interrelationship of learning activities in developing a model of mLearning implementation in guiding the curriculum implementers to conduct mLearning language lessons.
	4.3. The model shows clearly how formal classroom learning activities could merge with informal mLearning activities to form a holistic learning experience for the students.
	4.4. The model shows clearly how mLearning could promote and capitalise collaborative learning through formation of large and small 'learning society' among students through choice of collaborative online learning activities and the interrelationships among these activities.
	4.5. The model shows clearly how one activity connects to other activities in assisting students through mLearning in achieving their learning outcomes.
	4.6. The model could be used to guide the planning of course unit lessons in facilitating students' learning.
	4.7. The model could be used as an example to develop other implementation models for other course subjects.

A pilot study was conducted on 12 lecturers from a tertiary institution using the instrument to improve the questionnaire items. However, the 12 lecturers were not included in the actual needs analysis study. The instrument was further validated by six curriculum and instructional technology experts. Reliability test was conducted on the survey questionnaire for all items that

registered Cronbach alpha coefficient of .874, indicating high reliability for all items as shown in Table 2.

Table 2
Reliability testing of evaluation questionnaire

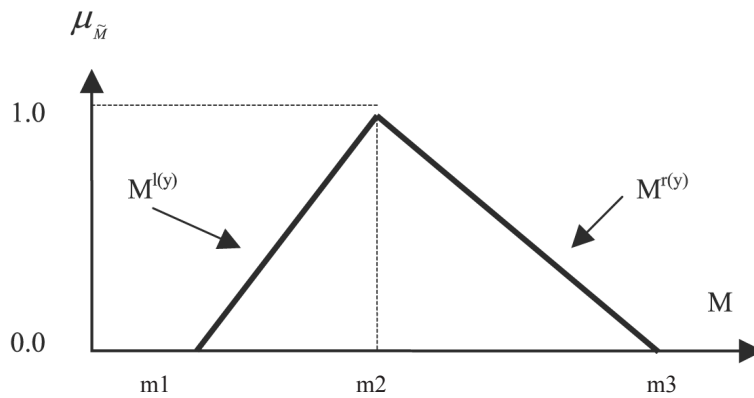
Cronbach's alpha	Cronbach's alpha based on standardised items	N of items
.874	.818	33

The main aim of this phase was to evaluate the model developed prior to this study (refer to Figure 1). As the study employed Fuzzy Delphi method to evaluate it, the procedure for this phase is elaborated in the following section.

Selection of Experts

The process of selection of respondents for this study was elaborated in the preceding section. In order to address the issue of

fuzziness among the experts’ opinion, a linguistic scale was determined to frame the respondents’ feedback. The linguistic scale is similar to a Likert scale with an additional of fuzzy numbers given to the scale of responses based on triangular fuzzy number. For every response, three fuzzy values were given to consider the fuzziness of the experts’ opinions: minimum value (m1), most plausible value (m2), and maximum value (m3) as shown in Figure 2.



m1 = Minimum value; m2 = most plausible value; m3 = maximum value

Figure 2. Triangular Fuzzy Number

In other words, the linguistic scale is used to convert the linguistic variable into fuzzy numbers. The level of agreement scale should be in odd numbers (3, 5, or 7-point linguistic scale). The higher the scale, the more accurate the response analysis may be. In this study, a 7-point linguistic scale was used as shown in Table 3.

Table 3
Seven point linguistic scale

7-point linguistic scale			
Strongly agree	0.90	1.00	1.00
Agree	0.70	0.90	1.00
Moderately agree	0.50	0.70	0.90
Slightly agree	0.30	0.50	0.70
Slightly disagree	0.10	0.30	0.50
Disagree	0.00	0.10	0.30
Strongly disagree	0.00	0.00	0.10

The experts' responses with the correspondent fuzzy number scales for each quantitative items on their view of the model were inserted in an excel spreadsheet. This is to obtain the average for m_1 , m_2 , and m_3 . The next step was to calculate the difference between the experts' evaluation data and the average value for each item to identify the threshold value d , using the formula below:

$$d(\bar{m}, \bar{n}) = \sqrt{\frac{1}{3}[(m_1 - n_1)^2 + (m_2 - n_2)^2 + (m_3 - n_3)^2]}.$$

Based on the formula, m_1 , m_2 , and m_3 are average values for all the experts' evaluation; n_1 , n_2 , and n_3 are fuzzy values for all three values for every expert.

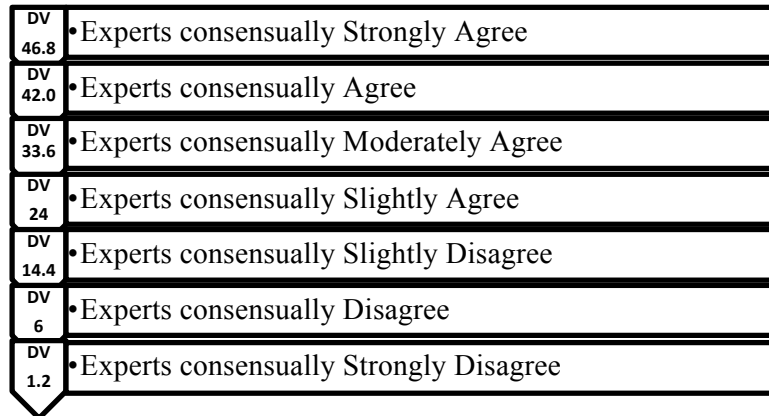
The threshold value is important to determine the consensus level among experts. According to Cheng and Lin (2002), if the threshold value is less than or equal with 0.2, then all the experts are considered to have achieved a consensus. The overall group consensus should be more than 75%, otherwise a second round of Fuzzy Delphi needs to be conducted. Once the group consensus is achieved, the aggregate fuzzy evaluation is determined by adding all the fuzzy numbers for each quantitative item. The final step of the procedure of the evaluation phase is called the defuzzification process. The defuzzification value for each quantitative item was calculated using the following formula:

$$A_{\max} = 1/4 * (a_1 + 2a_m + a_2)$$

Where, A_{\max} is Defuzzification value for each item (performance initiatives); a_1 is

the fuzzy evaluation for the minimum value, a_m is the fuzzy evaluation for plausible value, and a_2 is the fuzzy evaluation for the maximum value for the particular item.

In the general application of Fuzzy Delphi, defuzzification is essential to classify the variables agreed by consensus of the experts through ranking of the variables (quantitative items). In this study, the calculation of defuzzification value and the rankings were used to identify which quantitative items were agreed upon in evaluating the mLearning implementation model. The range of defuzzification value that was accepted as consensus among the experts was within the range of 33.6 to 46.8. Defuzzification value of 24 was the minimum value for experts' consensus under a hypothetical agreement of 'moderately agree' for all quantitative items. Defuzzification value of 46.8 was the maximum value for indication of consensus experts' opinion under hypothetical agreement of 'strongly agree' for all quantitative items. Hence, defuzzification value of less than 24 indicated experts' consensus disagreement with the quantitative item while a value ranging from 33.6 to 46.8 indicated consensus agreement to strong agreement among the experts. The following Figure 3 elaborates the range of agreement among the experts. Thus, the method used to validate the model was a modified Fuzzy Delphi method (with a different view of the use of defuzzification value and rankings for evaluation purposes as explained).



Note: DV- Defuzzification Value

Figure 2. Elaboration of experts' agreement based on defuzzification value

FINDINGS

Based on a seven-point linguistic scale, the responses of the participants (experts) to the evaluation survey questionnaires were obtained. The overall threshold value d for this study was 89.9% which exceeded the minimum of 75%. This indicates that the participants have reached the required consensus in their views for all questionnaire items of the evaluation questionnaire in evaluating the mLearning implementation model for the undergraduate English language learning course of this study. Since consensus among the participants had been achieved, the next step was to seek the findings for the participants' collective opinions on the evaluation of the model in terms of their agreement on the aspects and their respective quantitative items as listed in Table 1.

Aspects (1) to (3) were evaluated as these aspects represent the elements

(learning activities) and the relationships among the elements, which constitute the main parts of the structure of the model. The suitability and clarity of the model in giving a clear and valid guide to mLearning implementation depend on the structure of the model. Aspect (4) was included to evaluate the purpose of the model. The overall mapping results for all four aspects in evaluating the model is concluded in Table 4. The table does not only show defuzzification values for all quantitative items but also includes the ranking of the items. The ranking of the items indicates how an item compares with other items in the degree of agreement among participants. Ranking number one (1) is taken as the highest rank consistent with the highest defuzzification value registered to the particular item.

Table 4
Defuzzification value and ranking of quantitative items

Item response	Average	Fuzzy evaluation	Defuzzy	Ranking
1.1	(0.75, 0.90, 0.96)	(36, 43.1, 45.9)	42.03	10
2.1	(0.74, 0.90, 0.97)	(35.6, 43, 46.6)	42.05	9
2.2	(0.65, 0.82, 0.94)	(31, 39.5, 45.2)	38.8	16
2.3	(0.80, 0.93, 0.98)	(38.4, 44.7, 46.8)	43.65	1
2.4	(0.75, 0.90, 0.96)	(36, 43.2, 46.2)	42.15	7
3.1	(0.75, 0.90, 0.96)	(36, 43, 46.3)	42.08	8
3.2	(0.73, 0.88, 0.95)	(35, 42.2, 45.6)	41.25	12
3.3	(0.68, 0.85, 0.95)	(32.8, 40.7, 45.6)	39.95	14
3.4	(0.78, 0.92, 0.98)	(37.4, 44, 46.8)	43.05	2
4.1	(0.68, 0.84, 0.94)	(32.6, 40.3, 45.1)	39.58	15
4.2	(0.75, 0.90, 0.97)	(36.2, 43.2, 46.4)	42.25	5
4.3	(0.76, 0.90, 0.97)	(36.4, 43.3, 46.4)	42.35	4
4.4	(0.75, 0.88, 0.94)	(35.6, 42.3, 45.5)	41.43	11
4.5	(0.75, 0.89, 0.96)	(36.6, 43.1, 46.1)	42.23	6
4.6	(0.77, 0.93, 0.99)	(33.8, 41.7, 46.2)	40.85	13
4.7	(0.71, 0.87, 0.95)	(36.2, 43.5, 46.7)	42.48	3

DISCUSSION

As described in the methodology section, in a conventional Fuzzy Delphi, the ranking of the items is to determine the variables for the scope of a case being studied. Quantitative items that received higher ranks could be considered as a variable or an element chosen as the result of the study. However, in this study, the ranking is used to compare the level of agreement of items among the participants. From Table 4, item 2.3 (List of activities grouped under enabling skills activities as shown in the model) is ranked first in participants' preferences while item 2.2 (List of activities grouped under knowledge input activities as shown in the model) received the lowest rank in the level of participants' agreement.

However, the most important findings of the study are the defuzzification values of the items in participants' evaluation of the interpretive mLearning implementation structural model for undergraduate English language learning course. Overall, from the findings presented in this study, as the defuzzification values for all quantitative items exceed the minimum value of 33.6 (refer to Figure 3), the findings conclusively suggest that the participants have consensually agreed to all four aspects of the evaluation of the model. Thus, according to the participants or experts for the study, the model is suitable to serve as a guide in the implementation of mLearning as learning support for undergraduate formal English language learning for *Professional and Communication Skills* course at the tertiary

institution. The model exemplifies how students can gain assistance in overcoming their lack of language competence to cope with their professional communication skills course and to achieve their course outcomes. In terms of implications to instructional practices, the model is also able to guide education stakeholders in designing meaningful and sustainable learning experiences mediated through mobile technology to cater to the new mobile generation of learners without forsaking the long institutionalised traditional formal classroom learning.

The model may be adopted or adapted to implement mLearning in a formal classroom at tertiary level. Based on the learning activities and their interrelationships, course instructors can plan appropriate mLearning lesson plans and select suitable mobile devices to facilitate learners' language learning needs and fulfill their course objectives. For example, based on the model (Figure 1), the lecturer may begin the language course by establishing learning contract (activity 9) with the students and encourage them to form social blog groups (activity 10) before proceeding to giving lectures on communication (activity 1) or encouraging the students to get and share information about the course content (activity 5). Activities 9 and 10 that had been conducted earlier can facilitate activities 1 and 5, for example to allow students to share and understand the principles of communication through interaction in classroom and via mobile devices. As the course progresses in the lecturer's lesson

plan, the low achieving students can be assisted through mentorship (activity 12) and subsequently through mobile video conferencing (activity 7), mLearning forums (activity 13) and small group discussion through social blogs (activity 11). At the same time, referring to the model, students who may want to present a mock-trial presentation can do so through activity 18 (search for presentation materials) and then record their oral presentations to be uploaded on social blogs to be commented by others (activity 6). Further discussion on the students' improvement can be conducted through the same activities 7, 11, 12, and 13 as mentioned here. Since the activities involve synchronous and asynchronous interaction and collaboration, students are required to be equipped with smartphones with audio-video streaming capabilities.

Another pertinent point is that activities 1 to 5 and 9 to 10 support the notion of mLearning where formal learning and informal learning are integrated seamlessly (So, Kim, & Looi, 2008). Based on the model (Figure 1), the formal classroom learning though lecture (activity 1) is further complemented by activity 5, where students elaborate upon what they learned in class by sharing content through mobile tags using mobile devices. However, as discussed earlier, beyond the notion of content sharing, the integration of formal and informal learning allows students to take charge of their own learning together (student-centred learning) through both face-to-face and wireless online interaction which further enrich their learning experiences. Activities

9 and 10 further support student-centred learning concept where activity 9 promotes learners' autonomy by managing own learning via learning contracts facilitated by the establishment of online communication through activity 10. For example, through social blogs, the in-class discussion can be continued on the online platform which can subsequently result in knowledge negotiation among learners. Certainly, the limited time and space of classroom learning alone cannot accommodate these learners' needs as language learning requires more time for learners' practice and exposure for skill development. Moreover, collaborative learning strives on continuous interaction and communication among learners and this is where mLearning serves as ideal medium for these learning contexts and students' learning needs (Gong & Wallace, 2012).

Based on the model in Figure 1, it is important to reiterate that considering the relationships among the language activities, activities 9 and 10 qualify as important precedent activities to be conducted before subsequent activities for effective mLearning implementation. For example, forming social blogs among students in activity 10 serves as important grounding for language activities 8 (online discussions on task given), 16 (collaborative online language games), 12 (mentorship), 7 (video conferencing among learners), 6 (record and upload presentations to elicit comments), and evaluation activities (activities 19 to 24). The relationships among these language activities (activities 6, 7, 8, 10, 12, 16, and 19 to 24) supports Baggio's

(2008) findings from his study on the use of iPod among undergraduate language learners. He reported that his students were able to use their mobile devices in establishing communication networks among themselves and their tutors to aid in their language learning collaboration. Through the networks, the students recorded their oral assessments and uploaded them to a virtual learning environment (VLE) to allow tutors' feedback. These activities are categorised either as knowledge input activities or as enabling skills activities. The relationship among the activities as described above conforms to the social constructivist learning theory, which capitalises on supporting learners' language learning through interaction and collaboration. According to the theory, knowledge is best negotiated and acquired through interaction and collaboration with each other, aligned with beliefs of social constructionists (Kurt & Atay, 2007).

The mLearning implementation model (Figure 1) also suggests that collaborative redesign of language activities (activity 14) and collaborative redesign on method (activity 15) contribute to the development of students' communication skills and language competence to engage effectively in online groups. Both the activities promote students' ownership of their learning process where they can choose what and how to learn to achieve their language learning goals. These activities are further supported by activities 7, 8 and 12 in helping students improve their language competence and communicative skills through video

conferencing, online discussion, and peer mentorship where students are engaged in collaborative task solving and content sharing (activity 18). Students, especially the low to moderately competent students will benefit more through these online activities and for those who need further assistance can share their learning problems too (activity 11). In short, referring to the role of the activities in the respective clusters, the course instructors need to pay attention to all the 24 activities as the activities individually and connectedly have influence on the implementation of mLearning for the English Language learning course.

CONCLUSION

This study serves as an example on how Fuzzy Delphi as a decision making method can be used to evaluate a technology-mediated education model. Other existing methodologies such as focal group interviews, simple survey questionnaires conducted on implementers (teachers or instructors), or a more sophisticated technique such as Stake Countenance model (Stake, 1967; Wood, 2001) have also been used in evaluation of education products (for example, model, module, courses, or education implementation framework). The introduction of the Fuzzy Delphi method in this study is not intended to replace these previous methods, but rather, to compare, focal group interviews or a simple survey questionnaire would be useful in eliciting the end users' views (such as from teachers, lecturers, or instructors) on the model, for

instance, how the model may guide them in using mLearning in language learning. Stake countenance model on the other hand is useful in analysing the effectiveness of an education course or programme through students' assessments on three stages: pre-implementation of the course, during the implementation of the course, and post-implementation of the course. Fuzzy Delphi method as illustrated in this study capitalises on selected experts' collective views in making decision on a complex problem as outcome of the evaluation.

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Indicators for Socio-Religious Harmony Index (SRHI) Instrument for Malaysia: Findings of FDM Expert Panel

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ABSTRACT

This study contributes to an understanding of the Malaysian socio-religious situation. Being a multi-religious country, Malaysia is not immune to contentious issues and incidents that challenge the relationship between different religious groups. Thus, it is crucial for the country to be conscious of its level of inter-religious relationship in order to maintain peaceful coexistence within the nation. This literature review is presented as a guideline to propose suitable indicators for the Socio-Religious Harmony Index (SRHI) instrument. This study uses the Design and Developmental Research (DDR) approach to conduct a Needs Analysis (Phase 1), development of the SRHI instrument (Phase 2) and evaluation of the index (Phase 3). This paper discusses Phase 2 of DDR, which is the development of the SRHI instrument. The method of this phase uses the Fuzzy Delphi Method (FDM) involving 14 expert panels invited to participate in the development of the instrument

through a workshop. There were two rounds of FDM sessions, where the first round was to determine the indicators and the second round was to determine the sub-indicators. The end output of this paper is to present the findings of selected indicators for this index instrument as it was determined in FDM round one and two. The result shows that all 22 proposed indicators were accepted for inclusion in the SRHI instrument with

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the highest ranking indicators being mutual respect and the lowest ranking indicator being acknowledgement. The result of FDM round two shows that 53 sub-indicators were accepted out of 58 sub-indicators. Lastly, this paper presents the overall indicators and respective sub-indicators for the SRHI instrument.

Keywords: Fuzzy Delphi Method (FDM), index instrument, Malaysia, social harmony, socio-religious relation

INTRODUCTION

Religion and social harmony have a strong mutual relationship and cannot be denied. The relationship has been demonstrated by sociologist Ibn Khaldun, Emile Durkheim and Giambattista Vico (Soyer, 2010) and has been studied by previous researchers (Linehan, 2013). The misconceptions people have about religion leads to wars and terrorist attacks. With religious kinship taking precedence over human kinship, millions of lives are destroyed, and human dignity trampled upon (Muzaffar, 2001).

Concerning religion, Khaldun and Vico agree that religion is one of the factors that implicate a substantial change in civilisation. The emergence of civilisations is due to religion as people tend to group and create a sense of solidarity. It is also agreed by Durkheim, where religion fortifies social solidarity and has a positive role in social control and group harmony. Khaldun proposes that in solidifying a society, religion is the most significant factor, followed by kinship (Soyer, 2010).

All religions have differences and commonalities. Religious diversity can be seen through the respective faiths, rituals, and beliefs. On the other hand, religious commonality can be seen in ethnic and human kinship. Even though they are diverse in their path to realising God, all religions have the same ethics that guide the adherents in pursuing good human relations (Kamaruzaman, 2010). Religion has provided humanity with universal ethical norms and moral values. Therefore, the misunderstanding of religion as a source of conflict should be addressed (Linehan, 2013). Linehan argues that Islam and other religions uphold peacebuilding and practice non-violence towards others. In the same stance, Muzaffar (2001) argues that it is not religion that is the actual problem, but human beings who are unable to live up to the most fundamental ethical standards that are promulgated by the various prophets of God to humanity at all times and all places (Muzaffar, 2001).

Viewing from the Islamic perspective, the kindness of non-Muslims who live peacefully with Muslims, is appreciated, when they do not put up a fight and present hatred against Muslims. They are called *Musalimun* (Qardawi, 1992), and due to that, the relationship with them is characterised by human social relations, where the people should spread peace to mankind in general, as is guided in the *Quran*, the practice of the Prophet PBUH, and the Khalifah, except when they appeared to show hostility and hatred against Islam.

Islam advocates harmony with adherents of other religions. Islam as a religion provides not only theories but comes with exemplified models. It is spelled out in the Quran and was demonstrated by the Prophet PBUH and His Companions. The principle of Islam towards other religions is tolerance, where Islam gives no compulsion to others to embrace Islam (Quran 2:155). In other words, Islam accepts the existence of other religions but denies the truth of other religions. Islam accepts religious plurality in human societies, but does not accept the relativism of religious truth. This understanding shows that the existence of religious diversity cannot be denied because it is the *Sunnatullah* (a must) for humans (Quran, 10:99).

Since interaction with non-Muslims is a human social relation dimension of connectivity, all the kindness of mankind should be given to them (Quran, 60:8). This is in line with the translation of Yusof Qardawi, the *al-birr* and *al-qisth verses* which mean kindness and justice, where Allah tells Muslims to spread the kindness not only to other Muslims but also to non-Muslims. In neighbourhood communities, Allah specifically asks Muslims to be kind to “whosoever our neighbour may be” (Quran, 4:36). Islam advises adherents to treat neighbours kindly, even if they are not Muslims. This honourable teaching does not only make others feel at peace, but creates peaceful and comfortable feeling among the religious adherents. Islam teaches Muslims to not violate another Muslim, as well as non-Muslims.

The same applies to other religions, where religious teachings guide the religious adherents to be kind to others. By reflecting on the traditions and teachings of the religions, it can be justified that there is a significant relationship of parallel understanding of what constitutes harmonious relations. The shared moral values are the ethical principles that run through all religions like a golden thread. It is called the mother of ethics, or according to the more widely known phrase, the golden rule of life (Muzaffar, 2001). It is vital for harmonious relations in a multi-religious society because harmony induces mutual respect, understanding and cooperation.

In fostering social harmony, Khaldun argues that human beings cannot live and exist except through social organisation and cooperation. In the same vein, Durkheim emphasises that society cannot exist if its parts are not solidary (Soyer, 2010). To define the term, social harmony is about maintaining a level of equilibrium in economic terms in civil society (Galla, 2010). The term social harmony implies a rather passive attitude towards civil society, that is, tolerance is accepted rather than diversity being promoted and valued as both an end in itself as well as something that adds different forms of value to society. According to the President of China (Hu, 2005), a harmonious society is a society that is democratic and ruled by law, is fair and just, trustworthy and fraternal, full of vitality, stable and orderly, and maintains harmony between man and nature (Rothman, 2008). These social values do not only cover the

political and economic institutions, but also cultural and environmental dimensions (Rothman, 2008).

Thus, in this study, socio-religious harmony is defined as a peaceful environment in which different religious groups can live together as a result of acceptance of any religious differences, having mutual-understanding, the ability to cooperate in an environment of rights and justice given to all members of society, as well as the ability to deal with conflicts wisely within a multi-religious society.

PROBLEM STATEMENT

Malaysia is a multi-religious country where religious adherents live together as a community. To date, Malaysia has preserved harmonious relations even though in some instances, religious conflicts occur among people. The interaction among religious adherents in this country needs review and analysis, whether they live in peace or reveal resentment and resistance to others. Past studies have highlighted issues of religious tension (Ghani & Awang, 2014; Ibrahim, 2013; Majid, 2013; Rahman & Khambali, 2013) but are characterised by inconclusive analysis whether social stability will remain or is at risk (Ahmad, 2014). The latest issues related to inter-religious incidents are the spread of the bible in Malay, the use of the word *Allah* to refer to God outside of an Islamic context, church issues in Kampung Medan and the construction of a Hindu temple at Shah Alam (Ahmad et al., 2014).

These issues, for example, the church issues in Kampung Medan, have led to

fight among Muslims and Christians. The demonstration has to an extent, jeopardised social harmony in the country, worsened by uneven media coverage (Hasan, 2012) and the intervention by a politician (Institute of Islamic Understanding Malaysia [IKIM], 2016). The sparks from this issue became larger when it was spread by the media and gave a bad perception of religion within the society. However, the real perception of the religious adherents' to others cannot be measured because there are no data that can show the condition (Ahmad, 2014). As such, the society has become more sensitive to the religious issues.

Thus, there is a need to develop an instrument to measure the harmony level of relationships among religious adherents in Malaysia, with an existent harmony index that measures harmony across the countries. Bell and Mo (2013) did not attempt to account for harmony in religious diversity. In their conclusions, they claimed that more refined measurements for diversity are needed. As this study notes, religion is a sensitive issue in a multi-religious society; the element of religion should not be neglected. However, Bell and Mo's attempt to empower the indicator of social relations because it was neglected by another index cannot be denied.

This study builds on the study by Bell and Mo, and proposes social relations to be an important indicator of social harmony. The socio-religious harmony index attempts to measure the relation of religious adherents in a multi-religious country, specifically in the case of Malaysia. However, the

other three indicators proposed by Bell and Mo are not included in this research. Because Bell and Mo treated social harmony in a broad sense, other indicators like those that measure human relationships to the environment, family relations, and international country relations are not included in this study.

Besides Bell and Mo, there are indices that have been developed internationally and locally in societal and peace contexts, but none of them clearly measures the socio-religious harmony relation. Global Peace Index (GPI) seems a little bit closer to the harmony index, but it does not cover the religious part of harmony. There is also Societal Stress Index (SSI) that measures tension levels in the society of Malaysia. However, SSI contrasts with the objective of this study to measure the harmony level among religious adherents.

In religious aspects, there are the Religious Diversity Index (RDI), Government Restriction Index (GRI), and Social Hostilities Index (SHI). Even these indices look at various religious aspects, but none has measured the socio-religious harmony relations in their indicators. The indicators used in Social Hostilities Index (SHI) does not seem applicable in Malaysia due to mob violence, terrorism, and religious criminal cases are very rare, except for tongue wagging that increases the level of religious tension (An, 2008). There is also the Religious Tolerance Index (RTI) that measures the level of tolerance among religious adherents and the tolerance practised by the government (Talib, 2010).

However, RTI contrasts with this study where the focus of this study is to access harmonious interactions among religious adherents.

OBJECTIVES

This study examines the indicators of socio-religious harmony in the context of Malaysia. The establishment of domain, indicators and sub-indicators could eliminate subjective interpretation and perception towards socio-religious harmony. This study also aims to identify the experts' agreement on socio-religious harmony indicators and sub-indicators.

METHODS

Development Phase

This phase involves the development of the socio-religious harmony index based on the elements determined in the needs analysis phase. The development of the index is through the Fuzzy Delphi Method (FDM). Fuzzy Delphi was introduced by Kaufmann and Gupta (1988). It is a combination of fuzzy set theory and Delphi technique (Murray, Pipino, & van Gigch, 1985). The Fuzzy Delphi method is an analytical method for decision making that incorporates fuzzy theory in the traditional Delphi method. The Delphi method itself is a decision-making method that involves several rounds of questionnaire surveys to elicit experts' opinion on an issue being investigated. Hence, the aim of the Delphi method is to make a decision based on achievement of consensus on a particular

study. The method does not only allow integration of opinions from various experts for predicting outcomes but it also meets the requirement of gaining the opinions independently from each expert through multiple cycles of questionnaires (Linstone & Turoff, 1975).

In developing indicators and an index, FDM has been frequently used. There are several indexes that have been developed by using FDM. One of them is the inherent safety index in food industries developed by Tadic, Savovic, Misita, Arsovski and Milanovic (2014). There is also the Partnering Performance Index (PPI) for construction research developed by Yeung, Chan and Chan (2007). Cho and Lee developed a new technology product evaluation model for assessing commercialisation opportunities using the Delphi method and fuzzy AHP approach (Cho & Lee, 2013). Another researcher developed road safety performance indicators using FDM and Grey Delphi Method (Ma, Shao, Ma, & Ye, 2011). Xia, Chan and Yeung (2011) used FDM in selecting design-build operational variations in the People's Republic of China. All of these construction indexes can be used as guidance in developing the socio-religious harmony index.

Method of Development Phase

The preliminary study is the first step in the development phase of the research reported here. The main aim of this phase is to develop the inter-religious index instrument. Because the study employed the fuzzy

Delphi method, the procedures for this phase are as follows:

1. Review of literature. From the literature review and past studies, indicators are categorised into six domains: peacefulness, acceptance, understanding, cooperation, right and justice, and conflicts. The domains were then proposed to the experts to be measured in the instrument. From the domains, there were 22 indicators and 58 sub-indicators listed before they were proposed to the experts.
2. Selection of experts to evaluate the indicators and sub-indicators. In the Delphi method, the most important step is the selection of experts because it affects the quality of the result of the study (Jacobs, 1996; Taylor & Judd, 1989). A total of 14 experts from various stakeholder backgrounds, such as religious officers, ministry, NGOs, religious heads from the main religions (Islam, Christianity, Buddhism, Hinduism), academicians, were involved in the workshop. Likewise, Adler and Ziglio (1996) emphasised that the selection of experts should be based on four expertise requirements:
 - knowledge and experience with the issues under investigation
 - capacity and willingness to participate
 - sufficient time to participate in the study
 - possessing effective communication skills

Specifically for religious leaders in the field of inter-religious dialogue, there are several criteria that need to be fulfilled in order to become a representative. Because they are the transformative agents in multi-religious society, Kamaruzzaman (2010) suggests the criteria of being competent, knowledgeable, and committed towards religion (Kamaruzzaman, 2010) as necessary. In the same vein, Karim, Khambali and Saili (2014) argue that the selection of panel members should be based on overall aspects, not only the position that is held by a person, but also knowledge in the inter-religious field. Karim et al. (2014) examined the factor of education level, experience in

religious dialogue, and religious level of the religious leaders in determining the level of understanding of the panel.

A broader perspective was adopted by Nimer (2001) who added more criteria for religious representatives in a panel. The criteria he proposed include: (1) religious level, (2) political factors, (3) current demand factors and also (4) prestige factors (Karim et al., 2014). Thus, based on the criteria of experts as listed above, for this study, the experts were selected in five categories that are related to socio-religious context. The categories consist of various stakeholders' backgrounds as listed below.

Table 1
Expert's category

Category of experts	Range of year experience	Position
Policy makers	5-15 years	Director of Institut Kajian dan Latihan Integrasi Nasional (IKLIN) under Jabatan Perpaduan Negara dan Integrasi Nasional (JPNIN)
High authorities Muslim institutions Muslim NGOs		Director of Institut Kefahaman Islam Malaysia (IKIM) and Jabatan Kemajuan Islam Malaysia (JAKIM) High position personnel of Malaysian Chinese Muslim Association (MACMA), Allied Coordinating Committee of Islamic NGO's (ACCIN) dan Majlis Perundingan
Religious leaders		Religious leaders of Hindu Sangam, Christianity, Buddhism, Bahai, Sikhism, and Taoism
Academicians		Doctorate in comparative religions in several higher education institutions, publish a lot of papers related to the topic

3. In order to address the issue of fuzziness among the experts' opinion, a linguistic scale frames the respondents' feedback. The linguistic scale is similar to a Likert scale with an additional set of fuzzy numbers given to the scale of responses

based on the triangular fuzzy number. For every response, three fuzzy values were given to consider the fuzziness of the experts' opinions. The three values consist of three levels of fuzzy value: minimum value (m_1), most plausible

value (m_2), and the maximum value (m_3). In other words, the linguistic scale is used to convert the linguistic variable into fuzzy numbers. The level

of agreement scale should be in odd numbers (3, 5, or 7 points linguistic scale). In this study, a 7- linguistic point scale is applied.

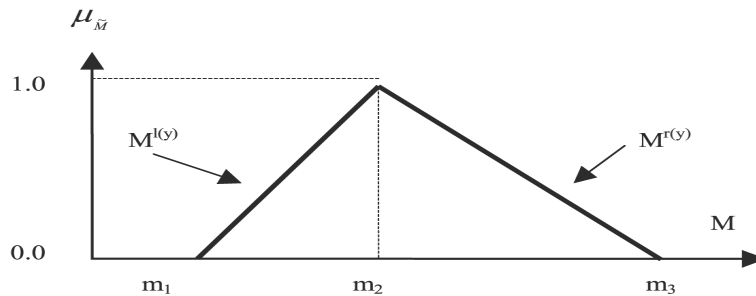


Figure 1. Triangular fuzzy number

Table 2
Linguistic variable and fuzzy scale

Linguistic variable	Fuzzy scale
Strongly disagree	1 0.0 0.1 0.2
Disagree	2 0.1 0.2 0.4
Moderately agree	3 0.2 0.4 0.6
Agree	4 0.4 0.6 0.8
Strongly agree	5 0.6 0.8 1.0

4. The experts' responses with the correspondent fuzzy number scales for each questionnaire item on their view of the model were inserted in an excel spreadsheet. The next step was to calculate the difference between the experts' evaluation data and the average value for each item to identify the threshold value, 'd'. The threshold value is important to determine the consensus level among experts. According to Cheng and Lin (2002), if the threshold value is less than or equal to 0.2, then

all the experts are considered to have achieved a consensus. However, what is more important to consider is the overall consensus on all items. The overall group consensus should be more than 75%; otherwise, the second round of Fuzzy Delphi needs to be conducted.

5. Once the group consensus is achieved, the aggregate fuzzy evaluation is determined by adding all the fuzzy numbers for each item. The final step of the procedure of this phase is called the defuzzification process. The defuzzification value for each questionnaire item was calculated using the following formula:

$$A_{\max} = 1/4 * (a_1 + 2a_m + a_2)$$

In the general application of Fuzzy Delphi, defuzzification is essential to classify the variables agreed by consensus of the experts through the ranking of the variables. The

variable that has the highest defuzzification value is ranked highest in priority to be considered as the output variable.

FINDINGS

The defuzzification value is calculated, and the indicators are ranked using Fuzzy Delphi technique. The expert consensus in FDM 1 is 76%, which is accepted based on FDM rules. Based on the findings in FDM 1, 22 indicators are accepted, and FDM 2 revealed the 53 sub-indicators that were accepted out of 58 sub-indicators.

Similar to FDM1, a ranking of the sub-indicators was based on the collective agreement of participants and discussion among them. For example, both socio-religious sub-indicators, “Majority of religious leaders portray positive attitude towards co-existence,” and “Majority of the religious adherents are treated justly by the community” generated the highest fuzzy evaluation score of 11.5, hence, listed as the most important sub-indicators followed by the socio-religious sub-indicators “Majority of the people practise non-violence attitude in their multi-religious neighbourhood” and “Majority of the people are satisfied with the rights of religious practice as enshrined in the Constitution”, which registered 11.33 and 11.23 fuzzy evaluation scores respectively. However, unlike FDM 1, for FDM 2, the ranking of the sub-indicators was not to measure their significance to socio-religious harmony. Instead, the accepted sub-indicators are to detail out the indicators based on the experts’ concern.

However, after conducting the cut-off point procedure in finalising the result, the list of the socio-religious sub-indicators was reduced to 53 initiatives after eliminating initiatives that scored lower than 9.1. Socio-religious sub-indicators that were removed included “Majority of people consider other religious adherents are trustworthy”, “Majority of people can rely on other religious adherents”, “The amount of minor physical, religious conflicts”, “Adequate number of inter-religious dialogue among religious adherents” and “The amount of criminal cases due to religious issues.” Further refinement of the list by the participants resulted in the final list as shown in Table 3 (as in Appendix) that shows 53 socio-religious sub-indicators under 22 indicators.

DISCUSSION

Based on the calculation of FDM 1, scale agreement of five was selected as the minimum number to be accepted. Due to that, the defuzzification number of 9.8 was the minimum number for an indicator to be included in the instrument. Fuzzy calculation shows that all indicators were accepted with expert consensus of 76%.

Findings show that the experts consensually agree that mutual respect has to be the highest priority indicator that portrays socio-religious harmony. It is relevant and essential in the interaction of multi-religious society in Malaysia, as argued by Kamaruzaman (2010). Rothman in the same vein emphasised that people

should respect the differences in religious beliefs in order to achieve a harmonious society (Rothman, 2008). Moreover, respect motivates religious adherents not to belittle or ridicule differences (Schirmer, Weidenstedt, & Reich, 2012).

In the context of this study, to align with the framework of Malaysia's constitution, respect is defined as having shared acknowledgement with other religious adherents' right to conduct their respective religious celebrations, rituals, and beliefs. In addition, religious adherents need to respect the Constitution, where Islam is the official religion of the majority, who are the Malays. Thus, propagation of other religions toward Muslims is prohibited, such the Malay bible case. Respecting these articles and avoiding the sensitivities of other religious differences will foster socio-religious harmony.

Experts also agree that the rights and freedom of the religious adherents should not be neglected. It is argued that the recognition of the rights of non-Muslims is more fundamental to an ethical Islamic society (Muzaffar, 2001). Malaysia's challenge currently is to define the rights of Muslims and non-Muslims which remain indistinct (Rahman & Khambali, 2013). It cannot be denied that the issue of the rights and freedom in religious conversion, demolition of temples, apostasy, and Islamic state discourse have widened fault lines among different religious communities in Malaysia (Jha, 2009). This view has also been supported by Rahman and Khambali (2013), where these problems have become the main factors that hinder the harmony of

various religions because it causes struggle for power as well as violation of rights and laws. In some cases such as the Kampung Medan case, instead of struggling for the Christian rights, the Muslim sensitivities on church surpassed the need for respect, as Muslims are the majority population in the area (Qardawi, 1992).

The same can be said of justice; it is a determinant factor of socio-religious harmony index based on experts' view. They agree that justice is a requirement of every human being regardless of religious beliefs (Rahman, 2012). Justice is proven to be the main principle of social harmony compared to fairness in the dualistic model of harmony (Leung, Koch, & Lu, 2002).

In the context of this study, justice is represented by Malaysia's Federal Constitution where it gives rights and freedom to other religious adherents without putting aside its main concern, which is Islam. Article 3(1) states that the freedom of professing religion within the context of Islam is recognised as the official religion of Malaysia and other religions can be peacefully practised in any territory of the Federation. This study found a strong reason for Islam to be spelled out as the religion of the Federation because it is the religion of the indigenous inhabitants and the majority population, who are Malays. This is supported by Husin and Ibrahim (2016) who revealed in their study a similar trend which is also witnessed in other countries, where the official religion is based on the dominating population, such as the selection of Church of England

in the United Kingdom, Shinto in Japan, Catholicism in the Republic of Ireland and Islam in Indonesia.

In addition to the article above, Article 11(1) add on the freedom to profess and practise a religion as every person has the right to profess and practice his own religion. In this article, Husin and Ibrahim (2016) explain that the constitution, however, is rather specific about freedom of religion for the Muslims. Such issues are referred to the jurisdiction of the Syariah court because they are confined to the purview of Islamic Laws. On the other hand, the constitution does specify any prohibition for the non-Muslims from professing any religion or converting to any other religion.

This study views that special restriction is put upon Muslims by the constitution to further strengthen Islam's role as the official religion of the constitution. It is supported by Husin and Ibrahim (2016) who rationalise that the constitution's defensive nature of the Islamic faith can be interpreted as not in favour of levelling all religions.

Concerning provocation, it was agreed as an important indicator of the instrument. Even though Sintang (2014) claims in her writing that the people in East Malaysia are not easily influenced by provocations, however, the challenge is not easy due to several issues that occur today. In addition, the spread over media about the disharmony Malaysia experiences regarding the inter-religious issues can be proven in actual data whether it is true or not by using a measurable instrument (Talib et al., 2014).

Cohesiveness of a society is known by sociologists as social solidarity. The experts' opinion is aligned with the sociologists' where social solidarity provides a strong bond and contributes a measure of stability to the society. The importance of solidarity as a social bond and a harmonising factor is a feature of a particular phase of the progress of human association. Social solidarity also unifies people through blood ties and bonds of alliance (Sumer, 2012).

However, acknowledgement was registered as the indicator with the lowest significance. Acknowledgement was debated among the experts as a high stakes indicator, especially when regarded from the theological perspective. However, in this study, all the indicators were discussed and considered through a social lens and not from a theological viewpoint. This resulted in low acceptance among experts in viewing acknowledgement as a socio-religious harmony indicator.

Unexpectedly, dialogue for understanding is the second least favoured on the indicators' list. Even though dialogue has been conducted for 55 years in this country, with 28 years of active dialogue, it seems to give less effect toward socio-religious harmony (Karim et al., 2014). There are several reasons to explain this result. Rahman and Khambali (2013) argue that findings and discussions of dialogue are simply known by the participants without involving resolutions and implementation on the society. This effort has ultimately led to provision of an understanding of religious

unity to become a discussion platform of the idea.

Moreover, knowledge in dialogue is left as theory alone, without implementation and practice. Thus, it brings no improvement between ties of different religious beliefs. Karim et al. (2014) too emphasise the same notion where dialogue is a method of reconciliation that builds understanding among religious adherents. Besides this, it should also play its role as a platform to minimise conflicts in any inter-religious issue that is raised. However, Karim et al. (2014) question whether these dialogues have effectively built harmony among people and minimised conflicts in practical life. By looking at the real issues that happen in the country, it is highly doubted and questionable that the implementation of dialogue is the best platform to foster socio-religious harmony in the country (Karim et al., 2014).

However, the result of the study does not justify that dialogue is not important. Previous researchers have also studied the role of dialogue and its implementation in the country (Ibrahim, 2013; Karim et al., 2014; Rahim, Ramli, Ismail, & Dahlal, 2011; Sintang et al., 2013). Based on FDM session 2, experts in this study agree that it is not the adequacy of the dialogue that determines religious harmony, but it is the effectiveness of dialogue implementation that should be revised.

CONCLUSION

This paper has presented findings of selected indicators using an expert panel by using the

Fuzzy Delphi Method (FDM). Experts agree that 22 indicators and 53 sub-indicators are important and need to be included in the instrument to measure harmony relations among religious adherents in Malaysia. Based on experts' consensus, mutual respect is the cardinal principle of maintaining religious harmony in this country. This result leads to other important indicators, namely rights and freedom, justice, and cohesiveness of the society. The overall result through the indicators and sub-indicators show a mix of functional and conflicting aspects of indicators to be included in the practical measurement of social harmony. As a conclusion, this study does not only propose indicators and sub-indicators for the index instrument but offers a perspective in the manipulation of key informants (experts) in developing significant indicators for the construction of socio-religious harmony index (SRHI) instrument contextually for Malaysia. However, due to the small population of non-religious people in Malaysia which is less than 1%, they are not considered in the SRHI index. The consideration will result in insignificant value.

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APPENDIX

Table 3
The overall indicators and respective sub-indicators for SRHI

Indicators	Sub-indicators
1 Mutual respect	1 The majority of people respect other religious adherents to celebrate their festivals
	2 The majority of people respect other religious adherents to practise their rituals
	3 The majority of people respect others to adhere to their beliefs
2 Rights and freedom of practising religious teachings	4 The majority of people are satisfied with the freedom of religious practice
	5 The majority of people are satisfied with the rights of religious practice as enshrined in the constitution
3 Inter-religious social justice towards other religions	6 The majority of religious adherents are treated justly by the communities
	7 Religious infrastructure is adequately provided for all religious adherents
	8 Religious minority adherents are treated justly by the communities
4 Provocation	9 Frequent use of provocative words against other religious adherents
	10 Frequent provocative actions against other religious adherents
	11 Frequent provocative actions against other religious practices
	12 Frequent provocative actions against other religious institutions
5 Cohesiveness of the community	13 The majority of people support inter-religious activities
	14 The majority of people are happy working with other religious adherents in the community
6 Community engagement	15 The degree of interaction within multi-religious neighbourhoods
	16 The degree of having social activity involving different religious adherents
	17 The degree of having voluntary work involving different religious adherents
	18 The effectiveness of community engagement among different religious adherents
7 Appreciation	19 The majority of people appreciate the kindness of other religious adherents
	20 The majority of people appreciate the common values of religions
8 Awareness of others' beliefs	21 The majority of people are aware of other religious rituals
	22 The majority of people are aware of other religious beliefs
	23 The majority of people are aware of sensitive issues of other religions
9 Non-violence	24 The majority of people practise non-violence in their multi-religious neighbourhoods.
	25 The majority of people are against violence towards other religious adherents for peaceful co-existence.
10 Feeling safe and secured	26 The majority of people feel safe living in a multi-religious neighbourhood

Table 3 (continue)

Indicators	Sub-indicators
11 Religious tolerance	27 The majority of people feel secure living in multi-religious neighbourhood
	28 The majority of religious leaders practise tolerance towards other religious celebrations, rituals and beliefs
	29 The majority of religious adherents practise tolerance towards other religious celebrations, rituals and beliefs
	30 The majority of religious adherents practise tolerance towards neighbours from other religions.
12 Physical and non-physical socio-religious conflict	31 The amount of major physical, religious conflicts
	32 The amount of non-physical religious conflicts
13 Peaceful feeling	33 The majority of people promote peaceful living with other religious adherents
	34 The majority of people live peacefully with other religious adherents
14 Social trust	35 The majority of people can put trust in other religious adherents
15 Religious prejudice and stereotypes	36 The degree of prejudice against other religious adherents
	37 The degree of stereotyping against other religious adherents
16 Co-existence	38 The majority of religious leaders portray positive attitude towards co-existence
	39 The majority of religious adherents portray positive attitude towards co-existence
17 Comfortable	40 The majority of people feel welcomed living together with other religious adherents
	41 The majority of people feel at ease living together with other religious adherents
18 Socio-religious tension	42 The degree of religious tension in society
	43 The amount of religious tension incidents
19 Religious discrimination	44 The degree of religious discrimination in the neighbourhood
	45 The degree of religious discrimination in the workplace
20 Dialogue and understanding	46 Adequate number of mainstream media exposure on inter-religious understanding to public
	47 Adequate number of mainstream media coverage of inter-religious understanding activities
	48 Effectiveness of dialogue activities in promoting understanding among religious adherents
	49 The majority of people acknowledge the interest of other religious adherents towards peaceful co-existence
21 Acknowledgement	50 The majority of people acknowledge the effort of other religious adherents towards peaceful co-existence
	51 The majority of people acknowledge the commitment of other religious adherents towards peaceful co-existence
	52 The majority of people have a sense of belonging to their multi-religious neighbourhood
22 Shared values of neighbourhood and friendship	53 The majority of people befriend religious adherent of other religions



Communication in Real-Time: ESL Students' Perception of "TIME OUT" Role Play

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ABSTRACT

Many ESL students struggle with communicating English language orally. The purpose of this study is to examine the effectiveness of a new role play technique which enhances speaking activities in the ESL classroom. "Time Out" role play provides students with opportunities to communicate freely and spontaneously in real-life situations. The researchers utilised a qualitative research design where 94 students (Form 4 and 5 classes) in a secondary school in Perak experienced this role play in classroom setting. Qual + qual mix-method was adopted where the dominant (big "Q") is observation and interview. The supplement (small "q") denotes grounded theory open coding. The data was collected from observations, open-ended questions and interviews with selected candidates. Three themes emerged which included influential experience learning, learning by force/compulsion and learning by observation. Role play is said to improve communication skills, enhance vocabulary and induce students for real-life communication. Time Out role play provides that opportunity for all students to communicate spontaneously within real-life like communicative situations. The result of this study indicates that Time-Out role play is successful in achieving the objectives set forth in the Oral Proficiency in English for Secondary Schools (OPS-English) and communication aspiration outlined in the National Education Blueprint (2013-2025).

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INTRODUCTION

Malaysia Employers Federation (MEF) states that more than 90% employers state the urgent need for graduates to improve their English proficiency in order to be employable. It has been reported that some fresh graduates, school leavers, and even diploma holders are unable to even construct proper sentences nor make themselves understood in a conversation during job interviews (The Star, 2017). The Education Ministry laments that students struggle and are unable to master communicating in English even after learning the language for 13 years at primary, secondary and matriculation levels..." (Hammim, 2011). The cruel reality of students who are unable to string together coherent sentences in English after 13 years of schooling, propels educators to examine the factors behind the said failure (Daily Express, 2015; Sani, 2016).

From the academia perspective, educators are of the opinion that remedial action needs to be addressed at the school level as university professors admit that they are unable to solve the said problem within the short stint of time that students are in the university (Sani, 2016). The spiraling problem of graduates' lack of communication skills is traced back to the foundation laid in English language proficiency classrooms in the formative school years, as this is where a longer period of engagement is available with the students.

In many ESL classrooms in Malaysia, there is limited access to the exposure of

conversing and speaking English language in the classroom as many students do not usually obtain much exposure to the English-speaking environment and have limited practice of speaking in English. The students' lack of communicative ability is compounded by the fact that it is not compulsory for students to speak the language as it is merely one of the subjects within the national school curriculum. As a result, with the lack of English language speaking skills, the problem of social anxiety and low levels of interpersonal confidence is escalated.

Mansor and Hasan (2015) write, "in normal classroom teaching in Malaysia, much time is spent in teaching reading comprehension and writing. Activities for development of oral skills are still lacking" (p. 5). Reports also mention that although candidates score an A for written papers in the Malaysia National Examination (SPM), they may not qualify for an A score in spoken English (Lim, 2011). In view of the said gap, the Malaysian Education Blueprint (2013-2025) has initiated the Oral Proficiency in English for Secondary Schools (OPS-English) to improve the English oral and aural skills of Malaysian students.

Despite such efforts, one of the impending factors to enhance communication skills within an ESL classroom is due to time constraints. A single 40- minute session or double-period session will not necessarily create the motivation for students to form an English-speaking-environment. Over and

above such situational constraints, teachers in ESL classrooms are required to meet the target of adequate syllabus, besides the literature component class (Abate, 2015). In brief, the researchers decided to create a new form of role play to arouse students' interest; get everybody in the class to develop and execute the role-play dialogue at real-time within the allocated constraints. Studies indicate that classroom role play activities encourage student participation to speak English in such fun filled environment (Kumaran, 2010).

Despite such intentions, there are also other constraints that add challenges in carrying out such tasks. Studies indicate that not all teachers carry out role play as a speaking activity because of time constraints, low availability of role play materials and difficulty of class control. Abidin, Osman, and Hosseini (2012) indicated that one of the possible reasons for the lack of English language communication is due to the disparity in the socio-economic background. Students feel that they are not up to par in terms of socio-economic background and thus, this leads to passiveness. Secondly, childhood experiences that do not enhance positive self-efficacy, lack of positive encouragement, love and support from parents and society may contribute to students' feeling of inferiority and insecurity. Benabadji (2007) hints the problems of class management in role play arise when there is loss of class control where only a few students are involved in role play, and that minimal learning takes place when

all students do not interact spontaneously. Role plays are deemed challenging for low proficiency students. As such, ESL teachers need to overcome ESL students' lack of English language communication skills in the language classrooms.

To overcome this communicative problem among ESL students, role play can be used as an effective tool to help students regain confidence (Islam & Islam, 2012). In "Time Out" role play, the main focus is to develop communication and creative thinking skills for quick response. In other words, minimal studies are conducted on non-verbal gestures during communication such as emotions, expression and body language. Studies have indicated that ESL teachers and researchers face difficulty in conducting role play in classrooms even with advance level students. Among the various types of hindrance in role play includes difficulty and time constraint in writing an interesting script, obtaining good volunteers as actors/actress, encountering negative response in recruiting voluntary actors/actresses, redundancy in play (when the dialogue is forgotten), and also audience boredom (Altun, 2015). There is a need to create "a holistic approach that must start from students themselves to like, love and possess the right attitude and motivation in learning English"(Daily Express, 2015).

This study is aimed at utilising role play to create effective communication and engagement among ESL students in meaningful real-life communicative tasks. The purpose of this study is to examine the

effectiveness of “Time Out” role play in developing communication skills in similar real-life situations. The research questions posed in this study are:

- 1) How do ESL students perceive the use of “Time Out” role play tasks in the classroom?
- 2) In what ways do ESL students believe that “Time Out” role play facilitates real-life interaction outside the classroom?
- 3) How does “Time Out” role play improve English communication skills?

LITERATURE REVIEW

The Performance Management and Delivery Unit (PEMANDU), the think tank of Malaysia, has cited that 50 per cent of Malaysian students fail the 1119 paper or International English Examination (Sani, 2015). In addition, Abdul Samat (2016) states that the Malaysian educational system emphasizes more on reading and writing skills. This leads to less emphasis on the speaking component as schools aim to produce good results in the national examinations. Abdul Samat reveals that there is lack of novelty and authenticity in teaching speaking in Malaysian ESL classrooms. The challenge for teachers is to motivate students to speak, inculcate confidence in using the language, which aptly implies being fearless in making errors while communicating in English in the ESL classrooms.

In the pursuit of increasing oral proficiency in second language, it is acknowledged that Malaysian students are

by nature introvert, shy and inexpressive. As such, their cultural background may have inadvertently hindered them to use English as they feel others may laugh at them for their pronunciation or lexical mistakes. This is validated in Condon and Ruth-Sahd (2013)’s study which observed student roles in traditional Asian culture to mainly sit quietly and take notes while the professor does all the talking with barely minimal participation in classroom discussions. The reasons for them to feel isolated is limited knowledge of English and also because they are non-native speakers (Idrus & Nazri, 2016).

To bridge the communicative gap and shyness among ESL students in speaking, the researchers referred to drama education and role play approaches in the ESL classroom research. Shokri and Philip (2014) conducted a study with drama activity for Malaysian pre-university students. The participants viewed drama experience as fun and beneficial to learn the language. Such method allowed participants to fully utilise the language when they were acting. The knowledge they acquired taught them how to resolve issues or problems in real-life situations and familiarise themselves with role-plays in the society. In fact, Abdul Samat (2016) studied the impact of process drama for ESL communicative ability which indicated the need for real life like situations via drama process to be engaged in using the language as opposed to learning English via the ‘chalk and talk’ technique.

Thus, the following discussion relates to the various studies on methods of instilling

interest in the use of role plays to create communicative competence in the ESL classroom. Among the suggested criteria include reference to i) “human touch” character traits, ii) real-life scenarios, iii) fitting roles for inclusiveness of all participants, iv) fair distribution of roles and lines with indicators, and v) process-oriented role play with social scenario.

Criteria 1: “Human Touch” Character Traits for Textbook Characters in Role Play

In ensuring the success of role-plays in ESL classrooms, DiNapoli (2009) tried to unite the social mindfulness instead of social stereotypes with the classic textbook characters to enhance non-fiction and literary appreciation values. Through this way, students were required to analyse the characters feelings, time, place, cultures and underlying meaning of the text, and apply logic and imagination to the scenes. Students had to relate to the characters. Among the list of questions to create such mindfulness included “Who am I? What are the circumstances?” and “What can I do to overcome the obstacles?” This means that students were required to add their own imaginations and humanise the characters from a text.

As predicted, the characters came alive when students could emotionally relate to the characters where the third person personae transformed into the first person singular characters with the use of their own imagination. This made the characters lively as there was less dependence on the

text. The drawback of this role play though, is that the character traits are fixed and students cannot speak freely on the topic.

According to Vives (2016), using task-based learning in role play can prove effective in providing real world meaningful authentic materials. In such a situation, students are provided with respective picture cards depicting emotions (picture card 1) and situations (picture card 2). For example, card 1 is an image of a person showing “guilty” and card 2 is an image of “cheating during a test”. Student A will make sentences telling about his or her feelings of guilt and need advice of Student B. Student B plays the advisor role and the play engages both students in deeper cognitive processes. Though the topic is fixed, the students find the lesson to be fun and interactive as they can manipulate it freely.

Criteria 2: Real-Life Scenario Role Play

Liu and Ding (2009) state that the more realistic the characters and scenario, the better the flexibility expected of students in communication. For role plays to be effective, the scenario must provide flexibility to replicate real-life situations in order to engage students to communicate effectively and realistically. This criterion allows students to be able to relate to certain role play situations as there can be associated personal experiences witnessed or encountered by students in a certain role play. With such criteria, students will be able to relate closely as it would possibly mirror a personal experience.

According to Kuśnierek (2015), students only use English language in the class but hardly have any opportunities to practise it outside the classroom. There is no real-life communication in social contexts (language forms and functions) for them to apply proper conversational structures in different situations, with different people in rehearsals. On the other hand, role play provides the opportunity for students to communicate in typical real-life dialogue-based activities and some examples of such scenarios include situations like ordering food in a restaurant, greetings, asking for directions and booking holidays at a travel agent. Walsh (2015) state that role plays with real-life scenarios enable more “real” like emotions to be triggered and therefore, provide a more realistic challenge for students in different roles.

Criteria 3: Support Real-life Scenario Role Play with Inclusiveness: “A Character from All Members in Specific Group”

For Heyward (2010), a structured role play enables inclusiveness among all members as each has a role to play. His form of role play typically involves three to five key organisational groups who have vested interest in a controversial issue relevant to the course of study. Thus, a discussion may ensue on an educational issue where participants can take on different groups. Students could re-enact roles such as representatives for teachers’ union, a parent lobby group, government education officials, or even act as university academics. Students

are assigned to one of these organisational groups and informed that all members of the group take on the same collective identity. Group roles reduce the anxiety students often have about role play, as they feel supported by their fictional colleagues. The participants regard such drama experiences as meaningful, emotionally engaging, and safe. From the literature review, we can conclude that role play is more appealing to students, when it is related to real life situations, in order to make the scene more logical and pragmatic.

Kamerade (2011) conducted a group role play study (total of seven groups) who replicated a real-life situation in an organisation. One group will play “entrepreneurs” who come up with an idea. The other six groups represent six different organisational behaviours (approaches) that act as “consultants” who will interact with the entrepreneurs by answering questions with advice based on that particular school of thought. During the play, intensive debates see the workability of their advice which can be applied to the organisation to enhance active interaction. In brief, group role play boosts generation and interweaving of ideas into models of practicality and feasibility.

Criteria 4: Fair Distribution of Measurement in Role Play with Indicators

Gómez Vallejo (2016) states that:

Accuracy and complexity should not be overemphasized as language output, but instead they should be

considered EFL learning goals. Role-playing makes students aware of their own learning, guiding them into more significant involvement in individual and collaborative work, and shaping them as participants in communicative interaction playing diverse roles (p. 85).

The results show compliance with “Time-Out” role play where participants are encouraged to speak and interact without further emphasis on fluency and complexity of language component.

Criteria 5: Process-Oriented Role Play with Social Scenario

Hsu (2009) analysed the reason why most teachers complain about the inconsistency between theory and the practice. The theory defines play as child-initiated activities based on children’s interest and needs, nevertheless, teachers limit children’s choices and freedom in the play. Broström (1996) created “frame play” where the teacher and learners get together to set the theme of the play, plot, setting and the content fields. This is to inspire the participants to be actively engaged to the play as they take up various job titles such as director, script writer and producer besides enacting the characters (Isenberg & Jalongo, 1997). Broström (1996) defined such social scenario role plays as one associated to “process-like play”, the goal is to cultivate learners’ initiatives in the activities. In brief, the process is more important than the outcomes. In this context, “Time-Out” is a

free expression role play which promotes learning socially and intelligently as the participants can mingle in the conversation with creative ideas by refining the points produced by the previous participants, an added value to the preceding experience.

Critical Thinking Skills and HOTS (Higher Order Thinking Skills)

Dorothy, Alias and Siraj (2016) investigated the reasons why Malaysian students lack problem solving and higher order thinking skills. The findings revealed that teachers prefer teaching facts, and asking students to listen to teachers’ explanation. The only problem-solving strategy teachers use is making analogies to similar problems. This is proven when students struggle to answer HOTS questions and are not exposed to thinking-based activities in Malaysian classrooms (Umar Baki, Rafik-Galea, & Nimehchisalem, 2016). Additionally, Zabidi and Rahman (2012) identified factors which influence the development of critical thinking skills in secondary school classrooms; are stimulus (the main theme), teacher’s encouragement, motivation and student willingness to think critically.

Paideia (2015) defines critical thinking skills as people’s ability to develop and express ideas that are: (a) clear: students learn to articulate ideas so that a listener or reader can readily understand what they mean. (b) coherent: students learn to make points that logically support each other. (c) sophisticated: students learn to acknowledge their own biases, consider other points of view, and synthesise multiple

perspectives as they develop their ideas. “Time-Out” role play is a tool to provide a communicative scenario to articulate ideas, hence developing critical thinking skills, apart from listening to other viewpoints.

Oral Proficiency in English for Secondary Schools (OPS-English) Programme

In line with in the Malaysia Education Blueprint (2013-2025), the Ministry of Education (MOE)’s English Language Teaching Centre (ELTC) implemented the OPS-English programme in 2013. ELTC published three teaching and learning materials namely, Teacher’s Companion, Student’s Handbook and Audio-Video CD (Hamzah & Cheang, 2016). The suggested teaching and learning activities were task-based whereas the content of the materials was theme-based, specifically related to students’ everyday life. Hamzah and Cheang (2016) elaborated on some obstacles in OPS: (a) limited words and colorful pictures to stimulate students’ cognitive ability to produce more spoken texts were incompatible for students with low English proficiency, (b) there were unpublished pilot studies in test-run of Ops by the Ministry of Education in 2012, (c) there was limited media room for the audio-video CD teaching activities, (d) students’ familiarity with role play activities was based on the pictures rather than about their impressions on the pictures, and (e) there was limited teaching materials for Form One students whose level of proficiency equated that of preschoolers. Thus, the

two main problems faced were student’s receptivity to pictures and video-tapes, and teachers who were unable to achieve their teaching objectives when students did not understand the lesson taught. However, Kaur Rajendra Singh, Kaur and Eng (2015) reported that OPS-English is able to improve students’ vocabulary and enhance students’ speaking ability through group discussions. In addition, Abdul Ghani and Nawari (2014) also propose drama techniques to be applied in the implementation of OPS-English.

The Benefits of Role Play in OPS-English and HOTS

The affective and cognitive domains of Bloom’s Taxonomy higher-order thinking skills (HOTS) like analysis, prediction, comparison, and synthesis are shown in role play activities. According to Grose-Fifer (2017), role-play participants receive information, respond and evaluate judgements in affective domain, recall and understand information from peers, as well as analyse and create the role in cognitive domain.

Furthermore, role play, when integrated into social and emotional learning (SEL) will develop HOTS as the students need to process new information, deepen their understanding, and synthesise complex ideas quickly (Valdes, 2017). OPS-English allows students to build the students’ vocabulary, provide non-threatening environment for speaking, create a supportive learning community and give every opportunity for students to speak the language. These components correspond to Valdes (2017)

view which states that role-plays must engage everyone in the class in all types of kinesthetic, auditory, visual, and tactile learning modalities.

Qual + qual Research Design

Janice M. Morse (2017, p. 6) writes, "Qual, the core findings usually provide the theoretical foundation of the results, with the supplementary findings (qual) providing complementary information". In such studies, the core project may be grounded theory, ethnography, phenomenology, participant observation, or even semi-structured interviews and the supplemental component (qual) may be required to expand the perspective of the core component (Morse & Niehaus, 2009). This design is used when there is a need to obtain two different perspectives on the same phenomenon and when there are different levels of analyses with different research tools such as microanalysis from video tapes and observation field notes.

The reasons for using Qual + qual in this study are that grounded theory is masterful at describing change and emotions but phenomenology does it poorly, and that each method works at a particular level of analysis (Morse & Niehaus, 2009). In addition, thematic analysis is used most frequently in grounded theory studies which tries to explain the 'story' of each pattern, code and theme from all perspectives (Chapman, Hadfield, & Chapman, 2015). The qualitative content focuses on extracting categories from the data (Cho & Lee, 2014).

In this context, the researchers try to learn what occurs in the research setting (the classroom during the role play sessions) among research participants' on what learning is like (Sengstock, 2008). A deep explanation on how the role play enhances students' communication, with further investigation on "Time Out" role play which acts as a substantive theory, requires more detailed probing. The findings emerge from the action learning sessions.

The study was more inclined to grounded theory based on the assumptions that it fulfilled five criteria of the grounded theory: a) natural setting, b) absence of a theoretical framework, c) developing area of interest, d) study on social interactions and behaviour and, e) concept and data categorisation (Glaser, 1978; Goulding, 2002; Hoda, Noble, & Marshall, 2011; Tan, 2010)

In this study, the mix method research design comprises qualitative data for both the main and complementary data findings (Creswell, 2015). The dominant (big "Q") is observation and interview. The supplement (small "q") is the grounded theory initial/open coding. Data from the core and supplementary component are pooled to develop themes or key points. The researchers opt not to use the quantitative method as the qualitative findings are based on the respondents' behaviour and feelings at real time (Bazeley, 2012).

Priest, Roberts, and Woods (2002) state that grounded theory open coding involves breaking apart the data (a sentence or paragraph of speech and series of

questioning that leads to new discoveries in the data). In addition, Charmaz (2006) states the importance of analysing fragments of data-words, lines, segments, and incidents closely during the initial or open coding and the need to “adopt participants’ feedback as in vivo codes” (p. 46). In view of the said learning activity, the researchers adopted the said research design to derive findings via open coding with in vivo data analysis approach, as words or phrases from the participants’ own language act as codes for the study (Miles, Huberman, & Saldaña, 2014).

METHODS

The respondents of this study comprised 94 students selected from Form Four and Form Five classes. There were two Form Five classes and one Form Four class. Students were from the Science, Technical and Vocational stream. The students were from three different classes, namely Form 5 Science 1 (5S1), Form 5 Vocational Technical (5VT) and Form 4 Science 2 (4S2).

Table 1
Demographic of class respondents

Class	Male	Female
5 S 1	14	19
5 V T	15	16
4 S 2	17	13
Max	1.29	1.32
Min	-0.32	-0.67

The two Form Five classes represent students who have been streamed as advance and intermediate level while the Form Four class is also an advance level class. The students had scored well in school examinations but rarely spoke English outside the classrooms. This is consistent with Swaran Singh, Samad, Hussin and Tajularipin (2015) study on Malaysian ESL teachers who found students to barely use English and only practised it during English class. This concurs with Yunus, Sulaiman, Kamarulzaman and Ishak (2013) who examined Malaysian gifted students’ difficulties in English language learning, where speaking skill is deemed as the most difficult skill to learn.

In a 60-minute class, students would enact the said role plays in the first 40 minutes and the last 20 minutes would be used for students to answer an open-ended questionnaire. The experiment would take three 60-minute classes.

A “Time Out” Role Play Floor Plan

In this scenario, three roles enacted included characters such as the Diner, Manager and Waiter. The topic was “A Customer’s Complaint in the Restaurant”. The first three students from each group took part in the role play. They were speaking freely and were script free. When a character (for example, the Manager) floundered, and would like to opt to stop the role play, he or she would make a “Time Out” gesture.

This is when the following member from his or her group would ‘jump in’ and continue the role play. The flow of conversation was observed by the audience who were always ready to replace their team members anytime. The students had to be alert and

attentive as they were required to adapt and adjust to the conversation in real-time. If the students lacked the right vocabulary, they would be assisted with relevant words or phrases. The floor plan is illustrated in Figure 1 as below.

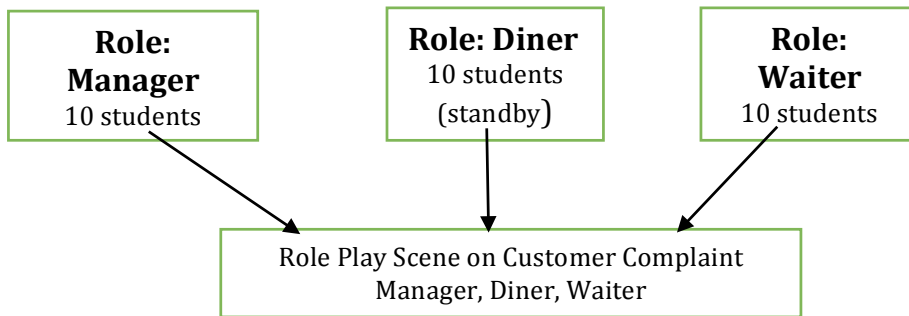


Figure 1. Floor plan of role play on customer complaint

Open-Ended Questions

After the role play, the participants were required to answer three open-ended

questions as indicated in Table 2, in accordance with the research questions. Table 2

Table 2
Open-ended questions according to research questions

Research question	Open-ended question
1) How do ESL students perceive the use of “Time Out” role play tasks in the classroom?	1) How do you feel about “Time Out” role play?
2) In what ways do ESL students believe that “Time Out” role play facilitates real-life interaction outside the classroom?	2) Do you think “Time Out” role play helps you to deal with the problems in real-life situation? If “yes”, how? If “no”, why?
3) How does “Time Out” role play improve English communication skills?	3) Do you think “Time Out” role play helps you in English communication? If “yes”, how? If “no”, why?

Observation

The observation in this study refers to drawing upon the natural behaviour, direct responses, collaboration within the group

as well as the tone of the participants in role play. The researchers observed that the students were very responsive in giving suggestions to members from their group

and answered back or responded creatively. There were encouraging responses from members of the group.

Some students would provide spontaneous and witty responses. Some even sneaked from behind and switched to different groups to play the characters. This was an unexpected observation. Some students turned to be playfully imposing when they could not stand the provocation and reprimand. The researchers would intervene when the students were off-topic. On one occasion, the diner insisted to meet the chef. This character was not planned. The researchers asked for volunteers to play the chef's role. Thus, enacting real-life like role play situations created the opportunity for students' creativity as they could relate to real-life experiences.

Semi-Structured Interview

After conducting open coding from the data pool obtained from the questionnaire, the

researchers carried out a semi-structured interview with five selected students who had participated in the role play to gain further insights into the students' perceptions.

Open Coding

Glaser (1978) refers to two types of substantive codes mainly in vivo and analytic coding. He describes in vivo codes as capturing exactly what is going on in the incident (maintaining composure) and analytic codes as explaining theoretically what is happening (identifying maintenance). In-vivo code means that a code is directly mentioned by the participant which implies to only 'what is going on there' while grounded theory would seek to understand 'what is going on there and how' as it conceptualises the relationships among the generated concepts and categories (Tan, 2010).

Table 3
An example of open codes in time-out role play study

Quotations	Open codes	Categories	Code types
"I listen and add my own ideas."	generate ideas	Facilitate real-time interaction	in-vivo code

Adapted from Tan (2010, p. 104)

Findings and Discussion

The findings indicate that 52 students found the activity to be interesting. About 40 students felt that it was fun, and a total

of 56 students revealed that it boosted their confidence and encouraged them to be brave to speak in public. Key points (repeated phrases) were derived from

each questionnaire. These key points were identified and marked for analysis and coding. In this context, the researchers renamed these key points as themes (refer to Table 4 and Table 5 for further details).

In Table 4, characters-in-play's observation notes are shown, pointing out how students worked with ESL lexical items and applied creative ideas to form hilarious dialogues during the communicative process.

Table 4
Students' role play communicative responses

No.	Theme	Responses of the role play characters (Manager, Diner, Waiter)	Notes
1	Interesting	<ol style="list-style-type: none"> 1. Diner: My mother fell because your floor oily. 2. Manager: The air-conditioner was ok just now. 3. Manager: It is not our fault but TNB. 4. Diner: See you in court if no give refund. 5. Diner: Your food is too oily. I am old people cannot take oily food. 6. Diner: Your food made me want to vomit. 	<p>Drawing on evidence Use imagination to be a real nuisance Actively experimenting with the social and emotional roles of life</p>
2	Funny/Knowing My Rights	<ol style="list-style-type: none"> 1. Manager: Only you complain, no people complain. You see my restaurant got 36 tables. There are so many tables, why you sit here? 2. Waiter: You ordered half cooked steak. 3. Diner: I cut my steak. You see my plate all blood. 4. Diner: Do you know who I am? I am a lawyer? 5. Diner: Your waiter not answering. I called him many times 	<p>Hostile attitude Emotionally involved Provocation and talk back The experience of walking in someone else's shoes, which helps to teach moral and empathy for the society.</p>
3	Quick response/ Real-life Experiences	<ol style="list-style-type: none"> 1. Diner: Post your restaurant photo to Facebook and social media. 2. Diner: I want to see the chef. 3. Manager: I give you vouchers. 4. Waiter: I give you free desserts. 5. Waiter: I give you free fruits. 6. Manager: I give you 5 % discount but you must pay the GST. 	<p>Indicates potential consequences Demonstrates knowledge of reality The world of the classroom is broadened to include the outside world</p>

In Table 5, an analysis is presented after grounded theory initial coding. It helped the researchers to come up with certain themes with in vivo coding method.

Table 5
Findings and coding analysis of “Time-Out” role play

Coding category	Themes	Number of responses	Core ideas
1. Use of “Time Out” role play	Interesting	52	Expressed thoughts using the English language Used as an approach in teaching real-time communication
	Funny	40	
	Enjoy, happy, fun	33	
	Training quick response	20	
	Exciting	13	
	Fresh and new	9	
2. Facilitate real-life interaction	Nervous	3	Developed communicative competence by expressing ideas
	Matching real-life experience	31	
	Get ideas for quick response	41	
	Think faster	7	
	Know my rights	11	
	More prepared/get experience	40	
3. Benefits of role play in improving students’ communicative competence	Confident	37	Helped develop and improve speaking skills and self-confidence
	Forced to speak English	35	
	Brave to speak in public	19	
	Learn new vocabulary and sentences	34	
	Speak more fluently	46	

The students were more engaged in “Time Out” role play compared to conventional role play in groups, either with or without a script. On the other hand, they were more relaxed and uninhibited to express what they would like to. They were exposed to the social environment and knew their rights as a consumer. This is what adds on to English communication skills.

Role play boosted the self-confidence of participants, and was helpful for them to express their ideas. They were given the opportunity to talk in class and practise using the English language in some situations while observing proper use of grammar

(Ampatuan & Jose, 2016). Thus, some of the responses provided by the characters on students’ communicative responses via role play are indicated in Table 4.

Experiential Learning

The responses provided by the students indicated their knowledge to real-life situations as well as their possible real-life experiences. Most of them agreed that they had different and creative ideas while they observed and listened to their friends. This was a very active and lively brainstorming session which was limited to a meeting table.

Overcoming Anxiety

In traditional role play, students are quite nervous since they are required to be conscious of their body language, facial expression and speaking tone. Students tend to be passive and reject opportunities to perform in public. However, the role play situation permitted the shy and introvert students to change their attitude and behaviour towards communicating orally in English language. The students demonstrated very supportive involvement in this role play session.

Enhancing Creativity and Higher Order Thinking

Some students were creative in giving ideas. They related to the use of social media. The students told the manager that they would like to post their discontent on Facebook if they could not get a refund. One of them expressed that this was an experience similar to to a career in real life. Another student revealed that he was prepared and would be able to opt for a “win-win” situation in real life. One admitted that there was fear in creating an error but it was good to overcome fear and be brave and confident in expressing the intended idea. Five students learnt more ways to answer difficult questions to satisfy customers.

One student expressed that he was offended during the role play because the diner was quite loud and aggressive in the responses. Upon interviewing the student, feedback was provided on the function of a role play. The said student was not able to handle customer complaint and said that it

was difficult to handle and tolerate people talking rudely as the character involved was a close friend.

Interview Findings

Based on the interview with selected students, the opinions expressed indicated that students were able to overcome their shyness in communicating, gained confidence in communicating effectively and were able to relate to real-life examples in such communicative situations.

The interview questions were:

1. What are the challenges you faced during the play? How do you overcome the problems?
2. What knowledge have you gained during the play and after the play?
3. How do you improve yourself so that you can perform better in the play?

Overcoming Shyness

According to Student A, the role play helped overcome shyness as one was required to express to the said situation. Student A stated, “I feel embarrassed to perform in the role play. I have no confidence to speak in English. However, after the role play, I gained experience, I will put in effort and invest time to learn how to speak English.” For Student B, the task was engaging. Student B said, “I feel nervous when my friend asked some questions which was difficult to answer. After I got used to it, I think it is fun because I can communicate well in English with the other characters.” This view is supported by Al-Mahrooqi and

Tabakow (2013) who believe that drama workshops are effective in overcoming shyness among ESL learners. Besides encouraging communication, such activities enable learners to become more outgoing and confident in using English language.

Gaining Confidence for Effective Communication

For Student C, the struggle to communicate was still apparent as there was a need for knowledge on the language system. Student C expressed, “I feel the role play is challenging as I have to link the ideas and words into proper sentences.” As mentioned by Kuimova, Uzunboylu, Startseva, and Devyatova (2016) role play curbs common ESL problems such as low proficiency and foreign language learning anxiety. Role play clearly increases students’ motivation and self-esteem as well as enhancing foreign language skills.

Associating to Real-Life Situations

Role plays enable students to associate to real-life situations. This is apparent for Student D, as the role-play reflected real life situations with real-life lessons like teamwork and team spirit when solving an issue. Student D stated, “It was a useful experience to me to play the role of manager. It feels like that of being a manager. I learn how to think of a win-win situation.” On a similar note, role play enabled learners to develop their ability to enact situations which propelled their communicative skills (Kuśnierek, 2015).

Increase in Creativity in Expressions

In the case of Student E, role plays led to a surge of ideas through such a task. Student E said, “the role play activity gave me many ideas.” Based on the responses of the activity, the students learnt how to handle critical situations by communicating the need for taking immediate action. The task allowed students to be engaged in meaningful and realistic communication. There was reference to the use of social media as a means of ensuring good service. Various creative ideas were expressed which reflected the effectiveness of real-time communicative event. The responses also indicated the benefits of such role play tasks in enhancing communicative competence in an otherwise relatively traditional classroom setting. Three viewed the task of role play as something new and challenged them to be more creative. As a type of communicative activity, role play is vital in helping the students to have meaningful and comprehensive interaction and provide an opportunity to practise fluency and accuracy while using the English language. Three students wished to have more activities on “Time Out” role play. To Fariselli, Ghini, and Freedman (2008), emotional intelligence is a developing ability and is likely that accumulated life experiences contribute to one’s emotional quotient (EQ). “Time Out” role play enabled students to develop their EQ through the real-life experience.

CONCLUSION

The study has provided the opportunity to learn about the nature of L2 oral fluency and examine role play as one of the successful strategies for obtaining real-time responses with students. The role play permitted students to a) learn the ideas from friends and explore insightful knowledge to solve problems in the future, b) use a variety of new words and make less mistakes as the role play continues. This is because they learnt from other people's mistakes and received guidance from peers or teacher, and c) use their own experiences and peers' experiences to develop thinking skills in quick response. Role play helped build students' confidence to speak English through fun and innovative methods in learning English (Ministry of Education Malaysia, 2013b). The strategies generated higher order thinking skills (HOTs) as required in the National Education Blueprint 2013-2025 (Ministry of Education Malaysia, 2013a). Time-Out role play created a stress-free environment which allowed participants to value real-life experiences and be motivated to speak. Students learnt English in a fun way and practised real-time social interaction. Future research can investigate and validate the theory with different sample groups for verification and validation.

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The Influence of Contents Utility on Students' Use of Social Media

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ABSTRACT

The birth of the Internet has changed the processes of accessibility to information. A recent addition to this sphere is Web 2.0 applications which have transformed the entire landscape of information sharing in a multilateral fashion. This has provided people with an online platform to create access and interactions with others. These sites and apps are highly effective in learning and assist students in different academic interactions. However, students understand this sphere as a source of entertainment and social interactions. This attitude of students has transformed this platform into a source of distraction, which diverts their attention from effective learning and academic achievements. The earlier inquiries made into this particular area has formally disclosed that this web can augment student in learning and academic activities. Even so, less effort has been made to inquire the factors that can motivate students to harness this sphere for their academic excellence. The current study has been conducted with objectives to understand student adoption behaviour for this platform through site usefulness and information quality. Data was collected through a survey from undergraduate students from top five research universities in Malaysia and analysed with the help of SPSS Amos (Version 18). Applying technology acceptance models of Davis et al. (1989) and unified theory of acceptance and use of technology of Venkatesh et al. (2003) as a theoretical framework, the finding shows that site usefulness and

information qualities significantly influence usage intention to use social media for academic purpose. However, information quality was found to be insignificant in encing the actual behaviour

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INTRODUCTION

Technology has revolutionised all aspects of human communications (Punnoose, 2012). The birth of the digital computers and other electronic devices has made possible the existence of our second life in cyber space (Ali, Ahmad, Yaacob, Nuri, & Endut, 2015). The most recent addition to this revolution is 'social media'. Social media has provided an online platform to people and has entirely changed ways of interaction and communication among people (Al-rahimi, Othman, & Musa, 2013; Boyd & Ellison, 2008). This platform consists of different sites and apps such as blogs, media contents, social networks, collaborative projects and virtual world (Kaplan & Haenlein, 2010). These sites and apps have marked down the distance barrier (Al-rahmi, Othman, & Musa, 2014) and are primarily used to share information. This rapid growth of social media is because of students' interest (Kirschner & Karpinski, 2010) and individuals having access to at least one application of the Internet (Hampton, Goulet, Rainie, & Purcell, 2011). Furthermore, the importance of information sharing is increasing with integrated working and collaborative learning concepts across the globe (Department of Children, Schools and Families Publication [DCSF], 2008). Social media is the new form of communication and connects people to share their information (Punnoose, 2012). It has changed the way people learn and network (United Nations Conference on Trade and Development [UNCTAD], 2012). Information sharing is a universal

method of information acquisition in the academic environments (Talja, 2002). It can positively predict students' learning performance (Junco, 2012), enhance and support academic learning (Gray, & Annabell, 2010) and is considered as a precious component of the learning process. Information sharing assists students to develop their skills and access to different types of knowledge (Lin, Featherman, & Lin, 2013). The advent of the Internet and particularly web 2.0 services has changed the entire landscape of information sharing (Miller, 2012). However, the use of these sites and apps among students is low for the academic practices (Chen & Bryer, 2012) and has affected their learning outcomes (Kirschner & Karpinski, 2010). Students consider these sites and apps as a source of entertainment (Lampe, Wohn, Vitak, Ellison, & Wash, 2011) and use it primarily for their social activities than academics (Rouis, Limayem & Salehi-Sangari, 2011). In Malaysia, prior research has concluded that this digital revolution is affecting students' reading behaviour and learning performances (Inderjit, 2014; Hamat, Embi, & Hassan, 2012). However, it has also been witnessed that this can be used to enhance students' learning and academic performance in Malaysia (Al-rahmi, Othman, & Musa, 2014; Chen & Bryer, 2012; Cheung & Vogel, 2013). Hence, this study is aimed to examine the influence of some motivational factors such as site usefulness and information quality of these applications on students' use of this sphere for learning and academic purposes.

LITERATURE REVIEW

The history of communication technology in education began with the invention of Alexander Graham Bell, then on to recording devices until the present era of interaction or two-way communication. It has been observed that survival in the global market is dependent on a number of factors such as creativity, innovation, international collaboration and competitiveness (Westera, 2012). People and societies are continuously requiring improvement of their existing knowledge. The technology helps them in enhancing their learning activities through its flexible delivery, irrespective of time, space and place. Technology also enhances the learning process by means of display and format such as, images, color graphics, audio, videos and transfer of information in a short time (Ziqing, 2013). Social media is an important means of communication of the present era (Al-rahimi et al., 2013). The widespread availability and usage of social websites and apps has permitted consumers to engage actively with one another in creating, editing and sharing different forms of textual, visual and audio contents (Selwyn, 2011).

Social media plays an important role in transforming information and making it easier to communicate with others (Edosomwan, 2011). Social media enhances learning by allowing students to exchange ideas, through interaction, collaboration and discussion. Social media can also be used in numerous ways, for example, to increase students' engagement, develop communication skills, improve interaction,

and share academic related materials for the benefit of students (Guy, 2012; Lederer, 2012). The use of social media is noticeably widespread among youngsters and students around the world. The sites and apps of this interactive sphere can assist students to access a variety of information and enhance their experiences to create more connections and encourage students' learning (Chen & Bryer, 2012; Lin, Featherman, & Lin, 2013). In fact, the young generation is the digital native who has grown up with these technologies. They are better equipped for the innovative use of social website and apps (Kaplan & Haenlein, 2010; Inderjit, 2014).

The present day youngsters, particularly students are highly connected online where they perform different communication activities. However, their online engagement is highly dominated by social interactions (Chen & Bryer, 2012). This attitude of students has turned the online platform as a source of distraction to achieve better academic performances (Kirschner & Karpinski, 2010) and has also caused motivational problems (Rouis et al., 2011). In Malaysia, the Internet penetration is comparatively high in the region, whereby, about 68% of the population has access to the Internet. In Malaysia, youngsters and students are considerably connected to the Internet and highly prefer sharing activities offered by this social media. However, this digital revolution is negatively affecting their reading behaviour, learning performance and very limited number of students are using this social sphere for learning and academic activities (Hamat, Embi, &

Hassan, 2012; Helou, Zairah, & Rahim, 2012; Inderjit, 2014).

Social media has revolutionised this century as the various sites and apps can assist every individual, particularly students in their learning. The understanding of this online media is very important to enhance students' academic performance (Guy, 2012; Lederer, 2012; Santoso, Becker, & Reeve, 2014). Social media is the mean of communication (Al-rahimi, et al., 2013). In order to enhance students' online engagement, it is necessary to first enquire their present-day online engagements (Boyd & Ellison, 2008) to regulate their online activities. In Malaysia, the young generation particularly students are decidedly connected online. To enhance their online connectivity and reduce students' digital distraction, it is important to develop strategies, sites and other activities to persuade acceptance of this interactive platform for learning and for academic activities (Al-rahmi et al., 2014; Helou, Zairah, & Rahim, 2012).

Perceived Usefulness

Perceived usefulness is the core constituent of technology acceptance models. It is the individual likelihood that exercising a specific information system will upsurge their production. Perceived usefulness is an important predictor to adoption of an information system (Davis, Bagozzi, & Warshaw, 1989; Moon & Kim, 2001; Venkatesh & Davis, 2000). Studies conducted to enquire the impact of perceived usefulness on use intention conveyed that

perceived usefulness remains a stronger contributing factor of social media adoption (Kim, Hall, Kim, & Kim, 2010), particularly in blending learning (Padilla-Meléndez, Del Aguila-Obra, & Garrido-Moreno, 2013) and adoption of social media through smart phone (Calisir, Atahan, & Saracoglu, 2013). In light of the above discussion, to examine the influence of perceived usefulness on students' intention to use this media for academic purposes, the researchers thus suggest the following hypotheses:

- H1a: Perceived usefulness positively influences the use intention of students to use social media for learning and academic purposes.
- H1b: Perceived usefulness positively influences students' use of social media for learning and academic purposes.

Information Quality

Information quality is a sub factor of technology (Pilli, 2014). Information quality (IQ) is also known as content quality (CQ) and defined as the fitness of data and information for use. In most instances, this media is a new form of interaction and helps to share user generated contents. Social media users are diverse in contexts of backgrounds, expertise, beliefs and geographical locations. This is because the quality of users' generated contents (UGC) is different and can vary from outstanding to abuse and even spam (Agichtein, Donato, Gionis, Mishne, 2008; Chai, Potdar, & Dillon, 2009). Prior studies directed to

probe the impact of information quality on successful use of e-learning by applying technology acceptance models. Their output revealed that quality factors significantly influence perceived usefulness of using e-learning system (Pilli, 2014; Roca, Chiu, & Martínez, 2006). In an online platform, information quality is the key indicator in encouraging users' experiences. Quality factors, such as information quality is the strongest predictors of users' satisfaction. Individual use of a system is based on its past experiences; if they are satisfied, they will use the system again. Student use of an online systems shows that information quality is a significant predictor of user satisfaction (Chen & Chengalur-smith, 2015). In light of the above discussion, to investigate the effect of information quality on intention to use social media for learning and academic purposes, the researchers propose the following hypotheses:

- H2a: Information quality positively influences the use intention of students to use social media for learning and academic purposes.
- H2b: Information quality positively influences students' use of social media for learning and academic purposes.

Usage Intention

Bhattacharjee refer to the various technology acceptance models (see Davis, 1989; Karahanna, 1999; Taylor & Todd, 1995) to conclude that one's 'intention' is an important predictor in acceptance or adoption

of information system (Bhattacharjee, 2001). Intention refers to a set of strategies which help to decide whether to execute or not to execute a particular action (Davis et al., 1989). It has been studied that users' intention is mandatory to the acceptance, adoption and subsequent use of various technological models (Davis et al., 1989; Venkatesh, Michael, Morris, Gordon & Davis, 2003). The same applies to social media (Al-rahimi et al., 2013). The continuous intention towards an information system is determined by its prior user satisfaction and defined intention as users' intention to continue using an online information system (Bhattacharjee, 2001). The construct of behavioural intention is the only variable that affects the actual usage. Intention is critical to predict system usage (Calisir et al., 2013). Cheung and Vogel (2013) found that students' intentions are important to predict their usage of Google applications for learning. In view of the above discussion, to investigate the influence of use intention to use social media for learning and academic purposes, the researchers thus propose the following hypotheses:

- H3: Usage intention is positively related to students' use of social media for learning and academic purposes.

Study Framework

The Technology Acceptance Model (TAM) of Davis et al. (1989) is an extension of TRA (Theory of Reasoned Action). It is one of the most popular models to measure the acceptance of technology

in information system (IS) research. The TAM constructs are the major determinants and have been widely used to predict the acceptance of new technologies. The Unified theory of acceptance and use of technology (UTAUT) is another robust model developed by combining all the existing models of acceptance or adoption behavior as a unified view. In UTAUT perceived usefulness is replaced with performance expectancy (Venkatesh et al., 2003). Perceived usefulness is an important factor that influences individuals toward a particular technology (Davis et al., 1989). It can be defined as the degree to which

the user believes that using social media would enhance his or her performance. Information quality is a significant predictor of users' satisfaction, which leads to actual system use (Roca et al., 2006). Information quality (IQ) is also known as content quality (CQ) and is generally defined as fitness of data and information for use (Chai et al., 2009). Therefore, this research uses TAM and UTAUT as base theories to understand the effects of perceived usefulness and information quality with respect to student intention and actual use of social media for learning and academic purposes.

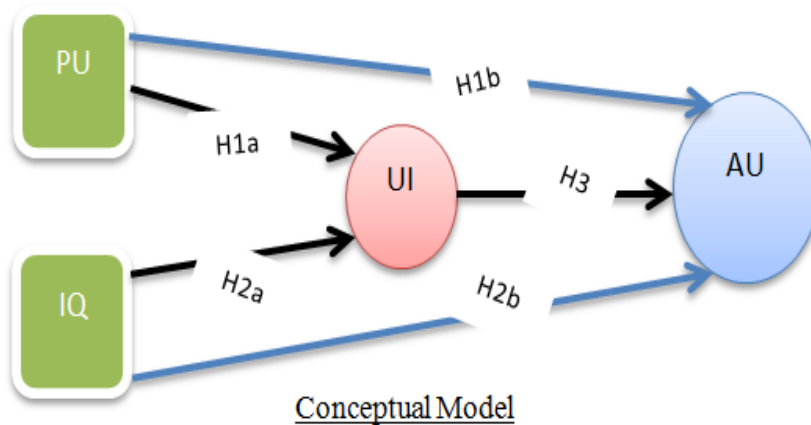


Figure 1. Conceptual framework of the study

OBJECTIVES

Social media helps to interact and access quality information. However, its use among the students for academic purposes is very low and distracts them from learning because they consider these sites fundamentally as a source of entertainment. For this

reason, to enquire student use of these sites applications for learning, the current study is carried out to achieve the following objectives:

1. To enquire the current use of social media among students of higher education in Malaysia.

2. To understand how students determine and primarily use social media sites and apps.
3. To examine the influence of site usefulness and information quality on student intention and academic use of social media.

METHODS

In the present research, data was collected through a closed-ended survey questionnaire. Since sample size plays a central role in structural equation modeling (SEM), the sample size of the current study consisted of 388 respondents that fulfilled the minimum criteria for using the structural equation modeling. The survey participants were undergraduate students from the top five research universities of Malaysia, which include Universiti Malaya (UM), Universiti Teknologi Malaysia (UTM), Universiti Sains Malaysia (USM), Universiti Putra Malaysia (UPM) and Universiti Kebangsaan Malaysia (UKM), by using the stratified random sampling technique. These universities were selected based upon similar characteristics, namely, these are public universities, top ranked universities, have similar technology infrastructure, offer degrees in a variety of subjects and most importantly, they are considered to benchmark other universities throughout the country. In the same way, undergraduates are also referred as Gen Y. They have grown up with these technologies and highly prefer this new media in their day-to-day life. This media assists students in different aspects of academics. This

young generation is considerably involved in real research activities today. The questionnaire used to collect the data consisted of 32 items. The construct of perceived usefulness was measured through six items scale of Al-rahimi et al.(2013), Cheung and Vogel (2013) and Moor and Kim (2001). The construct of information quality was measured through six items scale developed by Pilli (2014) and Roca et al. (2006). The use intention was measured by using six items scale adapted from Al-rahimi et al. (2013) and Cheung and Vogel (2013). Finally, the academic use of social media was measured by using seven items scale of Al-rahimi et al. (2013) and Cheung and Vogel (2013). All the responses were achieved on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The collected data was analysed with the help of SPSS (Version 20) and AMOS (Version 18).

RESULTS AND DISCUSSION

A total of 461 questionnaires were received. During data screening, 73 questionnaires were dropped due to missing values, univariate outliers and poor engagement of the respondents. The remaining 388 valid questionnaires were entered in SPSS for ongoing statistical analysis. The sample consisted of 52.8% males and 47.2 % female respondents. The ages of the respondents ranged from 19 to 20 years (33.5 %), 21 to 22 years (57.0 %), and 23 to 24 years (9.5 %). Besides that, Malaysia is a multicultural society. In this research, it has been given

more importance to include respondents from all possible ethnic groups. The data collected show that there were 47.9 %, Malays, 27.1%, Chinese 16.5% Indians and 8.2% of other ethnic groups. The details of demographic characteristics are shown in Table 1 below.

Table 1
Demographic characteristics of the respondents

		Number	Percentage
Gender	Male	205	52.8
	Female	183	47.2
Age	19-20	130	33.5
	21-22	221	57.0
	23-24	37	9.5
Ethnicity	Malay	186	47.9
	Chinese	105	27.1
	Indian	64	16.5
	Others	32	8.2

The first objective of the current research is to inquire the current use of social media among the students of higher education in Malaysia. In achieving this objective, the students were surveyed to identify their daily use of the Internet and social media in general and specifically in learning context. The collected responses were computed through SPSS to identify the student's use of the Internet and social media in their day-to-day life. According to the findings, 6.7% students use the Internet for one or less hour a day, 29.6% between two to three hours, 35.1% from four to five hours and 28.6% above five hours a day. The use of social media sites and apps indicate that 15.7% students use these sites / apps for one or less hour, 28.9% for two to three hours, 41.5% for four to five hours and 13.9% for above five hours a day. The graphical presentation is illustrated in the Figure 2 below.

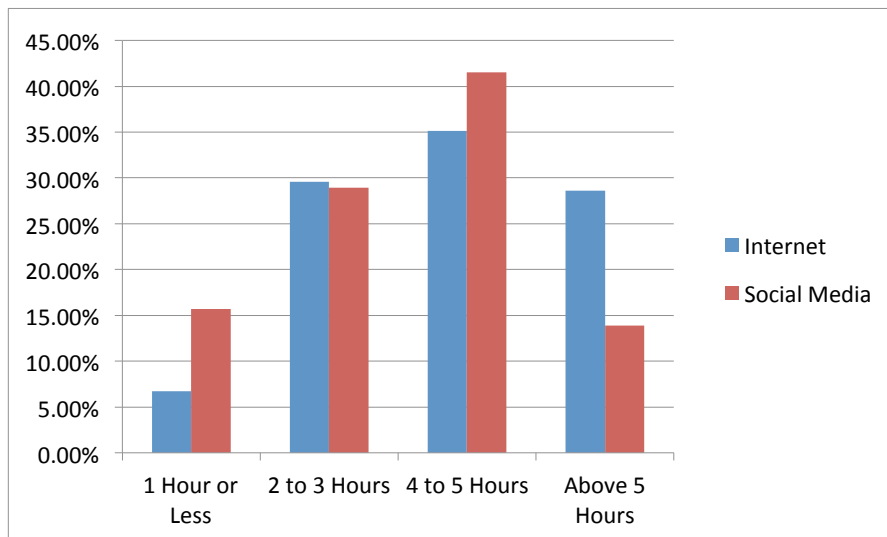


Figure 2. Daily use of internet and social media

When identifying the students' current use of social media, they were also asked how they use this interactive platform for their learning purposes. The output generated show that 60.1% among the students of higher education in Malaysia use this platform for one or less hour to carry

out their learning activities. 26.8% use this platform from two to three hours, 9.8% for four to five hours and only 3.4% use it above five hours in their day-to-day life to perform their learning and academic activities. These findings are illustrated in Figure 3 below.

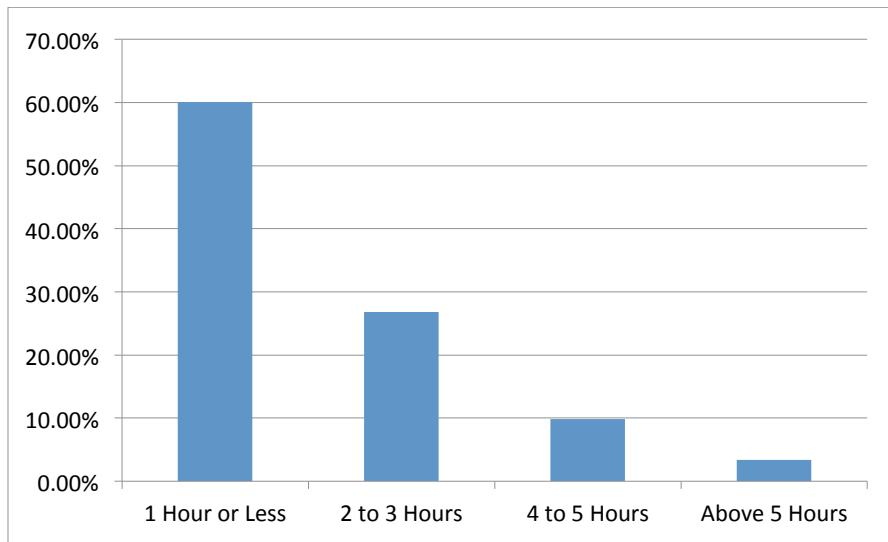


Figure 3. Daily use of social media for academic purposes

The second objective of this study is to identify how students determine and primarily use these sites and apps for their different communication purposes. The survey output reveals that students are highly aware of this online sphere. They determine the terms and properly understand the different kinds of applications which belong to this web. In context of use, 11.9% of students use these sites and apps for learning and other academic related activities. About 22.2% consider this platform as a source

of entertainment, while 22.4% use this sphere as a socialising channel and 43.6% consider these applications for all types of communication activities. Social media is an information outlet, and people use it to perform their communication activities. The output reveals that people optimize this platform in accordance with their desires and needs. However, the students' use of this interactive platform is highly oriented towards social interaction than academics. These findings are strongly supported by

a number of studies such as Lampe et al. (2011), Rouis et al. (2011), and Chen and Bryer (2012). According to these studies, students primarily use these sites and apps for different kinds of communication activities, which are highly dominated by their entertainment and social interactions. The details of description on students' primary use of this platform is presented in the Table 2 below.

Table 2
Primary use of social media

		Number	Percentage
Primary use of social media	Learning	46	11.9
	Entertainment	86	22.2
	Socialising	87	22.4
	All of them	169	43.6

The third objective of the study is to enquire the influence of usefulness and information quality on students' use of social media application for academic purposes. The structural equation modeling has been employed to test the proposed conceptual model. The structural equation modeling (SEM) generally consists of measurement and the structural model.

Measurement Model

In the measurement model, the overall fit, the suitability of factor loadings and

the variances explained through the measurement model are concluded with the confirmatory factor analysis (CFA) by using AMOS software. In the first step, the CFA performed to give a reasonable fit. However, after consulting the modification indices, standardised residual covariance and deleting items with lower loading is recommended by Hair, Black, Babin, and Anderson (2009). The results of the final CFA model were $\chi^2/df = 2.227$; $p = 0.000$; $GFI = 904$; $NFI = 0.943$; $RFI = 0.930$; $IFI = 0.968$; $TLI = 0.960$; $CFI = 0.967$; $RMSEA = 0.056$ and $PCLOSE = 0.058$ as conveyed in Table 3, which advocate that the measurement model shows a good fit to the collected data. The initial factor loading varied from .74 to .87. These values show that 24 measurement variables are meaningfully signified by their particular latent constructs. Table 3 also exhibits internal consistency of the constructs. The average variance extracted (AVE) for each construct is more than 0.50, suggesting adequate convergence. Since reliability is also an indicator of convergent validity, composite reliability (CR) for every construct is calculated. The construct reliability for all constructs is higher than 0.80, which indicates higher reliability and convergent validity for the measures.

Table 3
Internal consistency and convergent validity of the construct measures

Variable	Indicators	Factor loading (initial)	Factor loading (final)	Composite reliability	AVE
Perceived Usefulness	PU1	.74***	.57***	0.877	0.549
	PU2	.74***	.77***		
	PU3	.75***	.84***		
	PU4	.75***	.82***		
	PU5	.77***	.59***		
	PU6	.78***	.80***		
Information Quality	IQ1	.81***	.85***	0.922	0.666
	IQ2	.82***	.71***		
	IQ3	.81***	.82***		
	IQ4	.82***	.95***		
	IQ5	.80***	.83***		
	IQ6	.81***	.71***		
Use Intention	UI1	.83***	.76***	0.939	0.719
	UI2	.84***	.85***		
	UI3	.85***	.92***		
	UI4	.85***	.88***		
	UI5	.86***	.78***		
	UI6	.86***	.88***		
Academic Use	AU2	.87***	.88***	0.940	0.722
	AU3	.84***	.86***		
	AU4	.87***	.88***		
	AU5	.82***	.83***		
	AU6	.85***	.81***		
	AU7	.87***	.84***		

The affirmation of measures for the discriminant validity is singled out by comparing the construct AVE with respect to the shared variance among pairs of constructs. Succeeding in comparison of the construct's AVE with the square of correlation estimate, it is established that the variance extracted is greater than the squared correlation estimate of the constructs. As a

result, it is concluded from the current measures that the model has adequate discriminant validity. Furthermore, in light of the above findings obtained through measurement model, it is established that the models have sufficient reliability, convergent validity as well as discriminant validity.

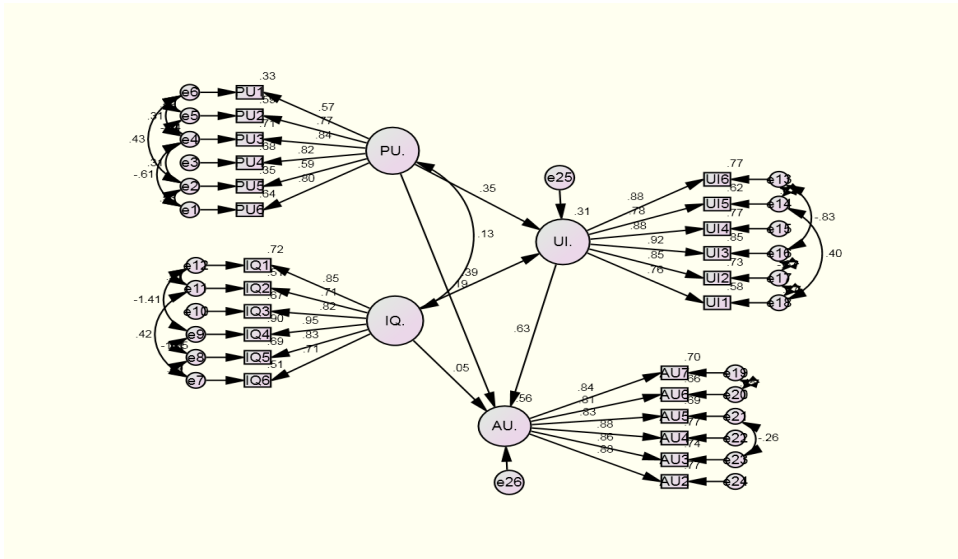


Figure 4. Structural model and hypothesis testing

Structural Model

In this particular section, the technique of the structural model was applied by using AMOS software. The structural model is practised when the fit of the measurement model is confirmed. SEM techniques assisted in detecting the effectiveness of the model and to test the hypothesis proposed. The output generated through structural

models shows a good fit, where $\chi^2/df = 2.227$, with $p = 0.000$; $NFI = 0.943$; $RFI = 0.930$; $IFI = 0.968$, $TLI = 0.960$; $CFI = 0.967$; $RMSEA = 0.056$; $PCLOSE = 0.058$. This figure indicates that the overall estimates provide an adequate empirical support for the four among five hypotheses proposed in the current run. The output generated as results of these hypotheses tested are tabulated below.

Table 4
Results of hypothesis tested

Hypothesis	Path	Standardised path coefficient	P level	Hypothesis supported?
H1a	PU \Rightarrow UI	0.353	0.000	Yes
H1b	PU \Rightarrow AU	0.188	0.000	Yes
H2a	IQ \Rightarrow UI	0.386	0.000	Yes
H2b	IQ \Rightarrow AU	0.047	0.200	No
H3	UI \Rightarrow AU	0.629	0.000	Yes

The main objective of the current run is to pinpoint the influence of perceived usefulness and information quality on students' use intention and academic use of social media for learning and academic purposes. This research set out to meet the research objectives of the proposed framework, involving three hypotheses with five paths. The output generated through AMOS demonstrated that four paths were significant and significantly influenced intention and behavior of the student to use social media for learning and academic purposes. In the proposed model, it is estimated with the help of squared multiple correlations that 30.8 percent of variance is explained by usage intention and 55.6 percent of variance is explained by actual use of social media or actual behaviour (dependent variable) towards the independent variables. Results reveal that perceived usefulness is significantly related to use intention ($\beta = .353$, $CR = 7.639$ and $p = .000$) and academic use ($\beta = .188$, $CR = 4.644$ and $p = .000$). These results support previous literature in this regard as perceived usefulness is the probability that using a specific application system will increase his or her performance. It is a core construct of TAM and influence intention and actual use of technology adoption (Davis et al., 1989; Moon & Kim, 2001; Venkatesh & Davis, 2000). Perceived usefulness is a stronger determinant of social media adoption (Kim et al., 2010). It can positively influence the use of social media in blending learning (Padilla-Meléndez et al., 2013) and acceptance of social media use

through smart phone (Calisir et al., 2013). Information quality is significantly related to use intention where $\beta = .386$, $CR = 8.563$ and $p = .000$ and insignificantly related to students' use of social media for learning and academic purposes ($\beta = .047$, $CR = 1.282$ and $p = .000$). These results are similar to previous studies for intention in adoption of an e-learning system (Pilli, 2014; Roca et al., 2006) and student use of an online system (Chen & Chengalur-smith, 2015), while the latter is similar to Ivvari (2005), while use intention is significantly related to academic use of social media where $\beta = .629$, $CR = 12.240$ and $p = .000$. These results are similar to previous studies in adoption of different types of information systems (Al-rahimi et al., 2013; Bhattacharjee, 2001; Calisir et al., 2013; Cheung & Vogel, 2013; Davis et al., 1989; Venkatesh et al., 2003). Furthermore, the results lend knowledge of the mediation effect of intention between perceived usefulness, information quality and academic use of social media. Results generated show that perceived usefulness is not mediated through intention which is not similar to Davis et al. (1989), and Venkatesh et al. (2003). However information quality is partially mediated through use intention.

CONCLUSION

Social media has become an important means of communication among all generations of Internet users. The popularity of social media applications is mainly because of youth and student interest in the online sphere around the world. The interactive sphere facilitates them in different communication, including

learning; however, it can also be a source of distraction and divert students' attention from their academic achievements. The first objective of the current research has revealed that students of higher education in Malaysia spend considerable time to perform their different communication activities. They connect online through the Internet and use different social media outlets for four to five hours in their day-to-day life. However, their use of this interactive media is low for their academic state of affairs and the majority (60%) of students prefers these sites and apps to perform learning and academic activities. The second objective, to determine students understanding with these applications shows that students' use of these sites is mixed oriented, and its use for learning is comparatively lower than socialising and entertainment. The third objective was to examine the influence of usefulness and information quality on students' academic use of social media. The finding reveals that usefulness is the best predictor in adoption of social media for learning and academic purposes, while information quality motivates usage intention but is found to be insignificant to influence students' academic use of social media. This media is the future of communication and understanding its use in learning and academics is highly important. With regard to the significance of the study, it can be said that this research has contributed in identifying the current use of social media, which is the first step to understand the students' level of

connectedness. The study has contributed to the knowledge base and analysing factors that can persuade students to start use of this interactive media for their learning and academic activities based upon empirical evidence. It is considered that educators and parents will get benefits from these findings to improve the online engagement of their children and students. Furthermore, further research is required with additional constructs, different methodology and target population to be explored in the same area.

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Enhancing Active Learning in Large Classes Using Web Clicker

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ABSTRACT

This paper presents the use of free web clicker (webclicker.org) to enhance active learning in large classroom. Web clicker platform works on any internet accessible device such as phones, pads, PCs, and laptops, without the need to purchase the clicker (hardware). The author used web clicker as pre/during/post lecture activity through concept questions. This helped to conduct formative assessment and identify misconceptions. The students also responded without peer pressure. To assess the effectiveness of using web clicker in enhancing active learning, surveys on two batches of students taking the same course in different time frame was conducted. An online survey with questionnaire consisting of five items on five-point Likert scale was used for which there were 47 respondents out of 127 students in the first batch and 76 respondents out of 151 students in the second batch. In addition, surveys through open-ended questions to get students' perception about the overall teaching and learning process were conducted. The overall result of the surveys was positive and in line with what was reported in literature. Web clicker encourages students to participate in the learning activity and motivates them to study.

Keywords: Active learning, clickers, engagement, web clicker

INTRODUCTION

Active learning is one of the student centred learning approaches to engage students

in the learning process through learning activities. It is the process of engaging the students in activities that promote analysis, synthesis, and evaluation of what they learn rather than simply listening or watching passively. There are a number of approaches to engage students in the learning activity, individually and as a team. In addition to the learning activities, it is important to assess students' learning and retention of

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the studied concept as formative assessment to provide timely feedback. Clickers can be one of the possible options to enhance active learning process in large classrooms where it is difficult to gauge students' perceptions and understanding at a given instant on a certain topic.

It is well-known that active learning leads to better students' attitude, improved students' thinking and writing, improved retention of materials, and motivates students to further study and become lifelong learners (Prince, 2004). But how can we ensure the participation of every student in large classes? How can students receive immediate feedback if there is misconception about a certain topic? How can instructors motivate students to prepare for classes by reading the learning resources and taking ownership of their learning? All these can be addressed by integrating tools such as clickers that can assist in engaging the students in the teaching and learning process without peer pressure.

Clickers are interactive instructional technologies in which students use a hand-held device / transmitter to provide electronic response to a given question. Clickers provide a mechanism for students to participate interactively and anonymously in a learning activity and express their own views and ideas, thus, promoting active learning in the classroom. Once the students respond to questions which are posed, automatically generated graphs illustrate the distribution of their response by providing immediate feedback on their learning and understanding.

Clickers are known with different names in the literature including classroom response system (CRS) (Richardson, Dunn, McDonald, & Oprescu, 2015), personal response system (PRS) (Tlhoale, Hofman, Naidoo, & Winnips, 2014), audience response system (ARS) (Cotes & Cotuá, 2014), electronic response system (ERS) (Blasco-Arcas, Buil, Hernández-Ortega, & Sese, 2013; Brady, Seli, & Rosenthal, 2013), and student response system (SRS) (Beard, Morote, & Volcy, 2013). In terms of devices and associated technologies, there are varieties of clickers in the market such as iclicker (<https://www1.iclicker.com/>), poll everywhere (<https://www.poll.everywhere.com/>) and web clicker system (<http://www.webclicker.org>) to name a few. The iclicker is subscription based while poll everywhere offers free option for limited number of participants (25). The web clicker system at [webclicker.org](http://www.webclicker.org) (Bao, 2012) is free of charge with unlimited number of students and works on any internet accessible device such as phones, pads, PCs, and laptops, without the need to purchase the clicker (hardware). Hence, the author used [webclicker.org](http://www.webclicker.org) platform for the implementation.

The most common type of questions used with conventional clickers are multiple choice and true/false questions. In web clicker short answer questions can also be used. Web clicker can be used pre and post class unlike conventional clickers which can only be used during class. Hence, web clicker can be used to gauge students' understanding before, during, or after a formal lecture.

LITERATURE REVIEW

Clickers are used to increase students' participation and assist the lecturer to quickly identify misconceptions. King (2011) used clickers to identify points of students' confusion or misconceptions in large classes. It also promotes engagement especially in large classes. Clickers can be used as one of the strategies in active learning to motivate students, make classes more dynamic, rapidly assess students' performance, and ensure more significant teacher-student interaction (Cotes & Cotuá, 2014). There are a number of success stories in the literature where the use of clickers has shown to have a positive impact on students' learning. The study conducted by Blasco-Arcas et al. (2013) investigated the effect of clickers on students' learning performance on social sciences degree students through a survey. Their finding showed that clickers positively influences active/collaborative learning and engagement which in turn improves students' learning performance. Using clickers, which provide immediate response together with cooperative social interaction, has positive impact in motivating students and contribute to understanding the topics covered (Cotes & Cotuá, 2014).

The use of clickers as a means to motivate students for pre-class assignment and preparation for class to promote learning and engagement was studied by Beard et al. (2013). Their study examined whether the student response system could promote learning, encourage participation, and motivate diverse students to prepare for class. The result of their study showed that

the use of clickers motivated the majority of students (67.7%) to prepare for class and complete pre-class assignments.

The study conducted by Tlhoaele et al. (2014) on the impact of interactive engagement activities using clickers on a control group to assess students' motivation and performance compared to traditional lecture yielded significant improvement in terms of motivation and performance. In their quasi-experimental study, Brady et al. (2013) found higher performance was observed when clicker was used in combination with instructional strategies, compared to traditional lecture without clickers. In addition, their findings suggest that metacognition from clicker use has a productive influence on the learning process. Another study by Freeman et al. (2014) showed that average examination scores improved by 6% in active learning sections compared to traditional lecturing where the failure rate was 1.5 times more likely compared to students in active learning classes. Hence, active participation of students in the learning process is much better than traditional lecture style teaching where the students are passive recipients of information.

To investigate the effect and benefits of clickers in enhancing the students' learning performance, Blasco-Arcas et al. (2013) proposed a framework that consists of interactivity, active collaborative learning and engagement as the key underlying forces. Accordingly, high level of interactivity using clickers positively influencing active learning and engagement

leading to better performance were observed in their study. Similarly, Richardson et al. (2015) devised an instrument called classroom response system perceptions (CRiSP) questionnaire to evaluate the impact of clickers on students' learning, engagement and usability. A comprehensive set of questions were developed in four phases based on the literature, research team

brainstorming, focus group feedback and factor analysis.

There are a number of studies on the use of clickers in classroom and their effect. The summary of some of the recent studies and their findings are summarised in Table 1. A more comprehensive summary of studies on the use of clickers from previous years starting from 2003, is also available in Richardson et al. (2015).

Table 1
Summary of some of the literature on clickers

Article/ Authors	Evaluation tools and sample size	Method of evaluation	Remark / Notable finding
(Gachago, Morris, & Simon, 2011)	survey (37)	Focus group discussion (30 minutes), 24 questions to record the students' responses	Student engagement where clickers grab students' attention through simplicity, novelty, and fun element
(Efstathiou & Bailey, 2012)	survey (110 & 85 in two rounds)	18 to 30 multiple choice questions, using a 7-point Likert scale	Clickers increased discussion among students and awareness of their level of knowledge with peer activities
(Brady et al., 2013)	survey (198)	A quasi-experimental design, 5-point Likert scale, multiple groups, and data triangulation	Metacognition from clicker use had a more productive influence on the learning process
(Han & Finkelstein, 2013)	Four-semester long project (74 professors and 5459 students)	Clicker Assessment and Feedback Questionnaire (CAF-Q), seven items and two main variables to assess learning and engagement	CAF-Q was used to assess and investigate students' perceptions of clicker assessment and feedback tools
(Beard et al., 2013)	Survey (36)	Nine items on 4-point Likert scale	The use of clickers motivated some students to complete assignments
(Tlhoale et al., 2014)	class tests and questionnaire (71)	pre- and post-test to evaluate students' performance scores between experimental and control groups	The interactive engagement (IE) activities with the help of clickers had a significant impact on students' performance compared to traditional lectures
(Freeman et al., 2014)	Secondary data from literature (225)	Heterogeneity analyses mean and SD comparison between well-controlled versus less-well-controlled studies.	This study support active learning and empirically validated the teaching practice in regular classrooms setting.

Implementation

Dynamics is a three credit hour core course in mechanical engineering programme for second year second semester students at Universiti Teknologi PETRONAS. On average there are about 100 students enrolled for this course every semester. In the course delivery, the author used active learning methods for lecture classes and cooperative learning for tutorial sessions. The overall teaching and learning activities were divided into three main parts as lecture, tutorial and guided learning activities (GLAs). The lecture and tutorial sessions were face-to-face and the GLAs were done by the students outside classroom. Among the variety of active learning approaches in the literature, think-pair-share (TPS), two-minute paper, concept questions, and closure review (Felder & Brent, 2009) were implemented. Web clicker was used to handle the concept questions. None of the students had used clicker before. It was the first time they were introduced to clicker and its use.

The author set up the course on web clicker (<http://webclicker.org/>) and each student subsequently registered with the course code. In pre-class setting, the theoretical aspect of the course in the form of lecture material and/or recorded video was posted on e-learning platform for the students to go through the material and study before they come to class. Once they completed, they used web clicker to answer pre-class concept questions. The concept questions were carefully crafted to spot misconception in the theory. Before the

lecture, the responses from the web clicker were reviewed and used to prepare a ten-minute summary lecture addressing critical issues and misconceptions.

During lecture, bookend approach (Smith, Sheppard, Johnson, & Johnson, 2005) was used, where after every ten to fifteen minutes of formal lecture the students were asked to discuss what they were learning in informal cooperative learning groups and respond to questions posed using web clicker. Informal cooperative learning groups also ensured that misconceptions, incorrect understanding, and gaps in understanding were identified and corrected, and that learning experiences were personalised. Furthermore, after completing the formal lecture, the students were encouraged to answer further concept questions as post-lecture activity using web clicker. The level of difficulty for post-lecture questions was higher than the pre-lecture concept questions. The post-lecture questions were used to assess knowledge retention.

RESULTS AND DISCUSSION

Using Web Clicker as Feedback Mechanism

As mentioned in the previous section, the author used clickers to get quick feedback on students' misconceptions. A sample pre-lecture concept question which the students were asked to respond to after reading the lecture note is shown in Figure 1(a). The pre-lecture web clicker response is shown in Figure 1(b). The same question was posed after going through the lecture at the end

of the lecture class to recap the concept on web clicker and the students' response is shown in Figure 1(c). As can be seen from pre-lecture response, there is considerable variation in students' choices. The in-class response shows significant improvement, with 90% of respondents getting the right

answer compared to pre-lecture (58%). However, there were still respondents who did not answer correctly after going through the lecture and other learning activities. Without the web clicker, it would be nearly impossible to get such immediate feedback from all the students in a class.

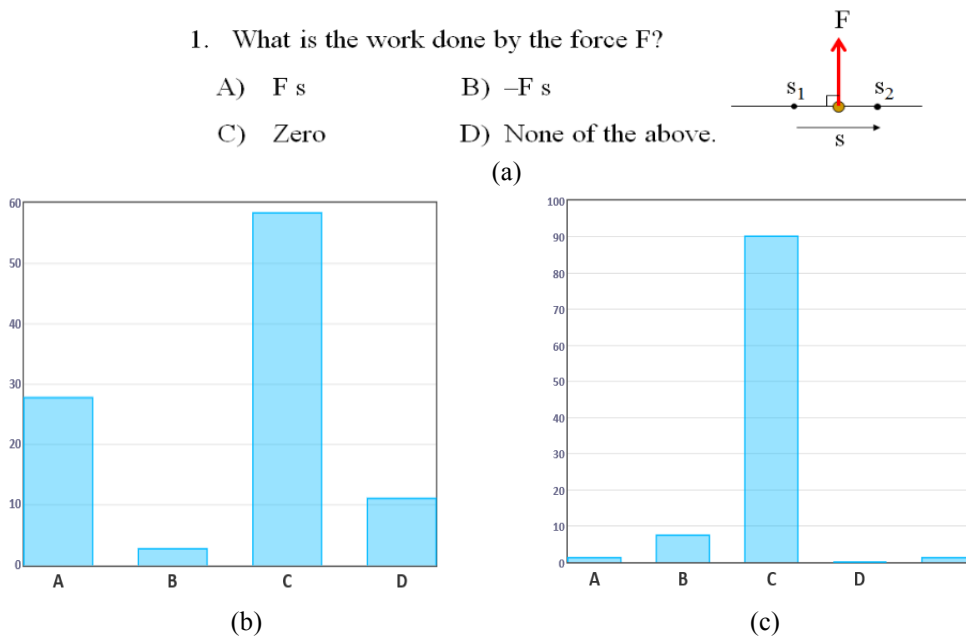


Figure 1. Sample Web Clicker Question and response (a) concept question; (b) pre-lecture response (n=36); (c) in-class response (n=81)

Survey Results

The author conducted surveys on the use of clickers after students completed the course using web clicker. The survey items were prepared to assess the effectiveness of web clicker in enhancing active learning and to know the students' perception. The questions were adopted from Richardson et al. (2015). The questionnaire consisted

of five items with five-point Likert scale ranging from strongly agree to strongly disagree. The items are:

1. Web Clicker made me read more before class.
2. Using Web Clicker helped me to think more deeply about course materials.
3. Web Clicker used in this course motivated me to learn.

4. I found this method of interaction between students and lecturer to be effective.
5. I would recommend Web Clicker to be used in other courses.

The questionnaire was sent to all students taking the course via email using Google form. A convenient sampling method was used for the response. Accordingly, there were 47 respondents out of 127 registered for the course (September 2015 semester) in the first survey and 76 respondents out of 151 registered students (May 2016 semester) in the second survey. In terms of

demography, there were 78.7% male and 21.3% female respondents in the first survey while 76.3% males and 23.7% females in the second survey. Most of the respondents were Malaysians (83% in the first survey, 94.7% in the second survey) whereas the remaining were international students. The data was coded and analysed using Statistical Package for Social Sciences (SPSS) version 22. The descriptive statistics mean values and standard deviation were used for the analysis. The descriptive statistics mean values and standard deviations of both surveys are shown in Table 2.

Table 2
Summary and comparison of descriptive statistics for both surveys

	Survey I (n=47)		Survey II (n=76)	
	Mean	SD	Mean	SD
Web Clicker made me read more before class	3.79	1.041	3.64	0.93
Using Web Clicker helped me to think more deeply about course materials	3.66	.984	3.54	0.84
Web Clicker used in this course motivated me to learn	3.6	1.035	3.63	0.74
I found this method of interaction between students and lecturer to be effective	3.72	1.036	3.91	0.89
I would recommend Web Clicker to be used in other courses	3.36	1.241	3.55	1.1

The objective of the survey was to gauge students' perception and experience on the use of web clicker and its use in active learning process. The results from the first survey indicates that the students showed more positive attitude towards the application of web clicker in active learning, which can be evidenced by the mean and standard deviation in the above table. The highest mean (3.79) proves that web clicker

really helped students read more before classes and the second highest mean (3.72) illustrates that students found web clicker as source of interaction between students and the lecturer. Students showed similar level of responses in terms of mean such as 3.66 and 3.6, in the application of web clicker that helped them think more deeply about the course materials as well as motivated them to learn. From the first survey, the

least interest was shown in recommending the use of web clicker in other courses. As continuous quality improvement and to address the concerns from the students on their workload, the number of web clicker questions, especially the post lecture questions were reduced in the second-round of implementation.

The second survey from May 2016 semester students was carried out to compare with the previous batch of students and continuously evaluate the effectiveness and students' perception on the use of web clicker. The results improved in two dimensions - for instance, students showed more interest in recommending the use of web clicker to other courses, which can be seen from the new mean (3.5), compared to the previous mean score of 3.36 in survey I. This could be due to the reduced number of web clicker activities compared to the first round. Moreover, students gave much importance to the web clicker, which is a very useful source through which the students and lecturer can interact with each other. This is also proven by the new mean of 3.91 in survey II as compared to the previous one which was 3.72. In other cases, even though the mean reduced, the standard deviation of the second survey was better compared to the first, showing some consistency in the response. The mean values of all items were within the range of 3.3 to 3.9. It means that a large majority of students had preference to use web clickers. In conclusion, both the surveys have shown that web clicker is an effective means to engage students in the learning process.

In addition to the survey questionnaire, the author used open-ended questions to get students' feedback on overall course delivery. Sample students' feedback is shown in the following snippet.

Question: In teaching this course, what do you want me to continue?

Responses:

- the usage of web clicker is good to learn the fundamental concepts of the subject ...
- web clicker, tutorial and all of them
- pre & post-class quizzes; they really get the students to engage with the subject
- continue web clicker because it helps me to get the point of lecture before going to class
- the web clicker questions. It gives me the initiative to read the slides and try to understand them before class.
- pre & post-class quizzes; they really get the students to engage with the subject

These forms of feedback are similar to what was pointed out by Mayer et al. (2009) where clickers encouraged students to participate and engage in the learning process, especially in large classrooms.

CONCLUSIONS

Web clicker has been used to enhance active learning in a large classroom. Web clicker was used to motivate the students to prepare for class using pre-lecture concept questions, in class activities and post lecture concept

questions. Web clicker can be used to pinpoint misconceptions and give formative feedback. The students use their smart phones or laptops to respond to questions posed in classes. It can also be used to take attendance. Surveys were conducted to assess the effectiveness of web clicker in enhancing active learning and gauge students' perception. The overall response from the surveys were positive. Web clicker encourages students to participate in the learning activity and motivate them to study.

This research is limited to only mechanical engineering students taking Dynamics course and studying at Universiti Teknologi PETRONAS. Further studies can be conducted with large sample from different disciplines and other universities. In future, the mixed methods approach may be used for more in-depth research on the use of web clickers.

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Reformulation of Critical Thinking in the Malaysian Tertiary Engineering Education: An Islamic Approach

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ABSTRACT

The inculcation of critical thinking elements into the engineering undergraduate programme in Malaysia as one of the national Engineering Accreditation Council (EAC) priority has been included in nation's Vision 2020 to produce competent and innovative graduates with high ethical and professional standards. One of the major concerns raised in this inculcation model is the absence of Islamic critical thinking concept. The present concept of critical thinking taught in this country fails to connect with Islamic teaching and could lead to misunderstanding of the concept among Muslim engineering students. This paper aims to explore the elements of critical thinking embedded within the engineering curriculum in Malaysian higher learning institutions with particular interest to Muslim undergraduate students. The paper adopts the conceptual approach in stating the case for current implementation practices of critical thinking at higher learning and proposes a reformulation of how critical thinking based on Islamic teaching could be embedded into the formal learning institution elaborated through three main themes: a) the embedding of critical thinking in Malaysian faculties of engineering; b) the significance of elements of Islamic critical thinking to engineering education; and c) the accessibility of the main elements of Islamic critical thinking in engineering curriculum. Based on these themes, argument will be developed to illustrate the significance of Islamic critical thinking in

relation to engineering education before finally reaching the approachable context on how to incorporate the elements of Islamic critical thinking which are yet to be identified within the content of Malaysian universities' engineering curriculum.

Keywords: Critical thinking, engineering education, Islamic education

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INTRODUCTION

The sustainability and development of engineering education in Malaysia is a great concern to many Malaysian authorities and organisations. One of the main bodies related to the issues of engineering is the Board of Engineers Malaysia (BEM) which primarily functions to register graduates and professional engineers under the Registration of Engineers Act 1967 (Revised 2015). In view of the fact that BEM (2017) will only accept for registration graduate engineers who graduate with a qualification in engineering recognised by the board, BEM thus, has the duty to set the minimum standard of engineering education to ensure the quality of its registered engineers reaches the level of global practice. Hence BEM has delegated a body to accredit engineering programmes conducted in the Malaysian higher education institutions known as Engineering Accreditation Council (EAC). EAC is embodied by both government and non-governmental organisations consisting of the representatives of the Board of Engineers Malaysia (BEM), The Institution of Engineers Malaysia (IEM), industry employers, Malaysian Qualification Agency (MQA) and the government's Public Services Department (PSD).

In general, EAC (2017) has the key responsibilities to set policy and conduct approval and accreditation evaluations which also require the body to maintain a list of accredited engineering programmes, oversee the development and operation of accreditation and mutual recognition of programmes with other countries,

as well as to foster the dissemination of developments and best practices in engineering education. Consequently, EAC has outlined some anticipated outcomes of the engineering programme where students, by the time of their graduation, are expected to attain a balanced set of skills, knowledge and behaviour that include all technical and non-technical competent attributes. According to Megat Mohd Noor (2010), the fact that critical thinking is not explicitly mentioned in any of these outcomes does not suggest that EAC has low expectations on the thinking skill to be instilled to the engineering students. In fact, the concept and skills of critical thinking, in the view of EAC, should be embedded and integrated, encompassing the whole aimed outcomes of engineering education as an effective domain of learning in addition to cognitive and psychomotor domains.

An ideal engineering academic curriculum, according to EAC, should allocate two-thirds of its components for engineering courses while utilising the remaining part for general education components that complement the technical contents of the curriculum with courses such as mathematics, computing, languages and communication as well as thinking skills. The curriculum should not just provide students with ample opportunities for analytical, critical, constructive, and creative thinking, and evidence-based decision making, but also include sufficient elements for training students in rational thinking and research methods. Nevertheless, emphasis on these non-technical components must be

placed on the understanding and acquisition of basic principles and skills of a discipline, rather than detailed memorisation of facts.

This Malaysian model of engineering education is designed to realise the nation's need for technically competent and well-respected professional engineers in ensuring the progress and sustainability of the country. Professional engineers must not only be well-versed in adapting to the rapidly expanding technological development, but also maintain a high level of ethical standard, leadership and management skills. Therefore, potential engineers must demonstrate good fundamental scientific knowledge with the development of general skills and qualities to ensure better chances to reach top management post in performing useful functions in the industry (Johari et al., 2002). More importantly, they must also be instilled with consciousness and understanding of the ethical, social, cultural, global and environmental responsibilities of professional engineers as part of the expected essential outcomes of the Malaysian engineering education with regard to the aspect of humanities. The idea of an exclusively technical and highly specialised engineering education in making an excellent engineer is being abandoned (Russo, 2007) and the need to integrate technical competencies with humanistic attributes has become clearer, particularly from the aspects of culture, values, thought and ethics.

However, the main question lies on what would be the central issue in embedding critical thinking among Malaysian

engineering students, how the elements of critical thinking based on Islamic teaching would differ from the common practice, and how these elements would be accessible in practice. In response to these questions, the author has adopted the conceptual approach in developing the case on the teaching practice of critical thinking through the lens of Islamic teaching at higher learning based on three main themes; a) the embedding of critical thinking in Malaysian faculties of engineering; b) the significance of elements of Islamic critical thinking to engineering education; and c) the accessibility of main element of Islamic critical thinking in engineering curriculum.

The Embedding of Critical Thinking in Malaysian Faculties of Engineering

The inculcation of critical thinking element into the engineering undergraduate programme in Malaysia does not only concern EAC in particular, but has also attracted the interest of the Malaysian government to attain the nation's Vision 2020 in creating an excellent centre for knowledge that produces competent and innovative graduates with high ethical and professional standards. Thus, in fulfilling the vision, the Ministry of Higher Education (MOHE) has the obligation to principally formulate a conducive environment for intellectual, professional and ethical enhancement of education system that would guide Malaysian universities to complement the technical hard skills in their academic programmes with the perfect elements of soft skills (Huzili & Shukri, 2008).

Therefore, MOHE (2006) has introduced Soft Skills Development Modules as a guideline for all Malaysian higher education institutions in order to inculcate soft skills in their education curriculum. MOHE's modules confine the application of soft skills into seven essential elements which definitely include critical thinking skill. The element of critical thinking and problem solving skills (CTPS) in this module implies the ability to think critically, be creative, innovative, analytical, and the ability to apply understanding and knowledge to new and different problems. The module identifies seven levels of CTPS skills in which three of them are obligatory to be attained by students that cover: [1] the ability to identify and analyse problems in a complex and ambiguous situations, and to provide justified evaluation; [2] the ability to expand and improve thinking skills such as explaining, analysing and evaluating discussion; [3] and the ability to look for alternative ideas and solutions. The rest of the four upper levels of CTPS skills are additional and considered as added values to the students that include: [4] the ability to think out of the box; [5] the ability to make decisions based on sound evidence; [6] the ability to persevere and to fully focus on the responsibilities assigned; [7] and the ability to understand and adapt to a new community culture and working environment.

Basically the module's framework proposes a holistic approach in the planning and implementation of critical thinking development which focuses on the combination of various programmes

involving formal teaching and learning activities, university's supporting programmes and campus life of conducive environment setting. The formal teaching and learning model, as the core academia of the faculty, is essentially important in imparting the knowledge and skills of critical thinking to the undergraduate students by using two models: stand-alone subject model and embedded model.

The stand-alone subject model implies the offering of a thinking skills subject specifically aimed to inculcate CTPS skills in a formal and explicit mode without connecting it to other subjects. The subject is normally offered either as a university's requirement subject that obligates all students to take the subject, or as an elective subject under the humanities courses whereby students are free to opt for this subject should if they wish to. Generally, this credited subject is deliberately designed to fulfil the need of the faculty and is formally considered as part of the engineering curriculum. On the whole, this model would assist the students to consciously acquire the critical thinking skills although it requires some additional credited hours that may prolong the duration of study.

In the embedded model, on the other hand, the subject is applied across the curriculum where it is engaged with the process of teaching and learning of all subjects. This model does not have a specific subject as described in the stand-alone subject model. Instead, students are trained to learn and attain critical thinking skill through formal teaching and learning

process which applies critical thinking approach without amending the initial content and learning outcomes. In general, lecturers of all courses would implement the model by assimilating appropriate elements of critical thinking skills into the lesson plan according to its level in order to achieve the learning outcomes. The MOHE's embedded model proposes the attainment of critical thinking skill to be applied through many teaching and learning methods that include problem-based learning, student centred learning, case studies, viva, group work and others.

Obviously both models have their own strengths and weaknesses. In terms of the course design, planning, implementation and assessment, the stand alone subjects would definitely have more advantages since the subjects have been developed specifically to help students to master critical thinking skills. In fact, this model also offers the possibility for the faculty to include the conception of Islamic critical thinking as part of the subject content. However, the stand alone subjects would provide less opportunity for the students to integrate the critical thinking skills with the knowledge and skills in their specialised fields.

The embedded model, in contrast to the stand alone model, requires a more challenging preparation in its course planning, teaching skills, learning environment and implementation. It also requires the lecturers to firstly master certain skills of critical thinking before applying it in their teaching across the subjects. Nonetheless, with proper planning and

implementation, this model is claimed to be very effective in nurturing the students' critical thinking skill in integration with their specialised knowledge and skills in engineering. Thus, looking at these strengths and weaknesses, it is best to combine both models since they complement each other to arrive at the aimed result.

In response to MOHE's request, indeed many Malaysian engineering faculties follow the proposed soft skill modules particularly in its formal academic curriculum by allocating a specific and credited course for critical thinking skills. The engineering faculties in Universiti Malaya (UM), Universiti Sains Malaysia (USM), and Universiti Teknologi PETRONAS (UTP) for instance, are among the Malaysian engineering faculties that have made it compulsory for their students to take a particular course which covers, explicitly or implicitly, some aspects of critical thinking.

In UM's faculty of engineering (Abd Shukor, 2010), the course Thinking and Communication Skills is compulsory for all students whose partial aim is to explicitly introduce students to critical thinking particularly on how to explain and analyse ideas, analyse and evaluate arguments, determining source credibility and recognising fallacy. In USM, all engineering undergraduate students are required to take Thinking Technique course that elaborates the concept and definition of thinking techniques and styles which are closely related to critical thinking. The course also explains the thinking tools and techniques used in decision making based

on engineering perspectives. Meanwhile in UTP, engineering students have to take a critical thinking related course, namely Thinking Skills in their foundation or pre-university programme. The course basically discusses the principles for thinking and its tools and approaches for various decision making models (Sabdin, 2011).

Moreover, some of these thinking courses have been directly discussed within the aspect of Islamic perspective and religious sanctity. IIUM (Abdullah, 2010), for example, attempts to suit to its inspiration in upholding the worldview of tawhid and Islamic philosophy of the unity of knowledge, hence, is naturally obliged to constructively integrate this particular course with Islamic values and perspectives in decision making. USM in spite of the differences with IIUM's vision and philosophy, has made the related thinking course meaningful by imparting the dimension of religious sanctity into the thinking known as *luhur* thinking.

Luhur thinking is basically a sacred vision that associates thinking with the supernatural and divine belief that links faith with the Creator. This thinking distinguishes itself from the Western type of thinking because it does not only rely on logical and scientific methods, but also includes religious elements as inspired and guided by God's revealed principles (Abdullah & Hussin, 2006). Therefore, *luhur* thinking links all human behaviour to the principle of tawhid that serves as the ultimate bridging act between the worldly endeavours and the final judgement of the hereafter.

Apart from having the concept and skills of critical thinking imparted through a stand-alone subject, there are engineering faculties in Malaysia that combine this model with the embedded model which require all courses to be infused with the elements of critical thinking. The combination of both models could be observed from Universiti Malaya's engineering curriculum which does not only make critical thinking course compulsory for all students, but requires all courses to incorporate and transfer some levels of CTPS skills as recommended by MOHE soft skills module (Abd Shukor, 2010). This combination of methods represents an integrated approach of the module that would definitely help the faculty to implant skills and dispositions of critical thinking into their undergraduate engineering students.

Nevertheless, there are engineering faculties that are reluctant in allocating specific courses for critical thinking within their formal academic curriculum, and would rather focus more on the embedded model as is practised in Universiti Teknologi Malaysia (UTM). However, this does not imply that UTM has neglected critical thinking skills as well as other important soft skills. Instead of offering a particular credited course, UTM believes that these skills should be imbued in students through appropriate teaching and learning methods that is to be applied across all courses. As such, UTM has established a Centre for Teaching and Learning (CTL) that would provide frequent training sessions for its teaching staff in order to infuse and coach

students with practical aptitude in applying critical thinking and other generic skills via various teaching and learning techniques. In fact, these particular techniques could inculcate even higher level of critical thinking compared to the theoretical approach of the stand-alone subject (Mohd Yusof, 2011).

On the whole, it is quite clear that Malaysian engineering faculties are aware of the importance of critical thinking and skills in engineering education as almost all the faculties have included this thinking element into their curriculum. However, despite all the efforts that have been put into the inculcation and enhancement of the skill, there is still much room for improvement. One of the major weaknesses that can be observed in the faculty's implementation of the MOHE modules lies in its assessment method.

The fact that the embedding of critical thinking skills and concept is an ongoing process requires continuous assessment procedure that should be carried out throughout the learning period in the university. The continuous assessment is certainly an effective way to constantly monitor the development of students while allowing the authorities to take necessary remedial actions. All students' performances and levels of critical thinking must be continuously assessed from the beginning of the first semester by lecturers and the university staff during formal education and student activities. However, not many universities are willing to perform this demanding assessment method but are quite

satisfied with the assessment from the stand-alone model.

Another concern that could be raised in this inculcation model is the superficial integration of the conceptual and practical understanding of critical thinking from the Islamic perspective. Several engineering faculties such as USM and Universiti Malaysia Perlis (UniMAP) has made efforts to associate thinking courses with the Islamic perspective such as *luhur* thinking but are not structurally aligned with the elements of Islamic critical thinking with reference its spiritual, epistemological and axiological perspectives. Even the IIUM's Faculty of Engineering only covers the general concept of Islamic critical thinking within their curriculum, which is embedded in general Islamic courses that would obviously fall short to counter the dominant Western concept of critical thinking.

To think, in Islam, is actually to perform an act of worship (*'ibādah*) and it is the thinking that would strongly induce one's belief, faith and personality. Therefore, these thinking courses should also be exposed to the Islamic concept of thinking especially the engineering faculties which have a large fraction of the applied science students' population, who potentially play a very substantial role in the development of the *ummah*. Apparently, the present concept of critical thinking taught in this country is generally based on the Western perception due to lack of study done on the establishment of Islamic critical thinking. Thus, it is a timely important effort to establish and introduce a proper

concept of Islamic critical thinking and to associate its significance to engineering education. It is important for these students or potential leaders to be instilled with proper understanding of Islamic critical thinking in order to ensure the development of a balanced, virtuous and progressive society.

The Significance of Elements of Islamic Critical Thinking to Engineering Education

Much has been written about integration of the Islamic philosophy and values into academic curricula which has advocated Muslim intellectuals to articulate the unity of knowledge and the interrelatedness of all observable phenomena. The main reason for this development would be the consciousness of the non-existent of value-free sciences or technological activities which require all decisions, particularly with regard to the development of a society, have to be carefully examined and weighed from the Islamic perspective.

Thinking is an essential part of Islamic religious duty. It is an important means through which knowledge is attained and signs are comprehended. As such, it is indeed inconceivable to refer to someone who cannot think correctly as a true Muslim. Moreover, Islam encourages men to engage in thinking in order to meet the divine expectation of human creation. While various materials and utilitarian benefits can be generated from the process of good thinking, the recognition of Allah as the sole creator of the universe and all creatures will

always remain the ultimate goal of thinking and contemplation in Islam. The impact of the recognition, however, does not only enhance one's spirituality but also improves one's social living. This explicitly explains the key function of the human mind in making sense of the realities of human and social wellbeing based on rationality in the light of revealed guidance. This recognition also reveals a sense of direction of the thinking process and activities as dictated by the mind giver in order to make thinking and life more meaningful (Al-Attas, 2001).

Even for a technological decision, Muslim engineers must critically engage their thinking to Islamic spirituality and morality factors as they believe that their judgment is directly accountable to Allah in the hereafter. This spirituality context of decision making which explains the relation between science (including engineering) and spirituality (*al-tafakkur*) must be perceived in a broader sense in which both aspects are harmoniously blended in a value system that leads towards the recognition of Allah as the sole creator. Any engineering or technological activities are ultimately related to the consequence of tawhid that stresses the Islamic worldview of the unity of creation, thus cannot be viewed in isolation of other universal factors and phenomena (Suhaimi, 1986).

The Islamic concept of spirituality is quite alien to some modern educators. Current technological judgements, instead inspired by spirituality, are widely based on the utilitarian perspective enthused by the Western ethical theory of maximising the

overall happiness of human beings that relies largely on material achievements. Science and technology have been mainly taught in our universities from the secular perspective which has dehumanised knowledge by depriving its Islamic moral and spiritual relationship. Although the matters of spirituality have been acknowledged by academics, its discussions are left on the margins and not brought to the centre of academia discourse (Shahjahan, 2005). Academics rarely express their spirituality consciousness; they may practise it outside academic confines, but fear that their spirituality expression will be ridiculed by the academe as an embodied practice or discourse.

This may result in an incident where students' attitudes towards nature seem to be less dependent and shift to a feeling that they can conquer the nature to their own advantage, and eventually to a sense of superiority of man over nature itself. Therefore, it is essential for engineering education to seek harmony with the principle of *al-tafakkur* and bring spirituality dimension to its endeavours through the correct approach and attitude because one cannot believe in tawhid and at the same time continue to pursue a secular attitude in science and technology. Moreover, it should be distinguishably rewarding to be able to reformulate these ideals based on our spiritual need in the process of becoming a part of the emerging cultural pattern for the nation (Shariffadeen, 1986).

However, the Qur'anic expression of spirituality does not only concern the *al-tafakkur* paradigm, but often articulates the structure of human cognitive consciousness together with other forms of thinking faculties of *al-'aql* (intellect-reason), *al-qalb* (heart) and *al-nafs* (soul). These faculties certainly mark the significance of Islamic epistemological elements of critical thinking in which Muslim engineers are obliged to deal with different classifications of senses and knowledge as well as different ways in deriving new information from them which lead to various levels of theory construction (Bakar, 1999). This is where the epistemological element of *al-yaqin* (certainty) plays its meaningful role in the process and concept of critical thinking. This certainty element emphasises the affirmation process of critical thinking to reach at the highest level of assertion and belief that is constructed from a certain data in searching for the truth. It would help engineers to be more decisive, determined and confident in making a sound reasoning with regard to engineering problem.

Unlike the Islamic epistemology of certainty, which engrosses knowledge with the belief in the spiritual realm and the ultimate truth, the Western discourse on the concept tend to concentrate more on the psychological aspect of epistemological development and beliefs. Thus, instead of looking for the various natures, classifications and sources of knowledge in defining the belief, the Western liberal epistemological

study in education shows more interest in generally exploring the manner of how individuals come to know, the theories and beliefs they hold about knowing and how epistemological beliefs affect cognitive processes of thinking and reasoning (Hofer & Pintrich, 1997). From this perspective, the epistemological element of certainty in engineering education is discussed within the dimension of the absolute of knowledge; whether the knowledge is fixed as a set of stone or continuously evolving as fluid relativism which makes no distinctions between evidence-based reasoning and mere opinion (King & Magun-Jackson, 2009).

This is obviously different from the Qur'anic epistemological approach which stresses more on the conceptual and methodological context of certainty in illustrating the cognitive proof structuring process as to attain the *yaqin* (firm) state. Engineering is the kind of knowledge that would bring Muslims closer to Allah as stated in the concept of tawhid. It is the area where Muslims scrutinise the beauty and benefits of natural resources as the signs of Allah's Supremacy. Thus Muslim engineers must be certain of this knowledge for it is basically a fundamental *yaqin* premise in the effort of reaching the *yaqin* state of faith.

On the other hand, it is also vital for today's engineering education to equip students with the ability to understand certainty and to handle ambiguity so that these potential engineers will be able to cope with tomorrow's complex engineering

challenges (Bordogna, 1997). In this context, not only Islamic critical thinking provides inclusive theories of knowledge and cognition, but it also decisively defines the state of certainty. The element of certainty should not be examined merely from one's perspective on the absolute of knowledge as it does not really reflect one's level of certainty. Certainty is not simply a matter of how and what one knows as discussed by Al-Farabi in his conditions of certainty. It also requires a firm self-awareness state of "knowing that one knows" as it significantly helps engineers to be thoughtful, certain and determined in justifying any technological decisions. Moreover, this Islamic concept of certainty would definitely boost Muslim engineers' self-confidence as well as firm up their belief and character in becoming well-rounded and respected engineers.

Another important aspect of Islamic critical thinking that would bring a lot of impact in Muslim engineering education is the element of *Al-'adl* (just balance). This Islamic axiological element is vital in technological decision making as it addresses the issues of religious values and ethics that are primarily set to fulfil the purpose of human life on earth. The nature of engineering, which basically deals with ways to exploit the human and material resources for the well-being of mankind, would certainly expose engineers with dilemmas and arguments that acquire critical evaluation in making righteous decisions. It is common for today's engineering practice

to confront several conflicting demands particularly with regards to social and environmental issues.

Current engineering education has exposed various methods and techniques of decision making to facilitate engineers in seeking the best functional balance between cost, reliability and performance of a product or a project. These expositions, however, will basically look into the influential constraint conditions of various contexts, mainly in the business and environmental contexts, which believe that the bigger concern lies in the economic consideration instead of religious values. Such perception obviously does not accord with Islamic education that witnesses the comprehensiveness of the problem from the basic maxims of the *sharia* encompassing sociological, political, legal, economic, philosophical and other issues.

Essentially, the content of the Qur'an includes broad and fundamental principles, and legally cognisable value judgments. Even in matters pertaining to the rationally perceptible natural rights of man, or the demand of social justice, its justification must be weighed from the God-conscious and revealed value system. This justification is indeed crucial as an all alleged 'pure rational' reasoning is easily swayed by inordinate desires, social distortions, vested interest and the corrupted authorities for natural reason and natural law have been invoked from unholy causes throughout

history (Husaini, 1980). The Islamic value judgment, therefore, provides guidance for engineering designers to comprehend and devote themselves to the virtuous personal and societal core values, and to be cautious with the misleading liberal rationalisation of base human instincts.

Therefore, it is critically important for future engineers to be ideally instilled with Islamic value systems in handling the multi criteria engineering problems. The permanent axiological cognition of certain Qur'anic verses is not only applicable to several situations in diverse frames of reference, but is also capable of multi interpretations as observed in *mutashabih* (allegorical) verses. This profound wisdom renders levels of meaning and generality of the values of the Qur'an that suits its adoption to real time-space situation. It also demands a form of axiological systemisation that distinguishes the terminal and intrinsic values from its instrumental values, and facilitates application of strategies in dealing with complex issues and ever-changing circumstances with the best solutions. Such system could be apparently perceived from various Islamic maxims of *maqasid al-syari'ah* (the objectives of Islamic law), the classification of values into the necessities (*daruriyyat*), convenience (*hajiyyat*) and embellishments (*tahsiniyyat*), as well as the classifications of knowledge into the personal (*'ayn*) and social (*kifayah*) obligation.

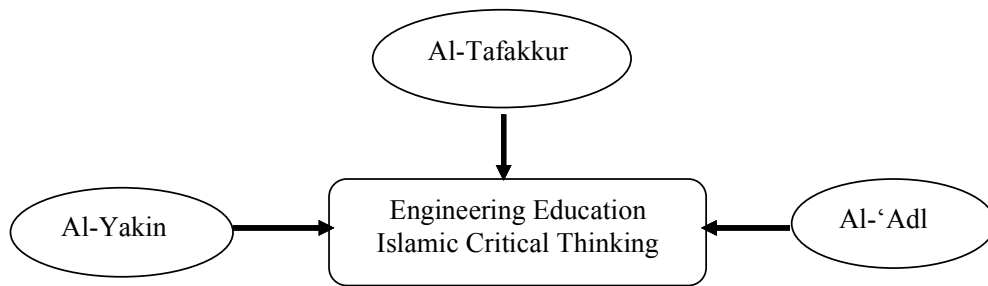


Figure 1. Engineering education Islamic critical thinking model. Adapted from Al-Amin (2013)

On the whole, the three unique elements of *al-tafakkur*, *al-yaqin* and *al-'adl* depict a distinct and appropriate perspective of critical thinking that significantly distinguish Islamic critical thinking from the current or modern critical thinking taught in engineering education. This could be summed up through the model in Figure 1. It certainly adds a more meaningful and God-consciousness insights into Muslim engineers' perception and attitude to carry out the responsibility of Allah's vicegerent on earth in creating a conducive and balanced development of humankind.

The Accessibility of the Main Elements of Islamic Critical Thinking in Engineering Curriculum

The incorporation of Islamic critical thinking into the Malaysian engineering curriculum is necessary to expose and instil in students, particularly the Muslim students, the accurate concept of Islamic critical thinking through the stand-alone subject model and the embedded model. The inculcation of the concept using the stand-alone subject model would be less

demanding than the embedded model as it should be a straightforward teaching and training method on the specific subject as explained in the preceding section. The bigger challenge would definitely be on the embedded method that requires proper suggestion on how to link and assimilate the elements of Islamic critical thinking into the engineering curriculum.

One of the constraints in making the content of Islamic critical thinking accessible to the engineering curriculum is the wide range of engineering specialisations. Although engineering has its common core curriculum that emphasises fundamental engineering science and a few interdisciplinary connections between different areas of engineering, it is normally at the foundation level which is yet to reach to its engineering specialisation area. If there is a course that can naturally demonstrate the assimilation of Islamic critical thinking into the heart of engineering, it would be engineering design. In fact, design is one of the essential dimensions of engineering knowledge. Its practice is founded in holistic, contextual and integrated visions of the world, rather than on partial visions

which make it perfect to adopt the right perception of Islamic critical thinking.

Engineering design is actually a set of activities that lead to the manufacture of existing new products such as aircraft and automobiles as well as the construction of new facilities such as refineries and steel mills. Designing products with potential benefit for mankind is a high human achievement that always includes substantial engineering content. The subject of engineering design includes solving technical problems, finding suitable and preferably optimal solutions for the given task, accounting for organisational, economic, cultural, societal, environmental, sustainability, safety and other factors including belief and religion (Ernst & Hosnedl, 2010). As such the subject would not only touch on engineering sciences, but requires a wide range of information in the issues of culture, societal organisation, economics, aesthetics and other general awareness, not to forget religious conscience, at the macro and micro levels so as to achieve the anticipated product objectives.

Engineering design, apart from its technical matter, is fundamentally a human endeavour that involves the relationships between designers, clients and manufacturers, and the ways purchasers use the designed devices. Design affects the lives of people and societies in fulfilling their various needs and wants that appear in different levels of demand for satisfaction. Thus design touches so many facets of people's daily lives. As science, engineering and technology are not value-free, to

design means to accept responsibility for creating designs for people that open doors for designers to either influence or to be influenced by the society, in a positive or negative manner, and to consciously consider the ethical or religious implications of the designs created.

Therefore, engineering design is a complex process in developing the best solution to a given problem, not only in dealing with its technical functionality but more importantly its concern on the well-being of the people in various aspects. Such process would definitely require a lot of critical thinking capabilities in making judgment on the design because once a device or system is released for public use, it embodies and structures a particular way of life; it establishes social and political relationships, permissions and prohibitions, and it is bound by the distribution of power to control people. This scenario implies the importance of Islamic critical thinking to be instilled into Muslim engineering designers so as to imbue the Islamic vision into the society through their systems and devices.

CONCLUSION

This paper has explored the significance and accessibility of Islamic critical thinking in Malaysian tertiary engineering education. Generally, the current engineering education has unanimously agreed on the need for the values of humanities in the curriculum, to complement the technical competencies, to impart proper perceptions and critical understanding of the real meaning of technological development, and to decisively

deal with the event. Thus, critical thinking is one of the essential aspects of humanities and has been largely embedded into the Malaysian faculties of engineering, either through the stand-alone subject model or the embedded model.

Nevertheless, the model of critical thinking delivered to the engineering students, Muslims particularly, seems to have fallen short in its association with the Islamic worldview and could have led to the misconception of thoughts among them. Indeed, the notions of Islamic critical thinking are very important to be established and integrated into the engineering curriculum. It certainly inculcates substantial God-consciousness factors into the Muslim engineer and develops firm, fair and noble attitude in performing the vision of Allah on earth in creating a conducive and balanced development of humankind.

As discussed in this paper, the three unique elements of *al-tafakkur*, *al-yaqin* and *al-'adl* confined within Islamic critical thinking distinguish differences with that of the current or modern critical thinking taught in engineering education, which also provide an inspiring and meaningful understanding of the discipline. The assimilation of Islamic critical thinking into the heart of engineering could be best demonstrated through the adaptation of these three elements into engineering design courses. A holistic and integrated vision of engineering design could open the path for Muslim engineers to critically appreciate, enlighten, clarify, ascertain, justify and value the design

endeavours from the context of Islamic worldview as an affirmative stand on the ultimate superiority of Allah.

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The Representation of George Town Heritage: A Two-Space Analysis of Local Alienation

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ABSTRACT

This article examines the representation of George Town Heritage within the context of George Town Heritage sites, and the annual George Town Festival (GTF). It explores the heritage sites of the various communities in Penang, Malaysia. It argues beyond the Eurocentric hegemony and representations of Penang history anchored on the British occupation of the island in 1786. There also exist other levels of hegemony and various forms of representations of the heritage in Penang. This is expressed by the narratives/historical representations of various settler communities such as the Chinese, Chinese Peranakans, Indian Muslims and the Eurasians. To showcase the manifestations of these various levels of representations of heritage, the paper adopts the method of combining historiography, participant observation and document study. The article applies Hall's (1997) notion of representation as its theoretical framework. Halls's theory articulates the asymmetry between the dominant discourse and the local discourse of Penang heritage. This asymmetry reveals absence, and alienation of certain local narratives of historical relevance. The paper interrogates the following: What sort of historical consciousness do the two-spaces of analysis espouse regarding the history of Penang? What are the historical imbalances and omissions in the representation of George Town Heritage? How can the local/oral history serve as a prognosis to the historical imbalance in the narration and

depiction of the history/heritage of Penang? The paper recommends the need for the GTF, and George Town Heritage Sites to commemorate the historical journey that emerged in Penang before 1786.

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INTRODUCTION

This article examines representation of George Town Heritage within the context of George Town Heritage sites, and the annual George Town Festival (GTF). It explores the articulation of Penang history/heritage within these two spaces. It argues that beyond the Eurocentric hegemony and representation of Penang history anchored on the British occupation of the Island in 1786, there exist other levels of hegemony and various forms of representations of heritage in Penang. These representations have often been expressed by the narratives/historical representations of various settler communities in Penang, such as the Chinese, Chinese Peranakans, Indian Muslims and the Eurasians.

The focus of the article is a study of the history of Penang and its heritage. It applies Stuart Hall's (1997) notion of representation, as its theoretical framework. The theory of representation demonstrates the asymmetry between the dominant discourse and the local discourse of Penang heritage sites. This asymmetry reveals absence, and alienation of certain local narratives of historical relevance. What is being showcased in both spaces depicts little recourse to local history, especially of the early Malay communities. Their narrative is neither celebrated nor fairly represented. The articulation of Penang heritage within the context of George Town heritage sites and the GTF constitute an imbalance in representing the history of Penang.

A two-space analysis is used to empirically demonstrate the representational

gap of Penang history/heritage. The first space of representation focuses on the George Town cultural heritage sites, as defined by the George Town World Heritage Incorporated (GTWHI). Meanwhile, the second space of analysis was predicated on GTF, an annual event that celebrates the cultural heritage of George Town, which began since 2010. The paper interrogates the following: What sort of historical consciousness do the two spaces of analysis espouse regarding the history of Penang? What are the historical imbalances and omissions in the representation of George Town Heritage? How can local/oral history serve as a prognosis to the historical imbalance in the narration and depiction of the history/heritage of Penang?

Subsequent to the introduction, this paper provides a literature review and theoretical framework, followed by the influence of colonial knowledge in the representation of history in the postcolonial states. It also incorporates the historiography of Penang within the context of colonial knowledge and its representation. The methodological framework is followed by discussions, findings and conclusions.

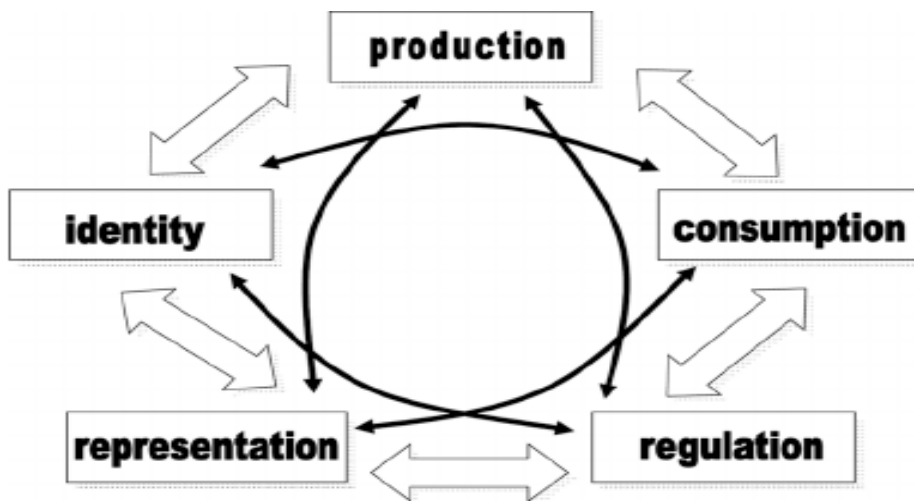
LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

The paper adopts Hall's (1997) notion of representation as an analytical framework in analysing the representation of heritage in Penang. Hall sees representation "as an act of reconstruction rather than reflection" (Hall, 1997, p. 10). This has the implication of giving an image of something other than

its true image, and such a reconstruction makes no recourse to the root, and origin of such an imagery it seeks to represent.

The power of representation is underpinned by the historical imbalance between the colonial and the local narrative in the historiography of Penang. This paper is inclined towards analysing this representational gap. Hall (2007) contends

that “representation is an essential part of the process by which meaning is produced and exchanged between members of a culture. It does involve the use of language, of signs, and images, which stand for or represent things” (Hall, 1997, p. 15.). The following representation circuit by Du Gay (1997) shows the power of the representation discourse on culture and society.



(Du Gay, 1997). The circuit of culture (London: The Open University)

Figure 1. Hall's representation circuit

Hence, representation as a cultural production is produced by the dominant discourse, and often consumed by the larger society. The pertinent question to our analysis is how cultural production, such as heritage, and historiography of Penang is produced, and consumed by the public. This process of the production of history is impelled by knowledge and power of discourse. There is imminent power at the level of representation and regulation of

the history/heritage through the regulatory agencies such as the GTWHI, and the mechanism representing cultural production in the GTF.

Likewise, the level of consumption involves communities, civil society organisations, and academia. There seems to be little attempt at challenging the hegemonic history at the consumption level. The society consumes what is produced by the world of images, symbolised by

archives, and photographs orchestrated by the state and popular platforms. Thus, Penang heritage sites, and the GTF typify these practices. Colonial knowledge is one of the important avenues of this cultural production in the postcolonial states. It has become the embodiment of the history of the new nation states (Shamsul, 2012), and the major platform under which representation of histories of postcolonial societies is articulated. The history of Penang is implicated by this. What follows is how colonial knowledge shapes the representation of history in Penang.

Colonial Knowledge and Representation of History

The intellectual tradition of colonial knowledge is discernibly part of the epistemological orientations of the social sciences in the 19th century (Wallerstein, 1999). The 19th century witnessed the two culture debates implying a separation between science and philosophy. The former connotes rational knowledge based on sensory accumulation whereas the latter is a knowledge accumulation based on the speculative, cultural and aesthetic premises. Thus, conventional social science and their epistemic practices has leaned towards the natural sciences and its empiricist epistemology (Wallerstein, 1999).

The triumph of science over philosophy or the humanities has become the fulcrum of colonial knowledge and its accumulation of knowledge about the other, and the concept of others. This intellectual commitment of

the social sciences prompted Said's (1978) work on knowledge production and culture, entitled *Orientalism*. Said contends that the Western intellectual tradition hardly made reference to the philosophy and history of the oriental societies. Rather, the societies were merely reduced to trends and statistics (Said, 1978). Therefore, local histories such as histories of the nation states, identity formations, and cosmopolitanism were misconstrued by the colonialist knowledge paradigm, termed here as local alienation.

The power of representation in discourse is imminent in the historiography of postcolonial states in Africa, Asia, and Latin America. It promoted a revisionist form of history that produced knowledge of societies based on the power of the colonial knowledge (Cohn & Dirks, 1996). Colonial knowledge refers to the ontological power of the British to codify and reconstitute certain forms of knowledge and practices in the colonies based on what suits the European eye (Shamsul, 2012). One of the vestiges of the colonial form of knowledge in the colonies is the formation of nations-states along ethnic identities as colonial tactics of divide and rule (Shamsul, 2012).

Furthermore, the alienation of local histories in the construction of knowledge of postcolonial states is an inherent feature of colonial knowledge and its power to define (Mamdani, 2012). It is noteworthy that colonial knowledge rejects and seldom recognises oral history, which appears to be the dominant historical account of the pre-colonial societies. Colonial knowledge and

its projection of colonial subjects has been a subject of discussion among scholars in Malaysia (Ibrahim, 1998; Shamsul, 2012).

The major impediment of the colonial knowledge lies in its empiricist epistemology, anchored on premises, such as expedition, observations, and statistics (Huigen, 2009). This form of knowledge production unravels the colonial sentiments, and the colonial mindset about the societies they study. According to Cohn in his book *Colonialism and Its Forms of Knowledge: The British in India*, the key modalities that inform the formation of colonial knowledge in India include the historiographic modality, the observational travel modality, the survey modality, the enumerative modality, the musiological modality, and the surveillance modality (Cohn, 1996).

Thus, the British appropriate its knowledge in the colonies through these modalities. These are exclusionary and top down in approach. They alienate orality and subjectivities of the colonised. Pertinent to this paper is the historiographic modality which entails the various representations that valorises the British presence in the colonies through erection of memorials and sacred places (Shamsul, 2012). This in a way indoctrinates the psyche of citizens around the relevance of the British in the history of the colonies. For example Fort Cornwallis, a star fort built by the British East India Company in the late 18th century is currently a major heritage site in Penang. Francis Light built the fort following the British occupation of Penang in 1786. Fort Cornwallis represents an imagery

and particular historical consciousness constructed on the image of the British occupation of Penang. Similarly, the Light statue at Fort Cornwallis as a historical memory in Penang reveals the quintessence of historiographic modality in representing the history of colonised societies.

Postcolonial Response

The revisionist history represented by colonial knowledge is challenged on account of lack of reflexivity as a counterpoise to colonial knowledge. Post-colonial theory challenges the knowledge hierarchies and asymmetries between the European worldviews (defined as eurocentric) and local world (defined as indigenous) regarding the historiography and knowledge representation of the non-occidental world anchored within the enlightenment philosophy (Arowosegbe, 2014). Thus, enlightenment as a grand universal project was prompted by western intellectual thought in the 17th century for those who wanted to make their society, rational, secular, scientific and therefore, modern (Arowosegbe, 2014, p. 310).

Postcolonial theory challenges the grand narrative of the European enlightenment. Some of the postcolonial writings that challenges the enlightenment include *Decolonising Methodologies* (Smith, 1999), *Provincialising the West* (Chakrabarty, 1997), *Resisting the Colonialist Discourse* (Yahya, 2003), and *The Myth of the Lazy Native* (Syed Hussein Alatas, 1977). These were concerned with the need to restore agency to the colonised people in

terms of their history, epistemology, and discourse against the backdrop of colonialist representational discourse.

Postcolonial studies challenge the colonial hegemony in the representation and hegemony of colonial enclaves (Abdalahadi, 2016). It assumes knowledge production based on an ideographic approach which sees the local communities as the authentic interlocutors of their history and their destiny (Nyoka, 2012). It is an effort of decolonising knowledge by restoring agency to the colonised (Smith, 1999). It unravels the significance of original and autonomous societal narrative emerging from sociologies at the periphery (Keim, 2011).

The epistemic premise of the postcolonial studies is tailored on challenging the colonial epistemological, ontological and the methodological modes of inquiry illustrated by Cohn's on the forms of colonial knowledge. They have stressed on the need to transcend colonial assumptions about non-western societies by integrating other perspectives of history. A discerning example of decolonised social science is the role of local history in the construction of knowledge of the colonised (Smith, 1999). The need to pay due diligence to the context of the natives, their language, culture, philosophy and tradition as a corpus of knowledge (Said, 1978).

These alternative epistemologies constitute what Alatas refers to alternative discourse in the social sciences (Alatas, 2000). Alternative history is defined as a process of knowledge production where the researched becomes the researcher (Smith,

1999), where the local communities become the authentic interlocutors of their history through oral narratives (Nyoka, 2012).

The Historiography of Penang and the Geopolitics of Space

The power of the representation highlighted above is underpinned by its strength of redefining the idea of place and space. One of the legacies of the colonial revisionist history of Penang is the deconstruction of the idea of space in the colonised territories. The dominant discourse and its power of representation more often than not describes Penang as *terra nullius*, a place without occupants (Murad Merican, 2014). This discourse presupposes that before the British occupation of the Island in 1786, Penang was a virgin, uninhabited land. It denies that the island was already inhabited by groups of people from the Malay Archipelago and the mainland peninsula.

The existence of Malay communities prior to the 1786 occupation/possession/cessation has been subverted by the dominant discourse. For instance, Merican (2014) traced the history of pioneer Malay communities in Penang that has not been accorded with an agency in the historiography of the island. He contends thus:

What rarely comes to public knowledge is the existence of *Batu Uban* as a town and port, not only of the Straits of Melaka, but of the Indian Ocean. *Batu Uban* was the centre of Malay-Muslim

commercial and cultural life, bonded with Batu Bara, and other areas in Sumatera and the rest of the Malay Archipelago. Both are noted as cultural and identity transition points. Thus far, whatever the sketchy history of Batu Uban and its regions tells us of links with Kedah and Minangkabau society, as well as traders and missionaries from the Indian Subcontinent and the Middle East. Batu Uban has evolved, but its legacy denied. Batu Uban is an example of the deconsecration of history and heritage. The early pioneers to the island are certainly legends. They existed but are hardly recognized in mainstream history. They had in fact, after traversing across and along the Straits of Melaka for years, finally settled in Kedah (later the island off its coast, Penang, was temporarily ceded [*pajak*] to Francis Light), and produced thousands of descendants. (p. 5)

Batu Uban is located close to Universiti Sains Malaysia campus. However, it is currently facing the politics of exclusion as an erstwhile historical place in Penang. Justifying the geographical sketch of Batu Uban in Penang, Merican contends that it was a trade hub that linked the Straits of Malacca and the Indian Ocean in the 18th century. This predates the arrival of the British East India Company. In fact, Batu Uban was marked as 'town here' in a 1763

British sketch map. The place was inhabited by the Malays in the early 1730s. It was a port then. The earliest mosque on the island is also in Batu Uban, built in 1734 (Merican, 2014, p. 5).

Approach and Framework

This study is framed within the context of the social constructivist perspective. The perspective assumes that the research phenomenon is socially constructed. This is against the backdrop of positivist epistemology that sees reality as a product of established regularised process of enquiry that privileges detachment of the researcher from the object of his research. Hence, this study places the imagination of the researcher at the heart of the research inquiry. Mills (2000), the proponent of the idea of sociological imagination contends that the critical role of social science research lies in the ability of the researcher to use the quality of his mind in understanding the intimate realities of ourselves in connection with the realities in the larger society. The study adopts a method that incorporates two or more sources (Yeasmin, 2012), to enhance the potential of enhancing the validity of the research. It therefore incorporates historiography, participant observation, and document analysis.

Historiography as a method which challenges the universality of history which has been a major legacy of positivist epistemology (Smith, 1999). It looks at the narratives from the margin, the excluded, and the marginalised. The method serves our purpose of understanding the heritage

articulation of Penang from the pre-colonial narratives of the island. The Penang heritage as exhibited in the George Town heritage sites and the annual GTF revealed absences, and an unarticulated version of history and heritage of the colonised. Historiography stresses the valorisation of ideographic inquiry in the study of local communities where emphasis is led on oral accounts and subjectivities of the colonised (Firat, 1987).

On the other hand, an observation of Penang heritage sites was undertaken by the authors. Participant observation was rooted in ethnography where the researcher established contact with the respondents and information from the respondents was elicited over a period of time. This included field observation and note taking (Valenzuela & Shrivastava, 2002). A two-day trip to the George Town Heritage site was embarked on by the authors from 17th to 8th February, 2016.

The streets which were surveyed were Lebuh Aceh, Lebu Armenian, Lebu Chulia, and Jalan Masjid Kapitan Keling. These streets were selected for their historical relevance in the ethnic formation of Penang. They harbour major Malay-Muslim heritage, Hokkien artefacts, and Indian temples. Similarly, observations also covered areas designated as UNESCO World Heritage sites. The researchers observed a prevailing influence of straits eclectic, colonial and Asian civilisations, in the various streets and cultural artefacts

in George Town. These include Indian, Chinese, and Islamic civilisations.

RESULTS

George Town Heritage Sites

George Town was designated as Penang world heritage site by the United Nations Educational Scientific and Cultural Organisation (UNESCO) in July 2008 (Musa & Kuah, 2016). This recognition was a turning point in the mapping of various heritage sites of Penang such as the reinvigoration of George Town heritage sites. The George Town World Heritage Incorporated (GTWHI) has cooperated with several non-governmental organisations (NGOS), government agencies, and conservation experts in achieving its mandate of preserving and rediscovering Penang heritage. One of the key initiatives currently embarked on by the GTWHI is the project of documenting the oral history of Penang communities (Musa & Kuah, 2016).

The George Town heritage sites illustrate the ethnic identities of the various communities that have lived on the island. This is equally reflected in the street naming of George Town, as well as the religious artefacts of various communities such as mosques, and various temples. It was observed that the heritage sites were purely old houses that once harboured prominent personalities that settled in Penang. This can be seen from the following cultural enclave defined by the GTWHI:

Sn	Names	Location
1.	St. George Church	Lebuh Farquhar, George Town
2.	Goddess of Mercy Temple	Jalan Masjid Kapitan Keling
3.	Sri Maha Mariamman Temple	Jalan Tanjung Bungah, Tanjung Tokong
4.	Noordin Family Mausoleum	Lebuh Chulia
5.	Kapitan Keling Mosque	4, Jalan Buckingham, George Town
6.	Kapitan Keling Family	14, Jalan Buckingham, George Town
7.	Han Jiang Ancestral Temple	127, Lebuh Chulia, George Town
8.	Lim Kongsu	28, Beach St, George Town
9.	Cheah Kongsu	8, Lebuh Armenian, George Town
10.	Central Fire station	Gat Lebuh Chulia, George Town
11.	Hock Teik Cheng Sin Temple	57, Lebuh Armenian, George Town
12.	Leong San Tong Khoo Kongsu	8, Cannon Square, George Town
13.	Yap Temple & Ciji Temple	Lebuh Armenian, George Town
14.	Dr Sun Yat Sen's Penang base	Lebuh Armenian, George Town
15.	George Town World Heritage Incorporated	118, Lebuh Acheh, George Town
16.	Syed Al-atas Mansion	Lebuh Armenian, George Town
17.	Acheen Street Malay Mosque	Jalan Lebuh Acheh
18.	Eng Chuan Tong Tan Kongsu	28, Beach St, George Town
19.	Boon San Tong Khoo Kongsu	No. 117-A, Victoria Street, George Town

Source: George Town World Heritage Incorporated

Figure 2. Cultural enclaves of George Town

The above table showcases the various heritage sites of Penang. What is interesting about these cultural enclaves is that they reveal the nature of settlements, identity formation and the geopolitics of space. Going by this, one can view Penang as a settler island populated by diverse ethnic communities from Asia, the Malay Archipelago and of mainland South East

Asia. These include the various Malay ethnicities especially the Minangkabaus, and the Achehnese, and from mainland Kedah, the Chinese Peranakans, the Indian Muslims and the Jawi Pekans. The pertinent question is what was the cultural symbol of the Penang communities before the British occupation in 1786?

DISCUSSION

As noted in the introduction, this paper seeks to examine the kinds of historical consciousness espoused through the Penang heritage and programmes focusing on the George Town Heritage sites and the GTF. The analysis suggests the following: (1) The Penang heritage sites depicts a settler version of Penang history. This is signified by the presence of historical, cultural and religious artefacts of various settler communities - the street naming of Penang further illuminates this version of history; (2) both George Town heritage sites and GTF suggest the importance of British occupation of Penang in 1786, via the arrival of Light. The listing of Fort Cornwallis as a historical site of Penang suggests a Eurocentric representation of history commencing in 1786.

Therefore, it is contended that little attention has been paid to oral history in the articulation of Penang heritage (Musa & Kuah, 2016). This requires the need to pay attention to the history that antedates Francis Light in 1786. Subsequently, it is also argued here that the power of representation has portrayed the history of Penang after the image of the British occupation.

It is noteworthy that the GTF aims at "preserving Penang and Malaysian unique traditions and cultures for the future generation" (Sidek, 2014). Since the inauguration of the GTF in 2010 up to the present time, it has featured cultural exhibitions, and representations by the various ethnic communities. The GTF has been successful in narrating the colourful

presence of the settler communities in Penang. However, the organisers tend to ignore the narratives and history of earliest founding communities that developed Penang and its proximities prior to 1786. Mindful that GTF is dominantly an arts festival, it has to be emphasised that the history of Penang antedates the 1786 moment, as the most prominent historical reference to Penang history.

Meanwhile, the memories of the Malay communities and other oral traditions suggest that Penang had a developed community before the British occupation of the island. Light's arrival should not be seen as the beginning of the Penang historical journey. In fact, the pioneer Malays on the island had already formed and settled in places such as Batu Uban. The organisers of the GTF need to revisit this part of history, and resonate that spirit in GTF aesthetics and performances. No account of Penang history will be complete without due reference to the pre-colonial history of the island. The important personalities worth reckoning include Dato' Keramat, Nakhoda Nan Intan (Haji Muhammad Salleh), Dato' Jenaton, Nakhoda Kechil (Ismail) and Dato' Setia.

Despite the fact that Francis Light's status was also a nakhoda¹, that of a merchant ship belonging to the Madras-based firm Jourdain, Sullivan and de Souza, he was never an employee of the English East India Company although he had a brief stint with the Royal Navy as a midshipman. While the *Seranis*² have appropriated Francis Light

¹Farsi word adopted in Bahasa Melayu which means captain

²Malay name for Eurasians

as one who invited the community to the island, GTF seems to alienate the original founding community that had mapped out the geography of Penang. This amnesia for the original founding community – the community that gave the various names of places on the island long even before Light expressed his interest from Ujung Salang (Phuket) in 1771. If at all the GTF aims at preserving Penang and Malaysia's unique traditions and cultures for future generations as stated in the GTF programme booklet, then the island's historical identities and heritage should not be subdued. It must be represented and narrated.

It needs to be further stressed that prior to 1786 the Malay communities had settled in the island decades before. Hence, reference to Light and the 1786 moment is a memory of the colonial past. The years 1734 and 1749 are equally significant for they are connected to the personalities who, like Light, have a history, a genealogy and numerous descendants contributing to the history and development of the nation and the region. People appear to be oblivious of the two dates and may not see the significance of events prior to 1786.

Both the GTF and the George Town heritage sites seem to be a representation of the colonial past, without reference to the earlier past on the history of Penang island and George Town. The latter two are recorded in the memory and experiences of Malay stories. Then, oral histories should be an important repository of documenting the history of Penang.

The historical narratives seem to be one sided emphasising one aspect at the expense of the other. If Light had contacts with the two Sultans of Kedah, then it is conceivable to stress that the early Malays in the geographical proximities also made contact with the Sultan. It is pertinent to refer to Mencari Bako (1983) by Abdul Aziz Ishak,

The GTF needs to revisit the oral histories of Penang island and its proximities. Similarly, the George Town heritage sites need to encompass pre-colonial historical places such as Jelutong, Gelugor, and Batu Uban. These communities created the original founding community in Penang, whose descendants are now concentrated in such areas as various parts of Kedah and Perak, the Klang Valley, and throughout Malaysia and parts of Southeast Asia and beyond. Some are beacons and leaders of the nation's political and intellectual life. They founded institutions that were to be integral to the nation's history. The GTF platform must commemorate that journey that began from Penang. With no founding narrative, the GTF and Penang heritage sites would be an alienation of local history.

CONCLUSION

The two spaces of heritage discussed above indicate two major trajectories of Penang history. First, it shows the relevance of the colonial history in the representation of Penang dating back to the British occupation in 1786. Second, the major cultural spaces outlined by George Town World Heritage

sites indicate the relevance of the said settler communities. Most of them settled on the island in early part of the 19th century as can be seen in the historiography of various heritage sites. We extrapolate that the current Penang cultural heritage and history show little about the presence of Malay communities and their heritage on the island. Hence, Penang, as is portrayed historically, and contemporaneously, represents a colonial past, and a settler society of various communities.

It is the contention of this paper that what is presented as George Town heritage as articulated in both spaces represent a dominant revisionist discourse, with its power of defining and representing. Such a discourse says little about the history of earliest founding community of Penang (Malay communities), whose discourse was not narrated, nor fairly represented. It is evident that both the Penang heritage sites and the GTF portrayed a colonial vis-à-vis multicultural history of Penang. The former gives eminence to Francis Light as the founder in 1786, while the latter depicts the significance of George Town as a settler community.

However, these hegemonic history should not in any way preclude the presence of Malay communities prior to both Francis Light and the advent of subsequent settler communities, which suggest the overarching influence of the paradigm of representation in the discourse of culture and heritage. It exacerbates the assimilation of the

dominant paradigm, through hegemony and the manufacturing of consent. We contend that this representation is bias, and ignorant of the earliest history of the Malay communities on the island such as Batu Uban, Tanjong Penaga and Jelutong. Narrating and representing history requires attention, in re-reading and decolonising the narrative through oral / local history, as a counter-hegemonic response to the dominant paradigm.

This requires the state, civil societies and the academia to review the rich resources in the humanities (local history, culture, civilisation, values) in charting a new vision for Penang historiography. This will contribute in unveiling the contributions, and presence of pre-colonial communities and their heritage. This study shows that Penang history, which is presented in the two spaces mentioned is an aberration to local history.

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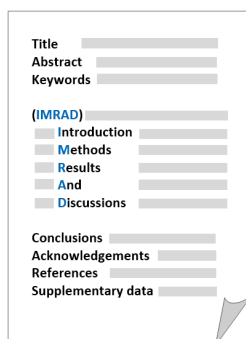
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