

The Impact of Using Social Media for Teaching and Learning in Post-secondary Institutes

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ABSTRACT The current paper investigates both interactivity and engagement of using social media in collaborative learning and its impact on academic performance as addressed in previous literature. In particular, the investigation of this paper is conducted in the context of learning the Quran and Hadith. Through the application of the constructivism theory, this paper attempts to examine the role of social media in encouraging academic performance through interactivity, engagement and collaboration. To help achieve the purpose of this study, students of University of Technology Malaysia (UTM) volunteered to participate in it. Positive and significant relations were found among social media use, collaborative learning and the students' satisfaction in the context of learning the Quran and Hadith.

INTRODUCTION

Much of the research in this field reported that the use of online social media sites is enjoyed by learners who use this technology to enrich their learning process (Gonzalez et al. 2016; Veletsianos and Navarrete 2012). Presently, the various applications of social media, like Twitter, Facebook, YouTube, and blogging platforms, are used by students as well as academics. As for academics, they use this technology to facilitate their teaching. An example of that is the fact that they upload materials and educational activities to be sent to students who interact in return (Moran et al. 2011; Mohamud et al. 2015). Realizing its impact on education, Greenhow et al. (2009) maintained that academics and instructors encouraged and suggested the use of the Web as an educational tool. Brady et al. (2010) stated that in e-learning courses, the use of social media is preferred due to the fact that this technology facilitates, to a great extent, the communication between students and instructors.

This view is supported by Al-Rahmi and Zeki (2016), Al-Rahmi et al. (2017), and Veletsianos

and Navarrete (2012), who stated that social media encourages information sharing between students and their lecturers, and this is clearly seen in the use of instant messaging and wikis to ease collaboration among students (Hrastinski and Aghaee 2012; Carpenter et al. 2016). Al-Rahmi et al. (2015a) asserted that instructors are still following the traditional way of teaching through traditionally-based learning management system (LMS) and still not using social media properly for the purpose of engaging their students in virtual learning (Ameen and Ahmad 2011). These days, Word Press, Blogger, and Tumblr are considered to be the most common blogging tools. By exploring blogging platforms, it was found that the feedback on students' and their peers' blogs facilitated interactive learning (Churchill 2009). In their study, Rodriguez-Hoyos et al. (2015) suggested that the attitudes, resistance and actual uses of these sites could be affected by geographical and gender differences, and research is needed to investigate these dimensions. It was reported in previous literature that many instructors and faculties are still reluctant to use and apply these tools of social media in the learning environment (Crook 2012; Greenhow and Askari 2015; Al-Rahmi et al. 2017). The major aim of the current paper is to

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explore the use of social media in the learning environment in the context of Malaysian higher education. Different patterns are identified in this research for the purpose of using this technology as a tool for collaboration and communication. This research also examines how this technology can be used. The current paper provides insights into the use of social media in the academic atmosphere. It also highlights some factors that can influence learners' performance and academic achievement in the context of learning the Quran and Hadith through collaborative learning.

Conceptual Framework and Hypotheses

Based on constructivism theory, a framework for the impact of social media use on collaborative learning is proposed in the current work. This paper highlights the relations between social media, collaborative learning among students and social media use (SMU) variables such as interactivity (INT), collaborative learning (CL), students' satisfaction (SS), engagement (EN) and effect on teaching and learning (TL). Six hypotheses are proposed in the current paper for the research model after Vygotsky (1978).

Social Media Use for Interactivity

Social constructivism describes learning as a social process that is active and aims to lead to an effective learning by motivating students to take parts in social activities (Kim 2001). In the light of the role played by social networking tools in connecting and promoting networks and social interaction, many refer to these tools as being able to support a distributed and networked process of building knowledge (Dron and Anderson 2014). The term social media refers to the variety of applications that provides the chance for people to create, comment on and even discuss digital contents (Brown 2012). Looking at these features, it can be argued that social media and its various tools has helped to improve learning and teaching to a new level which is characterized by increased social interaction (Al-Rahmi et al. 2014). The high level of interactivity among teachers, students, and parents as well as the creation of in-class and out-of-class contents has been highlighted by Greenhow and Askari (2015) as outcomes of social networking sites in connection with K-12 related education

sector. They also shed light on the influence this technology has on the improvement of students' learning and performance. Considering the above discussion, the researcher proposes the following hypothesis:

H1: There is a significant relationship between Interactivity and collaborative learning.

Social Media Use for Engagement

It is suggested, by socio-cultural learning theories, that students adopt different learning styles (Vygotsky 1992). However, there is an agreement that interaction is an especial requirement for creating a good learning environment. Learning through interaction, critical thinking and collaboration are three important results of using social media in learning (Liburd and Christensen 2013). Both learning and understanding are highly influenced by online social networking activities, which also positively influences interaction among students as stated by Al-Rahmi et al. (2015b) and Yu et al. (2010), who investigated the impact of Facebook on learning. In support of this, Charitonos et al. (2012) found that students' engagement with the content, the quality of their assignments, and their sense of responsibility for learning were strongly influenced by the application of Web 2.0 tools in secondary school classroom teaching. Gao et al. (2012) also highlighted the role played by micro blogging services within the learning environment and stated that it has a positive influence on participation, engagement, reflective thinking, collaborative learning, and the expansion of learning content in different formal and informal learning settings. Considering the above discussion, the researcher proposes the following hypotheses:

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

H3: There is a significant relationship between engagement and students' satisfaction.

Social Media Use for Collaborative Learning

The potential usage of media tools among students in teaching and learning have been the interest on many studies (Everson et al. 2013; Al-Rahmi et al. 2014; Roblyer et al. 2010). Recently, many social media-enabled tools have been developed for educational purposes. Examples include Facebook and Twitter that are

used by both students and instructors to interact. Al-Rahmi et al. (2015) and Li and Greenhow (2015) maintained that social media has many advantages, such as strengthening relationships, facilitating research collaboration, publishing and reflecting on ideas, disseminating information, and discussing issues in an open and public format. Collaborative learning is seen by many researchers as the key to improve critical thinking skills, social skills, competitiveness, and knowledge retention (Miyazoe and Anderson 2010; Yang and Chang 2012; Al-Rahmi et al. 2014). Collaborative activities and challenging tasks when adopted by students are known as diverges and accommodators respectively (Kolb and Kolb 2005). The forces motivating these students are instructional pedagogies, group discussions and projects, field trips, and open-ended problems or group presentations. It is reported in literature that instructors and academics are more interested in improving the quality of their teaching more than motivating students to use the computer and the Internet. For example, the use of Facebook and Blog-Wiki by instructors for preparing their lectures in order to achieve collaborative work among students. Considering the above discussion, the researcher proposes the following hypothesis:

H5: There is a significant relationship between collaborative learning and teaching and learning.

Social Media Use and Students' Satisfaction

The academic performance of the student, their depth of knowledge, their satisfaction level, and their overall performance were determined by evaluation periods through providing feedback for both learners and instructors (Forkosh and Hershkovitz 2012). There is a need for further research on the role played by the tools of social media in academic life in order to detect its impacts on learning and teaching environments. This need stems from the fact that new Web 2.0 technologies are being integrated in the educational system (Greenhow et al. 2009; Tess 2013; Al-Rahmi et al. 2015; Al-Rahmi et al. 2014). In the same vein, (Bernard et al. 2009) online courses should be loaded with the different kinds of interaction because they improve students' learning and satisfaction. Considering the above discussion, the researcher proposes the following hypothesis:

H4: There is a significant relationship between social media use and students' satisfaction.

H6: There is a significant relationship between students' satisfaction and teaching and learning.

Social Media Use for Teaching and Learning

The creation, sharing, and the exchange of information are the impacts that social media has on students, and they lead to positive learning. Individuals from different backgrounds are provided the chance to express themselves and interact with others using the various tools of social media, such as Twitter, Facebook and YouTube (Lenhart et al. 2010). Contradicting views related to the tools of social media were brought to attention by Veletsianos et al. (2013). The first view claims that certain tools like Learning Management Systems determine the way social platforms are used. This view contradicts the other common view reporting that social media is vital for the development of education. Age and gender along with prior experience are seen as forces affecting the aptitudes as well as the dispositions to social media. A problem faced by the implementation of social media education was highlighted by Tess (2013), who stated that the problem is not with the universities and it's not because there is a lack of infrastructure, but it is with the instructors who are not adopting this trend appropriately. In support of this, the study by Roblyer et al. (2010) reported that tertiary students have a positive attitude towards the use of social media, such as Facebook, being a preferred chooses to integrate them in education. Faculties on the other hand are in support of traditional technologies. Though the enhancement of self-regulated learning as an outcome of using social media has been highlighted by Dabagh and Kitsantas (2011), in the light of previous related literature, much of the attention was placed on the positive influence social media has on the educational environment (Greenhow and Askari 2015; Al-Rahmi et al. 2015; Tess 2013). Many studies (Cooke 2015; Al-Rahmi et al. 2015) reported this influence in the language of numbers in higher education institutions. Focusing on one of social media tools, Manca and Ranieri (2013) examined the role played by Facebook application in enhancing education.

RESEARCH METHODOLOGY

Context and Sample

The main tool of data collection in the current paper is a questionnaire designed to investigate the use of social media in the learning environment. The duration of this study was from April - June 2016, and it was conducted at the Islamic center and the Faculty of Islamic Civilization of the University of Technology Malaysia. The survey targeted both students and instructors to measure interactivity, engagement in sharing the Quran and Hadith (using Wiki, YouTube and Flickr), writing and publishing (using Wiki, Blog and Mendeley), academic networking services and collaborative learning (using Facebook, LinkedIn, Twitter, Research Gate and Forum) and instructors' collaboration (YouTube, Skype and Slide Share). Some conditions should be taken into consideration while choosing a measurement scale, namely reliability, validity, and practicality of the scale (Cooper and Schindler 2006). The questionnaire was designed to solicit students' experiences in using the various tools of social media for collaborative learning and engagement in the context of learning the Quran and Hadith. Three hundred and forty responses were collected after excluding the incomplete ones. The paper utilized both IBM SPSS (Version-23) and Amos (Version-23) for data collection.

Data Collection and Measurement

The questionnaire consisted of 42 open-ended and close-ended questions. These questions covered the demographic details and the different constructs under investigation in the current paper: social media use and interactivity, social media use and collaborative learning, social media use and engagement, social media use and students' satisfaction, and finally, social media use to learn the Quran and Hadith. Six items adopted from Al-Rahmi et al. (2013) and McMillan and Hwang (2002) were designed to measure interaction; seven items were used to measure collaborative learning, and they were adapted from So and Brush (2008) and Al-Rahmi et al. (2013); eight items were recommended by Al-Rahmi et al. (2015) and Medlin and Green (2009) and were designed to measure engagement; seven items adapted from Al-Rahmi et al.

(2015) were designed to assess the use of social media. Moreover, some items adapted from Moore (2009) were designed to measure satisfaction; while seven items based on suggestions by Al-Rahmi et al. MacGeorge et al. (2008) were formulated to evaluate teaching and learning.

RESULTS

The respondents of this paper were classified according to gender, age, and country. Regarding their gender, 141 of the respondents were male and 199 were female, representing 41.5 percent and 58.5 percent respectively. Based on age, 282 of the respondents were between the ages of 25-30, representing 82.9 percent of the respondents; 30 respondents, representing 8.8 percent of the respondents were between the ages of 26-30; 14 respondents, representing 4.1 percent of the respondents were between the ages of 31-35, and the remaining 14 respondents, representing 4.1 percent of the respondents were above the age of 35. Based on their nationality, 296 of the respondents were Malaysian, forming 87.1 percent of the participants; 20 participants, forming 5.9 percent of the respondents, were Middle East, 2 respondents, forming 0.6 percent of the respondents, were Africans; 19 respondents, forming 5.6 percent of the respondents, were Africans, and the remaining 3 participants, forming 0.9 percent of the respondents, were Singaporeans. These results are illustrated by descriptive information of the sample in Table 1.

Measurement Model Analysis

The structural equation model (SEM) was used in this paper as the main tool of analysis along with Amos 23 and Confirmatory factor analysis (CFA). The overall goodness-of-fit using fit indices (χ^2 , df, χ^2/df , RMR, IFI, TLI, CFI and RMSEA) was reported upon analysis. The overall model fit was accepted by CFA. The results of the accepted measurement model values are shown in Table 2.

Correlation index, factor analysis, and Composite Reliability are used in the current paper to measure the discriminant validity. Hair et al. (2010) sets the standards for the average variance extracted (AVE) and square root AVE of each construct. They state that the former should be the same as or higher than 0.5, while the latter

Table 1: Descriptive information of the sample

<i>Measure</i>	<i>Value</i>	<i>Frequ- ency</i>	<i>Percent- age (%)</i>	<i>Measure</i>	<i>Value</i>	<i>Frequ- ency</i>	<i>Percent- age (%)</i>
<i>Gender</i>	Male	141	41.5	<i>Country</i>	Malaysia	296	87.1
	Female	199	58.5		Middle East	20	5.9
<i>Age</i>	20-25	282	82.9		Africa	2	0.6
	26-30	30	8.8		Indonesia	19	5.6
	31-35	14	4.1		Singapore	3	0.9
	Above 35	14	4.1				

Table 2: Fitness of measurement model

<i>Model</i>	χ^2	<i>df</i>	χ^2/df	<i>RMR</i>	<i>IFI</i>	<i>TLI</i>	<i>CFI</i>	<i>RMSEA</i>
Base	1116.175	793	1.408	0.034	0.923	0.915	0.922	0.049

should be more than the inter-construct correlations (IC) associated with that factor (Fornell and Larcker 1998). They also added that the results of the constructs, items and confirmatory factor analysis of 0.5 are acceptable, while Composite Reliability and Cronbach's Alpha are ≥ 0.70 each. In an attempt to evaluate discriminant validity, the paper used three criteria. The current paper's benchmark is 0.7 or more (See Tables 3 and 4).

Results of Hypothesis Testing

In terms of the directional linkage between the model variables, both the models as well as the hypotheses were accepted and proved. Table 5 demonstrates the standard errors for the structural model. The proposed model for the path and hypotheses are shown in Figures 1 and 2. Moreover, the results of hypotheses testing are shown in Table 5.

As for the first hypothesis that suggested a relation between interactivity among students

and collaborative learning in the context of learning the Quran and Hadith, it was accepted since the results illustrated that this relation is positive and significant ($\beta = 0.216$, $p < 0.001$). Hypothesis 2 was also proved and accepted as the relation between students' engagement and collaborative learning in the context of learning the Quran and Hadith by social media use was found to be significantly positive ($\beta = 0.584$, $p < 0.001$). The relation between students' engagement and satisfaction to use social media was positive and this provided support for the third hypothesis which suggested such relation to be significant. Hypothesis number 3 was accepted based on the finding that supported the positive relationship between engagement and students' satisfaction ($\beta = 0.285$, $p < 0.001$). Thus, students were satisfied with the use of social media for engagement to learn the Quran and Hadith. The fourth hypothesis was also proved and accepted upon the finding that supported the positive relationship between social media use and students satisfaction ($\beta = 0.794$, $p < 0.001$). Regard-

Table 3: Discriminant validity

	<i>SMU</i>	<i>EN</i>	<i>TL</i>	<i>INT</i>	<i>CL</i>	<i>SS</i>
SMU	0.803					
EN	0.662	0.750				
TL	0.642	0.710	0.794			
INT	0.541	0.706	0.715	0.759		
CL	0.655	0.678	0.558	0.564	0.713	
SS	0.503	0.639	0.636	0.505	0.624	0.744

Note: SMU: social media use; EN: engagement; TL: teaching and learning; INT: interactivity; CL: collaborative learning and SS: students' satisfaction.

Table 4: Item loadings on related factors

<i>Factor</i>	<i>Item</i>	<i>Standard loading</i>	<i>Average Variance Extracted (AVE)</i>	<i>Construct Reliability (CR)</i>	<i>Cronbach's alpha</i>
<i>INT</i>	INT1	0.741	0.577	0.891	0.891
	INT2	0.802			
	INT3	0.806			
	INT4	0.751			
	INT5	0.727			
	INT6	0.737			
<i>EN</i>	EN1	0.656	0.5	0.888	0.884
	EN2	0.743			
	EN3	0.734			
	EN4	0.777			
	EN5	0.757			
	EN6	0.68			
	EN7	0.683			
	EN8	0.593			
<i>SMU</i>	SMU1	0.665	0.503	0.876	0.867
	SMU2	0.658			
	SMU3	0.711			
	SMU4	0.78			
	SMU5	0.699			
	SMU6	0.679			
	SMU7	0.702			
<i>CL</i>	CL1	0.609	0.525	0.885	0.877
	CL2	0.652			
	CL3	0.668			
	CL4	0.728			
	CL5	0.741			
	CL6	0.725			
	CL7	0.752			
<i>SS</i>	SS1	0.749	0.553	0.896	0.886
	SS2	0.688			
	SS3	0.653			
	SS4	0.672			
	SS5	0.597			
	SS6	0.694			
	SS7	0.711			
<i>TL</i>	TL1	0.638	0.511	0.879	0.881
	TL2	0.64			
	TL3	0.631			
	TL4	0.653			
	TL5	0.656			
	TL6	0.662			
	TL7	0.644			

Table 5: Hypothesis testing results

<i>H</i>	<i>Independent relationship</i>	<i>Dependent</i>	<i>Path</i>	<i>Estimate</i>	<i>SE</i>	<i>C.R</i>	<i>p</i>	<i>Result</i>
H1	INT	CL	0.175	0.216	0.081	2.147	0.032	Supported
H2	EN	CL	0.469	0.584	0.095	4.937	0	Supported
H3	EN	SS	0.231	0.285	0.066	3.469	0	Supported
H4	SMU	SS	0.76	0.794	0.107	7.093	0	Supported
H5	CL	TL	0.405	0.392	0.105	3.849	0	Supported
H6	SS	TL	0.704	0.687	0.113	3.207	0	Supported

ing the two constructs of active collaborative learning and teaching and learning the Quran and Hadith, a positive as well as a significant relationship was reported ($\beta = 0.392$, $p < 0.001$).

This provides a strong support for the fifth hypothesis which was accepted. The last hypothesis under investigation in the current paper is the sixth which suggests a relationship between

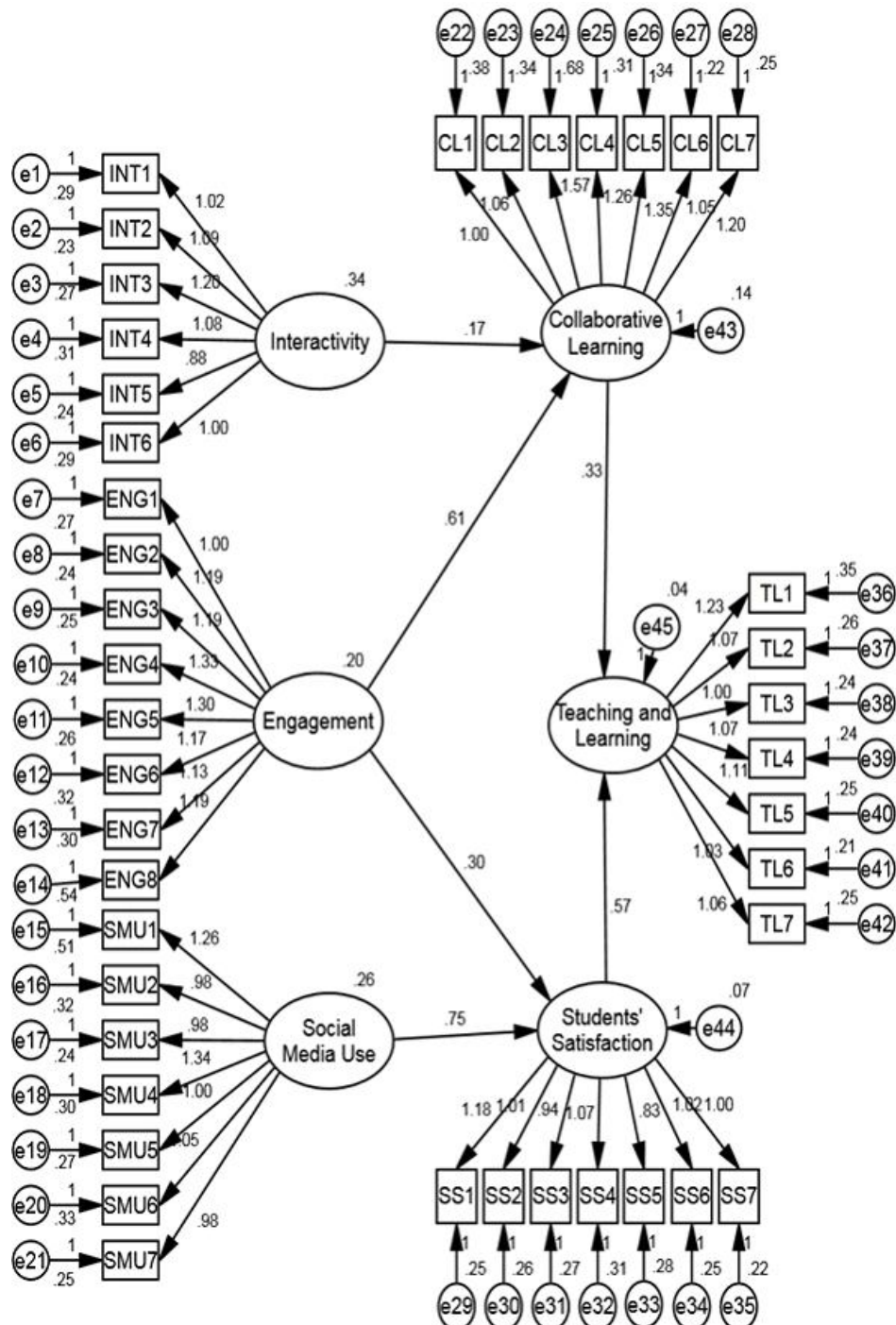


Fig. 1. Results of the proposed model (path analysis)

Source: Author

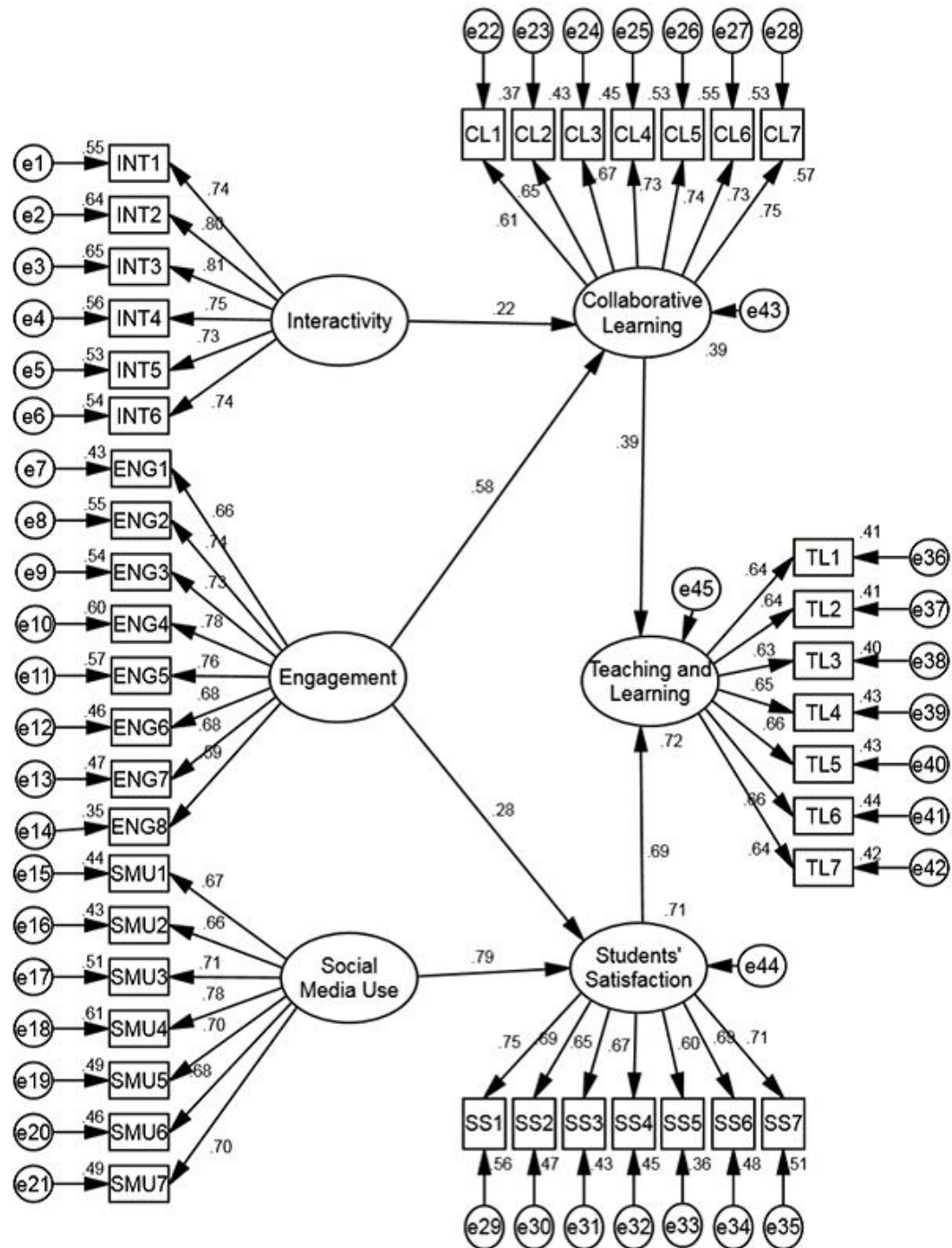


Fig. 2. Results of the proposed model (hypotheses estimate)

Source: Author

students' satisfaction and teaching and learning the Quran and Hadith. Upon analysis, this hypothesis was proved and accepted as the results supported the significance of this relationship ($\beta=0.687$, $p<0.001$).

DISCUSSION

This paper provides support for the role played by social media in enriching the learners' skills through their interaction with their peers. In the current research, all of the hypotheses suggested were accepted. These results are contradictory to some previous related studies such as Junco (2012), Kirschner and Karpinski (2010). These studies suggest a negative relation between social media and academic performance. However, this paper finds support from many studies in literature such as Al-rahmi and Zeki (2016), Gonzalez et al. (2016), Rahman et al. (2016), Al-rahmi et al. (2014), and Alloway and Alloway (2012).

These studies suggest that academic achievement is positively influenced by the use of social media as students reported the positive effects of social media on collaborative learning more than the traditional face-to-face courses.

The students' satisfaction of using social media encourages them to use this technology with its various applications, and this has the impact of improving their skills, which leads to a better academic achievement. In the context of learning the Quran and Hadith, the majority of students were in support of using this technology and integrating it with their academic life, claiming that it can enrich their performance and achievement. The results of the current paper reports that 159 respondents, forming 93.5 percent of the total number of respondents, are of the view that the use of social media is useful in learning and teaching and that it provides them with the chance to interact and engage with their peers, while just 11 respondents, forming 6.5 percent of the total number of respondents, confirmed that they do not integrate this technology with their academic activities. Moreover, the analysis also suggests that the social media became a more integral part of students' learning environments (Al-rahmi et al. 2017). Al-rahmi et al.'s (2015) results show that students who carried out the Peer Review in groups were less active from the cognitive point of view, while

they devoted more effort to deal with organizational matters and discourse facilitation.

Theoretical Implications

The most important theoretical contribution of this research is constructivism theory on the use of social media for collaborative learning through interaction and engagement. This study provides empirical evidence of how to use social media for collaborative learning through interaction and engagement to use social media for collaborative learning that can affect the teaching and learning in Malaysian higher education. This is a substantial theoretical contribution to previous constructivism theory studies which did not consider the influence of using social media for active collaborative learning and engagement.

Practical Implications of Research

Below the implications based on the result of this research; it is vital to appoint that the use of social media for collaborative learning and engagement must be able to encourage students in using social media for active collaborative learning and engagement to affect the teaching and learning in Malaysian higher education. Moreover, educational institutions are encouraged to enroll students who are savvy to using social media for active collaborative learning and engagement courses rather than forcing them to do so. By doing so, the institutions may incorporate all the components and tools of using social media during their learning process.

CONCLUSION

The current paper was an attempt to explore the use of social media and its influence represented by collaborative learning and engagement in the context of learning the Quran Hadith. This paper was carried out at University of Technology Malaysia (UTM), an institution of higher education. By proposing a model and analyzing the data obtained, it was found that collaborative learning is positively influenced by the interactivity and engagement provided by social media, which might enrich the students' learning and achievement in learning the Quran and Hadith. This is true as more opportunities are provided for getting access to knowl-

edge and resources. The current work also recommends that future studies include other elements to assess the influence of different factors affecting learners' performance through collaborative learning.

FUTURE RESEARCH

Future research should consider investigating how the use of social media can best be supported by qualitative research. Furthermore, it is also recommended that similar studies be conducted in several countries.

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