



King Saud University
**Journal of King Saud University –
Computer and Information Sciences**

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A model of using social media for collaborative learning to enhance learners' performance on learning

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Received 6 August 2016; accepted 16 September 2016

KEYWORDS

Social media usage;
Collaborative learning;
Higher education and learners' performance

Abstract Social media has been always described as the channel through which knowledge is transmitted between communities and learners. This social media has been utilized by colleges in a way to encourage collaborative learning and social interaction. This study explores the use of social media in the process of collaborative learning through learning Quran and Hadith. Through this investigation, different factors enhancing collaborative learning in learning Quran and Hadith in the context of using social media are going to be examined. 340 respondents participated in this study. The structural equation modeling (SEM) was used to analyze the data obtained. Upon analysis and structural model validities, the study resulted in a model used for measuring the influences of the different variables. The study reported direct and indirect significant impacts of these variables on collaborative learning through the use of social media which might lead to a better performance by learners.

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1. Introduction

In a comparison between the internet used today called as Web 2.0 and the one we used before called 1.0, it is reported that the former is better than the latter in terms of interactivity (Kaplan

and Haenlein, 2010). These researchers also add that the internet of these days provide many interactive items like Facebook, Blogs and YouTube. According to Bercovici (2010), students use social media in general for the purpose of interactive engagement in the social environment. Recently, Higher education is shifting attention to the use of social media in teaching and learning after highlighting research community in the traditional view. Anderson (2012) mentions some conditions under which the use of social media can lead to active collaborative learning in higher education. These conditions are represented by the active collaborative learning and the motivation of cognitive skills reflection and metacognition.

Some researchers like Larusson and Alterman (2009) and Ertmer et al. (2011) reported the positive influence of social

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Peer review under responsibility of King Saud University.



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media on the process of learning leading to a better level of performance. For example, Junco et al. (2011) examined the use of Twitter and Blogs while Novak et al. (2012) investigated the use of several types of social media. They all agreed that these tools play a positive role in enhancing the performance of learners and encourage active collaborative learning at the level of higher education. Much of the research done in the area of social media adopts the model called TAM. From the perspective of other studies, social media is reported to use either utilitarian or hedonic technologies based on corresponding TAM foundations. The hedonic nature of social media is confirmed through literature such as Al-Rahmi et al. (2014), Sledgianowski and Kulviwat (2008), and Hu et al. (2011) which reports positive influences of perceived enjoyment and perceived ease of use on social media adoption behavior. On the other hand, the utilitarian nature of social media is still vague (Ernst et al., 2013; Al-Rahmi et al., 2015). On the light of this, the current study is considered a distinguished effort since it explores TAM factors influencing collaborative learning to learn Quran and Hadith in the context of social media use. At the level of Malaysian higher education, the current study attempts to examine the impact collaborative learning has on the learners' performance through the use of social media. While the second part of the current study deals with the research model and verifies the different hypotheses, the third part is designed to explain the methodology applied as well as the process of data collection. The last two part of the study involve illustrating the findings and providing a summary of the main points and results respectively.

2. Social media use in higher education

Recently, the interest of higher education has shifted from the concentration on knowledge skills into highlighting long-learning in terms of skills (Junco, 2012). One type of these skills that receive special attention by employers is the collaboration skills. The topic of active collaborative learning has received much attention by researchers and scholars. For example, Dillenbourg et al. (1995) described this type of learning as the situation whereby two or more learners engage in the process of learning new knowledge. Several social media tools studied such as MySpace, Facebook and Twitter are tools that could be used for educational purposes. The current study is using the general term of social media for sweeping generalization.

Through the use of social media in the context of learning, high school students will have positive tendencies to appreciate creative work, support toward peer alumni, and have mutual support with the school. Through literature, several factors in relation with higher education were examined. For example, faculty use was examined by Al-Rahmi et al. (2014), Ajjan and Hartshorne (2008), Chen and Bryer (2012), and Roblyer et al. (2010) while student engagement was examined by Junco et al. (2012) and Al-Rahmi and Othman (2013). Moreover, the relation with academic achievement was also explored by Junco (2012), Junco et al. (2011) and Al-Rahmi and Othman (2013). In their study, Yang et al. (2011) found that interactive blogs play a significant role in the peer interaction among students leading to a better academic achievement. In another study, it was reported that the college students were negatively influenced by the time spent on Facebook and it negatively

affected their performance. It also has a weak relation with the time provided for class preparation. The transformation of personal learning environments to be a new pedagogical approach is one of the most potential benefits of social media and this transformation aims to improve self-regulated learning (Dabbagh and Kitsantas, 2011). Through this transformation, students will be provided the advantage of having control over their learning activities. Flickr, Wikis and Blogs are examples of web based tools that can be utilized for the purpose of improving learning environments.

3. Research model

Constructivism Theory and Technology Acceptance Model (TAM) are the main grounds from which the research model is originated. The former theory highlights and proposes that interaction among learners and their instructors is an important stage in reaching engagement and active collaborative learning (Vygotsky, 1978; Carlile et al., 2004). The latter model mentioned above is also utilized in this research as it highlights the topic of new technology adoption being strongly influenced by perceived usefulness and ease of use. Much of the research in this field uses TAM, which was developed by Davis (1989), as a theoretical model. The reason why TAM is heavily used is because it determines the future of any computer technology in terms of acceptance or rejection. See Fig. 1.

3.1. Perceived usefulness

As proposed by the TAM model, the use of IT tools among users heavily depends on their perceived usefulness (Davis, 1989; Venkatesh and Davis, 2000; Venkatesh et al., 2003). In one of the studies done in this area, Jackson et al. (1997) reported that there is no relation among perceived usefulness and attitude and social media. Moreover, usefulness was found to have a negative relation with the use of information system (IS) (Venkatesh and Davis, 2000). Other researchers also reported that there is no indication of the perceived usefulness-actual use relationship (Szajna, 1996; Lucas and Spitler, 1999; Bajaj and Nidumolu, 1998). An example for that would be that mentioned by Lucas and Spitler (1999) that the problem was with the researchers' variables that were not significant while studying the model (Venkatesh and Davis, 2000). Considering the above discussion, the researcher proposes the following hypotheses:

H1: There is a significant relationship between perceived usefulness and social media use.

H2: There is a significant relationship between perceived usefulness and collaborative learning.

3.2. Perceived enjoyment

The adoption of a self-service technology can be strongly influenced by the perceived enjoyment as reported by Curran and Meuter (2007). Perceived enjoyment was also found to have a positive impact on the users' choices of surfing the internet (Eighmey and McCord, 1998). Users' attitude and intention of using social media are mainly determined by the level of enjoyment they experience while using social media (Curran

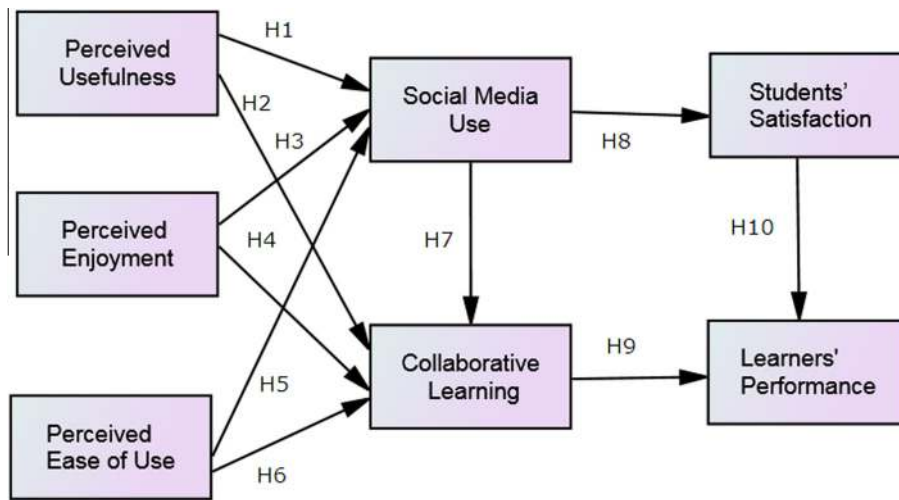


Figure 1 The research model with hypotheses.

150 and Lennon, 2011). In the context of technology use and adoption, the term of perceived enjoyment (PE) has been described as the level whereby any activity is deemed to be enjoyable regardless of other things like performance consequences as a result of the system use (Davis and Warshaw, 1992). The idea that social media has provided its learners with a high level of enjoyment and a great deal of interaction with their peer is still under questioning. Considering the above discussion, the researcher proposes the following hypothesis:

- 159 H3: There is a significant relationship between perceived enjoyment and social media use (Figs. 2 and 3).
- 160 H4: There is a significant relationship between perceived enjoyment and collaborative learning.

164 3.3. Perceived ease of use

165 It is suggested by the TAM that certain components like perceived usefulness, behavioral attitude, intention and actual use are highly influenced by perceived ease (Davis, 1989; Mathieson, 1991; Moore and Benbasat, 1991). Looking at the relation between perceived ease of use and perceived usefulness, Davis (1989) has reported that former might mediate the latter and this view is the opposite to the view by Venkatesh and Davis (2000) who argue that the former is a parallel and direct determinant of use. While talking of UTAUT, effort expectancy is used to capture the concepts of perceived use (TAM/TAM2), complexity and ease of use. It refers to the level of ease related to the system use (Venkatesh and Davis, 2000). This relationship between perceived ease of use-perceived usefulness was rejected as reported in some studies by Chau and Hu (2002), Bajaj and Nidumolu (1998), and Hu et al. (1999). Opposing TAM view and the finding of Venkatesh and Davis (2000) and Chau and Hu (2002) reported that there was no relation of influence among perceived ease, perceived usefulness or attitude (Venkatesh and Davis, 2000). Considering the above discussion, the researcher proposes the following hypothesis:

- 186 H5: There is a significant relationship between perceived ease of use and social media use.
- 187
- 188 H6: There is a significant relationship between perceived ease of use and collaborative learning.
- 189

190 3.4. Social media use

191 One of the main forces influencing the development of technology utilization models is the Social media use for active collaborative learning and engagement (Venkatesh et al., 2003; Davis, 1989). Moreover, both terms of perceived ease of use and perceived usefulness are known as the most crucial post-adoption perceptions. These perception have an exceptional role in increasing the level of satisfaction and future social media use (Venkatesh and Bala, 2008; Pelling and White, 2009). In support of this, Moon and Kim (2001) observed that those who positively interact with the web system and possess higher behavior to use it are the individuals who feel comfortable with ease while using this system. Social media is seen as a channel for transmitting information and knowledge between communities and learners. An example of that is Facebook application that can be used in several ways for the purpose of communication during interaction among students (Mack and Head, 2007). In the study by Brady et al. (2010), it was reported that the use of social media among students has increased between the years of 2007 and 2007. A decrease in the gap between older and younger students in terms of using social media was also detected. Considering the above discussion, the researcher proposes the following hypotheses:

- 212 H7: There is a significant relationship between social media use and collaborative learning.
- 213
- 214 H8: There is a significant relationship between social media use and students' satisfaction.
- 215
- 216

217 3.5. Collaborative learning

218 The participation in learning participation is said to be increased through the use of social media. Thus, as the interest

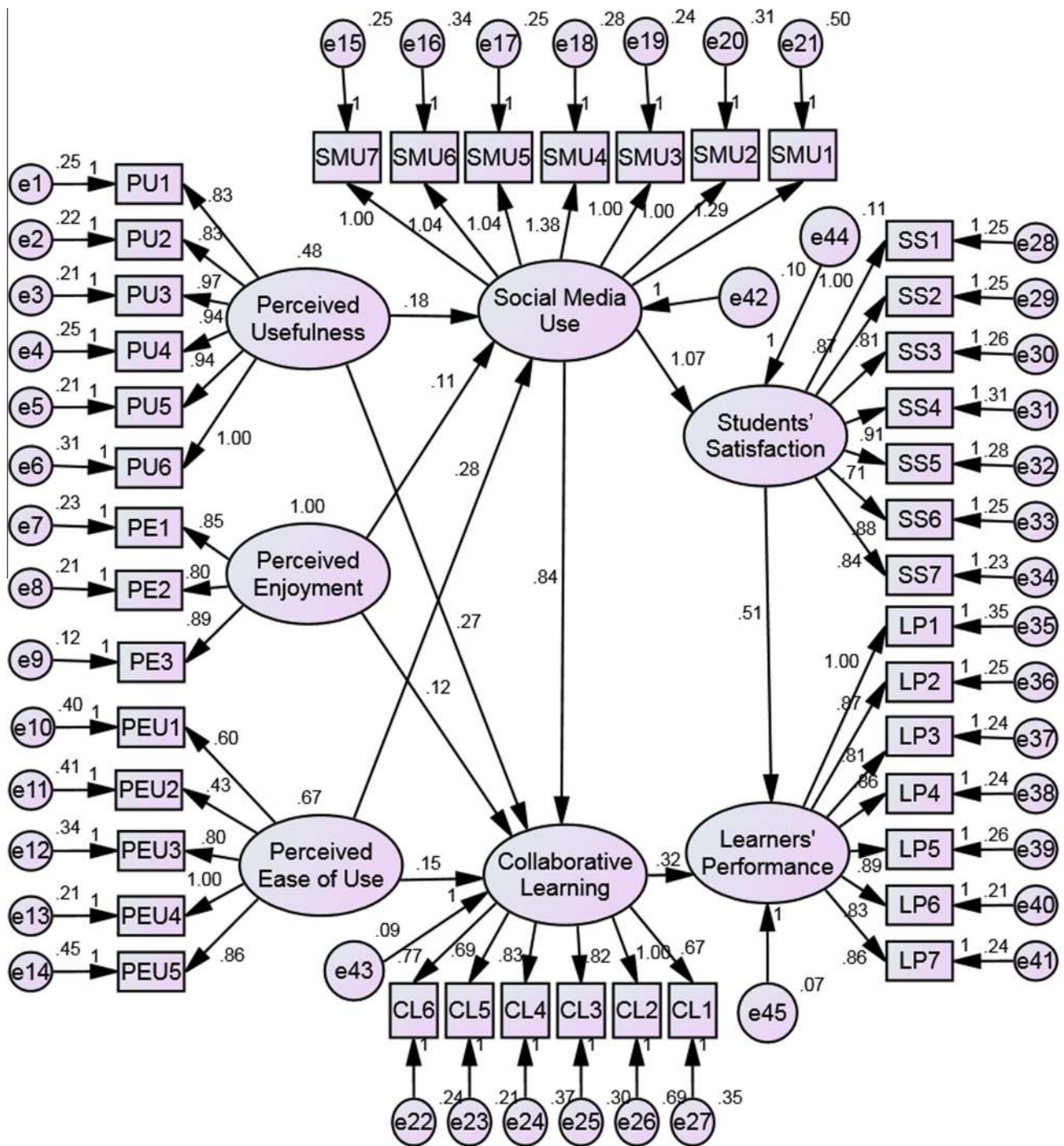


Figure 2 Results of the proposed model (path).

220 on active collaborative learning increased, the attention of
 221 scholars and researchers started to move toward social media
 222 (Ractham and Firpo, 2011). Through the online social envi-
 223 ronment, students become more able to communicate with
 224 their peers solving problems or organize social events in a col-
 225 laborative way (Anderson et al., 2010). For the social media to
 226 achieve collaborative learning in higher education there are
 227 vital condition that should be provided. These conditions are
 228 represented by the creation of active collaborative learning

and the motivation of cognitive skills reflection and metacog-
 229 nition (Anderson, 2012). Some researchers like Larusson and
 230 Alterman (2009) and Ertmer et al. (2011) reported that the
 231 use of social media by students in doing their assignments
 232 was of a positive impact on the level of learning. In a study
 233 done on the active collaborative learning exercises in a wiki,
 234 Zhu (2012) and Lund (2008) maintained that it has a positive
 235 impact on students who became more able to do activities like
 236 discussing their writing with peers and send as well as receive
 237

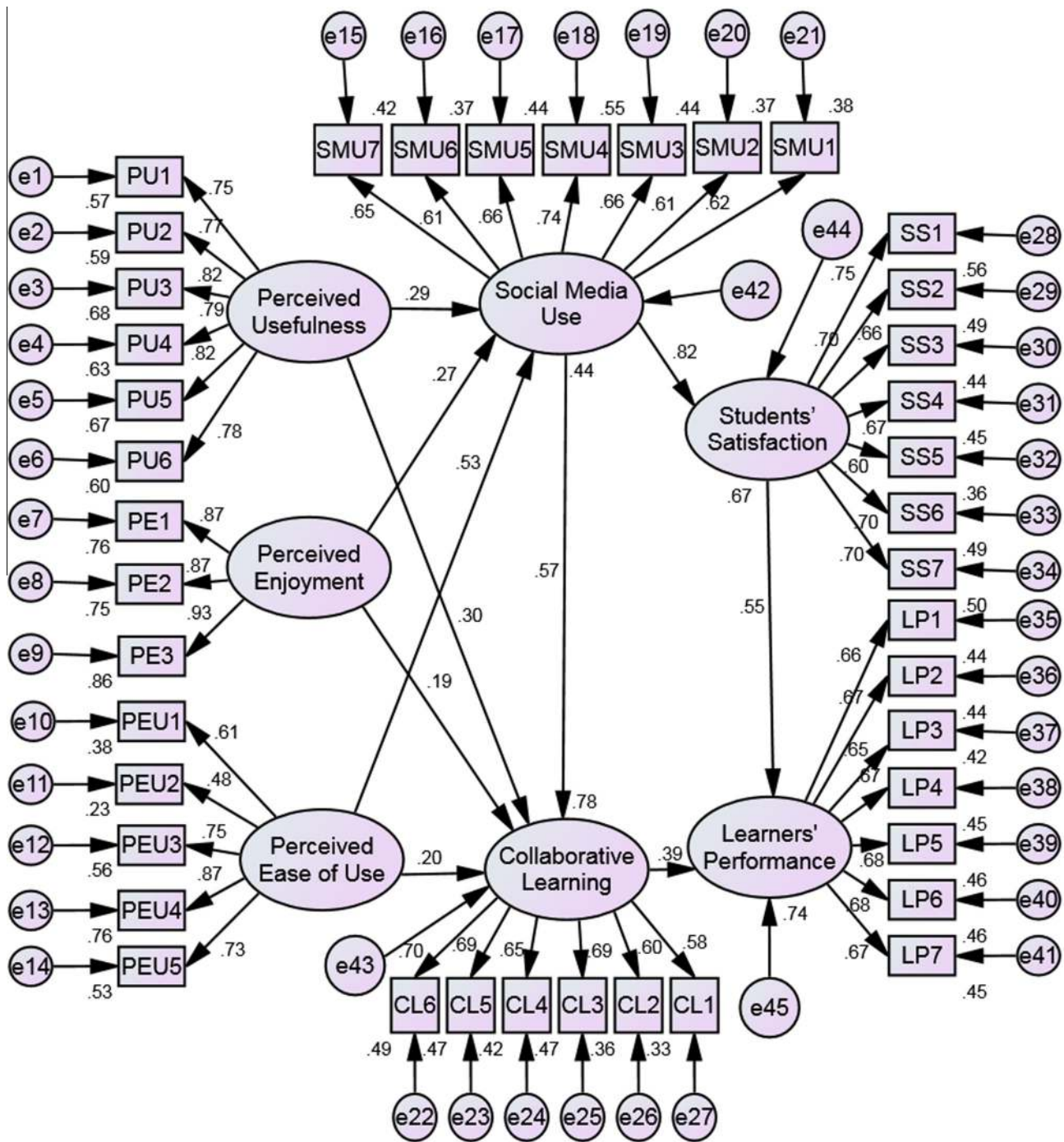


Figure 3 Results of the proposed model (hypotheses estimate).

238 feedback before publishing their final work. It is remarkable to
 239 mention that this tool 'wiki' can be used as an indication of
 240 sharing knowledge within the learning group. In terms of
 241 knowledge, Janssen et al. (2010) put forward that collaborative
 242 learning is far more important when learners are equipped with
 243 cognitive ability. Considering the above discussion, the
 244 researcher proposes the following hypothesis:

245 H9: There is a significant relationship between collaborative
 246 learning and learners' performance.

3.6. Students' satisfaction

249 There is a need to research the area of interaction among stu-
 250 dents online and highlight the factor if there are cultural differ-
 251 ences and their influence through online engagement between
 252 learners from different cultures (Kim, 2011). This is true
 253 because learners' from certain cultures might have a different
 254 understanding of the educational interventions in the context
 255 of another culture. Several researchers like Santhanam et al.

(2008), So and Brush (2008) and Wu et al. (2010) focused on students' satisfaction within active collaborative learning atmosphere. When talking about user's adoption and satisfaction of technologies, two significant variables should be mentioned namely Perceived usefulness and perceived ease of use due to the observation that they are indicators of users' satisfaction with websites (Greenhow et al., 2009) as well as computers (Davis, 1989). According to Chai and Fan (2016) the Mobile Inverted Constructivism (MIC) is more acceptable to the digital natives. Moreover, technology success is found to be determined by the concept of entertainment which is related to the adoption and satisfaction levels of IS systems in the context of technology use (Kim et al., 2009). Therefore, it is recommended by Chang and Wang (2008) that online courses should be equipped by all sorts of interaction in order to reach a better learning and fulfil the students' satisfaction. Considering the above discussion, the researcher proposes the following hypothesis:

H10: There is a significant relationship between students' satisfaction and learners' performance.

3.7. Learners' performance

Investigating the influence of social media on learning, Helou and Rahim (2014) conducted his study in Malaysia exploring the students' opinions in this regard and concluded that they support the positive influence of social media on their performance despite the fact that they use this technology mainly for social interaction more than for academic purposes. In this connection, a significant relationship has been established between the three factors of collaborative learning, engagement and learning performance (Junco et al., 2011). Social media is integrated in the field of social science due to its advantages, flexibility and the role it plays in addressing academic and social problems. Hamid et al. (2011) maintained that the use of social media in higher education can be implemented in various ways and lead to fruitful results. For example, Madge et al. (2009) argued that through the use of this technology, educational access and interaction can be improved. Bull et al. (2008) add that it can also bridge the gap informally among students, faculty or lecturers in terms of communication. In social media various applications are seen to be used by students for the purposes of entertainment and learning. It is reported that college students use different and various applications of social media that became an essential activity in their lives used for personal and learning purposes (Cao and Hong, 2011; Dahlstrom et al., 2011). Mobile technology and the smartphone revolution have participated in this heavy use of this technology (Dahlstrom et al., 2011). Previous related literature revealed that students' engagement is positively influenced by social media due to the relation found between social networking sites and students achievement by which the former has a great influence on the latter (Brady et al., 2010; Junco et al., 2011). These researchers added this might have a positive influence on research students' performance, cognitive skill as mentioned by Alloway and Alloway (2012) and on their skill development as mentioned by Yu et al. (2010). The potential for positive educational impact was recognized and reported in the curriculum areas of civic

engagement and language learning (Mahadi and Ubaidullah, 2010).

4. Research methodology and data collection

The process of data collection took place in Universiti Teknologi Malaysia and targeted postgraduate and undergraduate students. Being the main tool of data collection, questionnaires were distributed to assess the influence of the factors under investigation and to verify the various research hypotheses. The questionnaire involved 41 items distributed over several factors namely perceived usefulness, perceived enjoyment, perceived ease of use, social media use, collaborative learning, students' satisfaction and learning performance. It also included demographic data like gender, education level, the level of social media use on daily and weekly basis to learn Quran and Hadith. 340 respondents agreed to participate and completed the questionnaire. This number is seen acceptable as it is reported that such study requires at least 150 respondents to actively participate. Hair et al. (2010) report that 150 is acceptable for studies with seven or less constructs, modest communalities, and no unidentified constructs for structural equation modeling (SEM) technique.

5. Data analysis and results

As the questionnaires were collected, respondents were classified according to many standards: gender, education level, the use of social media. Based on gender classification, 141 male and 199 female respondents participated forming 41.5% and 58.5% respectively. According to the participants' level of education, 18 of the respondents were PhD students, 88 were Master students, 228 were Bachelor students and 6 were Diploma students with the percentages 5.3%, 25.9%, 67.1% and 1.8% respectively. In classifying the participants through their use of social media, 9.4% forming 32 respondents reported that they use social media 1–2 times a day, while 37.6% forming 128 respondents reported that they use this technology 3–4 times a day.

For the rest of participants, (22.9%) forming 78 respondents mentioned that they use it 5–6 times a day, (30.0%) with a total number of 102 reported their use of social media to be more than 6 times per day. Finally, the respondents were also classified according to their use of social media per week in learning Quran and Hadith. 6.5% of the participants with a number of 22 appeared to use social media 1–2 times a week, 10.0% forming 34 participants appeared to use social media 3–4 times a week, 15.9% representing 54 participants reported that they use social media 5–6 times a week, and 67.6% represented 230 respondents confirmed that they use social media more than 6 times in a week for the purpose of learning Quran and Hadith (see Table 1).

5.1. Measurement model analysis

The major tool utilized by the current study for data analysis is called the structural equation model (SEM). This technique was used along with Amos 23 and Confirmatory factor analysis (CFA). Upon analysis, the overall goodness-of-fit using fit Indices (χ^2 , df, χ^2/df , RMR, IFI, TLI, CFI and RMSEA) were

Table 1 Descriptive information of the sample.

Measure	Value	Frequency	Percentage
Gender	Male	141	41.5
	Female	199	58.5
	Total	340	100.0
Education	PhD	18	5.3
	Master	88	25.9
	Bachelor	228	67.1
	Diploma	6	1.8
	Total	340	100.0
Social media used per day to learn Quran and Hadith	1-2 times	32	9.4
	3-4 times	128	37.6
	5-6 times	78	22.9
	More than 6 times	102	30.0
	Total	340	100.0
Social media used per week to learn Quran and Hadith	1-2 times	22	6.5
	3-4 times	34	10.0
	5-6 times	54	15.9
	More than 6 times	230	67.6
	Total	340	100.0

revealed. Overall model fit was accepted through the use of CFA. That was also shown through the initial confirmatory factor analysis. The goodness fit indices to measurement model all values were acceptable. Table 2 below illustrates these results of the measurement model.

Correlation index, a crematory factor analysis, and Composite Reliability were used for the purpose of measuring the Discriminant validity. The value of the average variance extracted (AVE) of each construct should be the same to or higher than 0.5 (Hair et al., 2010), and square root AVE of each construct should be higher than inter-construct correlations (IC) associated with that factor (Fornell and Larcker, 1998). Moreover, the constructs, items and confirmatory factor analysis results factor loading of 0.5 or greater are acceptable, Composite Reliability and Cronbach's Alpha ≥ 0.70 (Hair et al., 2010). Moreover, three criteria are used to assess the discriminant validity in the current study; correlation index among variables is less than 0.80 (Hair et al., 2010). See Tables 3 and 4.

5.2. Results of hypothesis testing

The results of the current study support the framework as well as the hypotheses proposed in terms of the directional linkage between the framework variables. The 10 hypotheses proposed in the current study were accepted and verified. Table 5 illustrates the standard errors for the structural model.

The relation between perceived usefulness and social media use in the context of learning Quran and Hadith was found to be positive and significant with ($\beta = 0.178, p < 0.001$). This finding supports H1 proposing a significant relationship between the perceived usefulness and social media use for learning Quran and Hadith. The second hypothesis that suggests significant relationship between perceived usefulness and collaborative learning in the context of learning Quran and Hadith was also confirmed. With the result of ($\beta = 0.114, p < 0.001$), H3 was also confirmed as the relation between perceived enjoyment and social media use for learning Quran and Hadith was found to be significant and positive. The positive relationship between perceived enjoyment and collaborative learning in the context of learning Quran and Hadith by social media use verified and proved H4 with ($\beta = 0.122, p < 0.001$).

As for the fifth hypothesis, the relationship between the perceived ease of use and social media use for learning Quran and Hadith appeared to be positive with ($\beta = 0.277, p < 0.001$). This result proves and accepts this hypothesis. Also, the sixth hypothesis was proved and accepted as the relation between perceived ease of use and collaborative learning to learn Quran and Hadith by social media use was reported to be positive and significant with ($\beta = 0.155, p < 0.001$).

As for the seventh hypothesis, a positive significant relationship was found between social media use for learning Quran and Hadith and collaborative learning. Therefore, the hypothesis is accepted and proved with ($\beta = 0.841, p < 0.001$). Hypothesis eight suggested a positive relation between social media use and students satisfaction. As the results proved such relation, this hypothesis was accepted and proved with ($\beta = 1.070, p < 0.001$).

The ninth hypothesis that suggested a positive relation between active collaborative learning and learning performance of students was accepted and proved since the results supported such results with ($\beta = 0.319, p < 0.001$). The relation between students' satisfaction and learning performance was found to be positive and significant. This result provides support to the tenth hypothesis and therefore it was accepted with ($\beta = 0.511, p < 0.001$).

5.3. Discussion and implications

Seven factors were investigated in the current study for their influence on learners' performance to lean Quran and Hadith. This study took place in Malaysia and targeted higher education. The ten hypotheses of this study were accepted and that might contradict with other studies like Junco (2012) and Kirschner and Karpinski (2010) reporting a negative impact of social media on students' performance. Learners' skills also appeared to be developed through the use of social media in the context of learning Quran and Hadith. While consistent with the study conducted by Chai and Fan (2016) results show that in the classes where the Mobile Inverted Constructivism

Table 2 Fitness of measurement model.

Model	χ^2	df	χ^2/df	RMR	IFI	TLI	CFI	RMSEA
Base	1124.436	753	1.493	0.035	0.916	0.908	0.915	0.054

Table 3 Discriminant validity.

	PU	PE	PEU	SMU	CL	SS	LP
PU	0.790						
PE	0.549	0.890					
PEU	0.693	0.540	0.704				
SMU	0.658	0.541	0.636	0.708			
CL	0.592	0.609	0.597	0.572	0.743		
SS	0.609	0.451	0.632	0.651	0.583	0.723	
LP	0.547	0.518	0.543	0.595	0.695	0.654	0.719

Note: PU: Perceived Usefulness; PE: Perceived Enjoyment; PEU: Perceived Ease of Use; SMU: Social Media Use; CL: Collaborative Learning; SS: Students' Satisfaction; LP: Learners' Performance.

Table 4 Item loadings on related factors.

Factor	Item	Standard loading	Average variance extracted (AVE)	Construct reliability (CR)	Cronbach's Alpha
PU	PU1	0.753	0.625	0.909	0.908
	PU2	0.771			
	PU3	0.823			
	PU4	0.795			
	PU5	0.819			
	PU6	0.777			
PE	PE1	0.873	0.793	0.920	0.919
	PE2	0.868			
	PE3	0.929			
PEU	PEU1	0.614	0.596	0.826	0.820
	PEU2	0.500			
	PEU3	0.727			
	PEU4	0.750			
	PEU5	0.873			
SMU	SMU1	0.617	0.501	0.875	0.867
	SMU2	0.606			
	SMU3	0.662			
	SMU4	0.742			
	SMU5	0.664			
	SMU6	0.607			
	SMU7	0.650			
CL	CL1	0.579	0.552	0.880	0.877
	CL2	0.601			
	CL3	0.686			
	CL4	0.649			
	CL5	0.687			
	CL6	0.701			
SS	SS1	0.745	0.523	0.885	0.867
	SS2	0.700			
	SS3	0.662			
	SS4	0.674			
	SS5	0.599			
	SS6	0.702			
	SS7	0.704			
LP	LP1	0.660	0.518	0.883	0.881
	LP2	0.667			
	LP3	0.650			
	LP4	0.673			
	LP5	0.675			
	LP6	0.681			
	LP7	0.669			

Table 5 Hypotheses testing results.

H	Independent	Relationship	Dependent	Path	Estimate	SE	C.R	P	Result
H1	PU	→	SMU	.288	.178	.064	2.790	.005	Supported
H2	PU	→	CL	.303	.247	.080	3.447	.000	Supported
H3	PE	→	SMU	.266	.114	.036	3.155	.002	Supported
H4	PE	→	CL	.195	.122	.044	2.764	.006	Supported
H5	PEU	→	SMU	.532	.277	.060	4.627	.000	Supported
H6	PEU	→	CL	.202	.155	.077	1.997	.046	Supported
H7	SMU	→	CL	.574	.841	.156	5.394	.000	Supported
H8	SMU	→	SS	.816	1.070	.126	8.464	.000	Supported
H9	CL	→	LP	.387	.319	.076	4.198	.000	Supported
H10	SS	→	LP	.555	.511	.097	5.293	.000	Supported

(MIC) model is applied, students are better motivated to learn and make creative achievements than those restrained by traditional classroom teaching. This study illustrated that the constructs are well represented by the indicators. Also, the measurement model proved to be acceptable through the acceptance of all goodness of fit indices. The current study also measures both convergent and discriminant validity in which the study calculated the construct reliabilities and average variance extracted values. The model was indicated to be good on the light of the values and the 10 hypotheses of the study were verified and accepted. New correlations were also added to the model and the validity of the model was confirmed by the indices and goodness of fit indices. All of these results confirm that social media has many advantages like being useful, ease to use, enjoyable, and able to satisfy the needs of the learners. This study established a model on social media use for collaborative learning to effect learners' performance.

5.4. Conclusion and future work

It is vivid that social media is heavily used by students to learn Quran and Hadith. These platforms allow students to exchange and share information with their peers (Al-rahmi et al., 2015). The major aim of the study was to explore the impact of several factors on collaborative learning and students' satisfaction which lead to a better learners' performance. TAM was the ground of the proposed model used in the current study and that involved seven constructs: perceived usefulness, perceived enjoyment, and perceived ease of use, social media use, collaborative learning, students' satisfaction and learners' performance. An online questionnaire with 41 items was used to measure these constructs and was analyzed using structural equation modeling (SEM) technique. The results highlighted that both collaborative learning and students' satisfaction have a positive influence on learners' performance in the context on learning Quran and Hadith. It is notable that the construct of students' satisfaction has the greatest influence. It also revealed the high satisfaction by students using social media enhances collaborative learning which leads to a better performance. The current study recommends that future studies include other and extra elements to assess the influence of the different factors on learners' performance through collaborative learning.

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