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Perceived Effectiveness of Social Media as an English Language Learning Tool

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Abstract

Little is known about the potential effects of social media usage on the learning performance of undergraduates, especially female students in some Arab/Islamic cultures, where sex-segregated education is the norm, and the freedom of expression of women may be suppressed. The purpose of the current study was to test the correlation between the independent variables (including, level of social media use, interactivity with peers, interactivity with teachers, active cooperative learning, engagement) and the dependent variable (i.e., learning performance) of female Saudi students in a sex-segregated educational system. A cross-sectional survey was administered to 283 participants, representing 15.8% of the target population of female Saudi students enrolled on a distance learning course at King Abdulaziz University. The data were analyzed by partial least squares structural equation modeling, to generate and validate the Social Media-Learning Performance (SM-LP) model. The SM-LP model predicted with a substantial effect size ($R^2 = 67.7\%$) that female Saudi students perceived that they could potentially improve their learning performance, in a sex-segregated education system, through high levels of social media use, stimulating inter activity with peers and teachers, as well as active collaborative learning, and engagement. All the path coefficients were statistically significant ($p < .05$) reflecting a strong endorsement of the use of social media as an effective learning tool. The findings have important implications for sex-segregated educational context.

Keywords: Computer-mediated communication, English language learning, language learning tool interactive learning environments, perceived effectiveness, Social media

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1. Introduction

Social media is defined as “forms of electronic communication through which users create online communities to share information, ideas, personal messages, and other content” (Merriam-Webster Dictionary, 2014). Online learning communities operate by providing opportunities for learners to interact with their peers and teachers and to receive guidance and information that is beneficial for the acquisition and development of their knowledge and skills. Social media, including networks, blogs, and forums, transform internet users from passive receivers to active learners, by facilitating interactivity and engagement in communication (Grabowicz, 2014). A new global generation of learners has benefitted from the development of online communities in the 21st century (Rosen & Nilson, 2008). The use of social media is widely believed to enhance teaching and learning at course delivery level by providing students with interactive content and improved support services, including tutoring and feedback (Martínez, Alemán & Wartman, 2009).

Most of the research published in the last five years on the use of social media in educational settings has been conducted in the Western world (e.g., Chao, Parker, & Fontana, 2011; Dunn, 2014; Grabowicz, 2014; Heiberger, & Junco, 2011; Martínez, et al., 2009; Neier & Zayer, 2015; Rosen & Nilson, 2008; Våljataga & Fiedler, 2009). Researchers have generally concluded that social media provide a familiar, easy, fun, and effective way for many students to learn, and that educators should satisfy the needs of students to learn through social networking. Such conclusions may not, however, be applicable in the Arab/Islamic world (Shabrg, 2012) providing the rationale for the current research that investigates the perceived effectiveness of social media as a learning tool by female undergraduates in the Kingdom of Saudi Arabia (KSA).

The Internet in the KSA is mainly used for social purposes and communication (Albahlal, 2012; Masmah, 2011). In the Arab region, Saudis have recently become the most active users of social media, such as Twitter and Facebook. The number of Twitter users in the KSA grew more than 3,000% between 2011 and 2012 (Socialclinic, 2013). In 2012, the number of Saudis who were estimated to be using Twitter and Facebook was estimated to be 393,000 and nearly 4 million, respectively (Fatany, 2012). Many Saudis enjoy social networking since it enables them to say what they may not be able to say fearlessly in real life, providing a breather for them from the suppression under which they may be living (BBC, 2014). In line with the rapid growth of social media usage among the Saudi population, the social media usage at universities in the KSA has also developed rapidly in the last five years (Al-Khalifa & Garcia, 2013; Shabrg, 2012).

Limited research has examined the effectiveness of social media as tools to encourage interactivity and collaboration between Saudi teachers and undergraduates. Kutbi (2014) conducted a qualitative survey with 25 female undergraduates at King Abdulaziz University (KAU), and concluded that a majority of participants perceived using social media in education positively. Alshareef (2013) similarly found that among 100 undergraduates at KAU (60% female) the social network played a major role in student satisfaction with an online communication course. Al-Sharki and Hashim (2016) carried out a survey with 2,605 undergraduates at various colleges in KAU (54% male) revealing that 79% used social media for entertainment, 67% for information searching, and 62% for learning. Differences were found between male and female students regarding their preferred social media applications and frequency of use of social media, possibly reflecting the influence of the sex-segregated

educational system in the KSA. According to the Saudi Ministry of Higher Education (2006) both males and females are provided with equal education at all levels in the Kingdom; however, education in the KSA is still segregated by sex. Female Saudi students study in separate colleges where no male students are allowed unless through a video link.

There have been a number of studies on the advantages and disadvantages of undergraduates' use of social media in the KSA, the descriptive surveys of Alshareef (2013) and Al-Sharki and Hashim (2016) and the review of social media usage in higher education by Al-Khalifa and Garcia (2013). However, the effectiveness of social media as a learning tool has not been quantitatively evaluated. There is a gap in the literature regarding the extent to which social media usage may help improve the English language learning performance of undergraduate students, especially female students, in the context of the Arab/Islamic cultural background of the KSA.

1.1 Conceptual framework

The proposed conceptual framework for this study is the Social Media -Learning Performance (SM-LP) model, devised by the researcher, and defined diagrammatically in Figure 1. This explanatory model is underpinned by Social Learning Theory (Bandura, 1986) explaining that effective learning involves modeling processes, in which the learner is stimulated by interactions with his or her environment, including other individuals, as well as external educational media. The SM-LP model is supported by empirical research (Dunn, 2014; Grabowicz, 2014; Heiberger, & Junco, 2011; Martínez et al., 2009; Rosen & Nilson, 2008; Våljataga & Fiedler, 2009) concluding that the frequent use of social media (Level of Use) should ideally improve the level of communication between students (Interactivity with Peers) and also between students and teachers (Interactivity with Teachers). Interactivity with teachers through frequent online participation via social media is proposed to reduce diversity and open up diverse lines of communication (Hrastinski, 2009; Jackson, 2011). Furthermore, the frequent use of social media is assumed to stimulate interactivity between peers, enhancing knowledge transfer between students (Chen & Bryer, 2012; Fewkes & McCabe, 2012). The SM-LP model also posits that interactivity associated with social media usage stimulates group learning activities (Active Collaborative Learning) as well as sustained involvement in learning (Engagement). The SM-LP model explains why many students who are skilled in technology, including the use of social media, tend to become active learners (Resta & Laferrière, 2007) and also become effectively engaged in learning (Carini, Kuh, & Klein, 2006; Carnaghan & Webb, 2007; Junco, 2012; Junco, Helbergt, & Loken, 2011).

The SM-LP model predicts that frequent use of social media stimulates interactivity with peers and teachers, active collaborative learning, and engagement, to explain a high proportion of the variance in student learning performance. The validity of the SM-LP model needs to be tested, providing a rationale and direction for the current study.

1.2 Research aims and objectives

The aim of this study was to provide empirical data to support the development of the SM-LP model defined in Figure 1. The empirical model was constructed using measurements based on the perceptions of female undergraduate students in the KSA regarding their use of social media. The objective of this study was to evaluate the validity, reliability, and strength of

the relationships between the six latent variables in the SM-LP model (i.e., Level of Use, Interactivity with Peers, Interactivity with Teachers, Active Cooperative Learning, Engagement, and Learning Performance). The results would lead to practical implications of the outcomes of the SM-LP model in the context of sex-segregated education of female students with an Arab/Islamic cultural background. The aims and objectives of this study supported the recommendation of Shabrg (2012) that more empirical studies should be conducted in the KSA to evaluate the use of social media as instructional and learning tools which encourage and support the collaboration of students and teachers. Furthermore, this study also supports the recommendation that social network technology use should be evaluated and understood in the classrooms in King Abdulaziz University (Alshareef, 2013).

2. Methods

2.1 Population and sample

The target population consisted of 1796 female Saudi undergraduate students, enrolled in ELCA 102, a second level distance learning programme, studying for a Bachelor's degree, in the female section of King Abdulaziz University, Jeddah, KSA. This university is developing an interactive social media based learning environment, in which the educators are encouraging the use of social media in their academic courses to promote student learning, and to improve English language skills (Al-Sharki & Hashim, 2016). A simple random sample of 283 female students, aged 17-23 years was drawn from the target population, residing in Jeddah or cities and villages outside Jeddah. This sample size, representing 15.8% of the target population, provided survey response data with a 1% margin of error and 95% confidence limits.

2.2 Data collection

A cross-sectional survey was administered between April 8th and April 27th 2016. The survey was conducted in compliance with the ethical standards and research protocol approved by Institution Review Board of KAU. All the respondents provided their informed consent. The 283 participants were sent a copy of the survey instrument via the Blackboard® network at KAU. The participants also communicated their responses to the instrument using the Blackboard network.

2.3 Instrument

The self-report instrument was adapted by the researcher from a questionnaire originally developed by Blasco-Arcas, Buil, Hernández-Ortega & Javier (2013) to evaluate the role of interactivity, active collaborative learning, and engagement in learning performance, in the context of using clicker applications in the classroom by undergraduate students. The 26 items listed in Table 1 provided the response data required to measure the six latent variables in the SM-LP model. The items used to operationalize Level of Use were measured using a 5-point ordinal scale, ranging from 1 = lowest frequency of use and 5 = highest frequency of use. The items used to operationalize Interactivity with Teachers, Interactivity with Peers, Active Collaborative Learning, and Engagement were measured using a 5-point ordinal scale, where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. Four items were not included in the SM-LP model, but were included to determine the respondents' frequency of use of Facebook®, Twitter, and YouTube, and to ask which social media applications were chosen by university students in learning English as their most favorite?

2.4 Data Analysis

The frequency distributions of the responses to items concerning the level of use of social media were computed using IBM SPSS® version 20.0. The method of analysis applied to construct the SM-LP model was partial least squares structural equation modeling (PLS-SEM) using SmartPLS® version 2.0.M3 (Ringle & Wende, 2005). PLS-SEM was chosen because it is a non-parametric technique, that has less restrictive sample size and data requirements than alternative parametric methods, such as covariance-based SEM (Hair, Hult, Ringle, & Sarstedt, 2014; Wong, 2013). PLS-SEM was particularly useful for this study because the survey item scores were measured at the ordinal level, and were not normally distributed.

The PLS-SEM path diagram in Figure 2 was constructed assuming that Level of Use was the only exogenous latent variable (i.e., not predicted by other latent variables). The five endogenous latent variables were as follows: (a) Interactivity between Peers, and Interactivity between Teachers, predicted by Level of Use; (b) Active Collaborative Learning and Engagement, predicted by a combination of Interactivity between Peers and Interactivity between Teachers, and (c) Learning Performance, predicted by a combination of Active Collaborative Learning and Engagement. No mediating or moderating effects were assumed.

Statistical evidence to warrant the validity and reliability of the SM-LP model was computed by SmartPLS using the protocols described by Hair et al. (2014) and Wong (2013). Tests were conducted to determine if (a) the six latent variables in the measurement model, operationalized from the 5-point ordinal item scores using confirmatory factor analysis, exhibited adequate levels of factorial validity, convergent validity, discriminate validity, and internal consistency reliability; (b) the bootstrapped mean values of the path coefficients (β weights), defining the predictive relationships between the latent variables in the structural model, were significantly greater than zero at $\alpha = .05$, and (c) a substantial proportion of the variance in Learning Performance was explained by the structural model, based on the criteria that R^2 values of 67%, 33%, or 19% were defined respectively as “substantial”, “moderate” or “weak”.

3. Results

3.1 Level of use of social media

The majority (over 60%) of the 283 respondents agreed or strongly agreed that they: (a) had above average to high experience in using social media (198, 70.0%); (b) were familiar with the use of social media (206, 72.8%); (c) frequently used social media for entertainment (217, 76.7%); (d) liked to use social media for communicating with friends and family (241, 85.2%); (e) liked to use social media for education (214, 75.6%); and (f) were not facing any problems in using social media for learning (182, 64.3%).

The respondents agreed or strongly agreed that they used specified social media applications, in order of magnitude of frequency, as follows: Facebook (45, 15.9%); Twitter (91, 32.1%); YouTube (215, 75.9%), and other applications (224, 79.1%) including Blackboard, Snapchat, Google, Instagram and WhatsApp. The frequencies of the responses to the question “In your opinion, what are the most favorite social media applications chosen by university students in learning English” in order of magnitude, were as follows: Blackboard (8, 2.8%); Facebook (10, 3.5%); Snapchat (10, 3.5%); Google (14, 5.0%); Instagram (21, 7.4%); Twitter (40, 14.2%); WhatsApp (49, 17.3%), and YouTube (151, 53.4%). Confirmation of the popularity of

YouTube was revealed by one respondent stating “I personally think that Facebook and Twitter's time are over... I think a lot of people use YouTube to watch and learn better English.”

3.2 Validation of the measurement model

The factorial validity of the SM-LP model was confirmed by the consistently strong factor loading coefficients (ranging from .500 to .875) between the latent variables and their corresponding reflective items. Examination of the cross-loadings in Table 2 indicated a high level of discriminant validity. The factor loadings for the items reflecting each latent variable were consistently greater than their cross-loadings on alternative latent variables.

The quality criteria for the measurement model are summarized in Table 3. The six latent variables satisfied the conventionally accepted quality criteria to validate a PLS-SEM model (Hair et al., 2014; Wong, 2013) specifically (a) convergent validity was confirmed, because the average variances explained (AVE = 52.3% to 79.3%) by the items reflecting each latent variable were consistently greater than the minimum requirement of 50.0%; and (b) the internal reliability values (Composite Reliability = .812 to .939) for the items reflecting each latent variable were consistently greater than the minimum requirement of .7.

3.3 Evaluation of the structural model

The path diagram for the SM-LP model is presented in Figure 2. Statistical evidence to evaluate the SM-LP model was computed by SmartPLS. The bootstrapped mean values of the path coefficients (β weights) defining the predictive relationships between the latent variables in the structural model were all significantly greater than zero at $p < .05$. The effect size was substantial ($R^2 = .677$) indicating that 67.7% of the variance in Learning Performance was explained by the structural model.

The positive path coefficients in Figure 2 reflected the relative strength of the predictive relationships between the latent variables in the SM-LP model. The path coefficients between LOU \rightarrow IWP ($\beta = .630$; $R^2 = .396$); and LOU \rightarrow IWT ($\beta = .600$; $R^2 = .360$) indicated that a high level of use of social media explained a moderate level of the variance of the interactivity between peers and teachers. The combination of the path coefficients between IWT \rightarrow ACL ($\beta = .478$); and IWP \rightarrow ACL ($\beta = .423$) indicated that interactivity between peers and teachers explained a substantial proportion ($R^2 = .725$) of the variance in active collaborative learning. The combination of the path coefficients between IWP \rightarrow ENG ($\beta = .386$) and IWP and ENG ($\beta = .478$) indicated that interactivity between peers and teachers explained a moderately substantial proportion of engagement ($R^2 = .596$). Ultimately, the SM-LP model predicted that an increase in active cooperative learning, in combination with engagement, would result in enhanced learning performance, indicated by ACL \rightarrow LP ($\beta = .371$) and ENG \rightarrow LP ($\beta = .494$) with a substantial effect size ($R^2 = .677$).

4. Discussion

4.1 Summary of Findings

The findings of previous research conducted in educational settings in the Western world have highlighted that social media usage is an essential aspect of today's technologically rich society, and it may also help to improve the learning performance of students (e.g., Dunn, 2014; Grabowicz, 2014; Heiberger, & Junco, 2011; Martínez, et al., 2009; Rosen & Nilson, 2008;

Väljataga& Fiedler, 2009). Shabrg (2012), however, predicted that the Saudi educational system, may require “a quantum leap” to keep up with modern trends, including the use of social media. In the context of a rapidly developing educational system in the Arab/Islamic world, the current study provided empirical evidence to support the argument that a representative sample of 283 female Saudi students at KAU perceived that the Saudi educational system has achieved such a leap.

4.2 Level of Use of Social Media

The results of the cross-sectional survey at KAU in 2016 confirmed that the prediction of Shabrg (2012) was pessimistic. The response data indicated that social media usage provided frequent opportunities for the majority of the female Saudi undergraduate students to interact with their peers and teachers, and thereby receive guidance and information beneficial for their development of knowledge and skills, leading to a high level of learning performance. The respondents endorsed the use of eight social media applications, specifically Blackboard, Facebook, Snapchat, Google, Instagram, Twitter, WhatsApp, and YouTube, in increasing order of magnitude. The majority of the respondents reported that they frequently used social media for entertainment, liked to use social media for communicating with friends and family as well as education, and they did not face any problems using social media for learning. These responses were consistent with previous surveys reflecting the high proportions of undergraduate students at KAU (Al-Shareef, 2013; Kutbi, 2014; Al-Sharki & Hashim, 2016) and elsewhere (Jahan, 2012; Neier & Zayer, 2015) endorsing the perceived usefulness of social media.

Facebook is reported to be the most commonly used platform for online social networking among university students (Guimarez, 2014; Junco, 2012); however, the current survey revealed that Facebook was not popular among the female Saudi students at KAU, consistent with a previous survey (Al-Sharki & Hashim, 2016). The low frequency of use of Facebook was possibly because it is primarily designed as a network for socialization, including making new contacts. In Islamic cultures, male students tend to be more frequent users of social media for making new contacts compared to females (Al-Sharki & Hashim, 2016; Maslam & Usluel, 2011). The cultural and religious ideology of some members of Saudi society is an obstacle inhibiting the use of Facebook for socialization by women. Some parents in the KSA may refuse to let their daughters use Facebook, even for educational purposes, believing that social networking is immoral, because it encourages abnormal or inappropriate practices (Al-Rabeay, 2013; Hamoud, 2013). Kabilan, Ahmad, and Abdin (2010) suggested that Facebook is valuable for incidental language learning in Asia. Students whose first language is not English can engage in social chats with their English speaking friends. The female Saudi student at KAU did not frequently use Facebook for this purpose.

The current study, in line with a previous survey (Al-Sharki & Hashim, 2016), revealed that the most popular social media application used by female students at KAU is YouTube. It provides a wide range of videos with remarkable educational content in English. It is possible to easily share YouTube content between peers and teachers. The current survey revealed that WhatsApp is also popular at KAU, mainly due to the recent implementation of WhatsApp by educators to communicate with students in the university network.

4.3 Social Learning-Learning Performance model

The statistical evidence obtained using PLS-SEM established the validity, reliability, and significance of the relationships between the six latent variables in the SM-LP model. The SM-LP model predicted that a high frequency of use of social media was a significant driving force that explained a substantial proportion of the variance in the perceived learning performance of female Saudi students ($R^2 = 67.7\%$). The SM-LP model predicted that the perceived levels of interactivity, engagement, and active collaborative learning of the female students at KAU would increase as a result of a high frequency of participation in social media, eventually resulting in increased learning performance. The predictions of the SM-LP model were consistent with the findings of previous quantitative studies, conducted outside the KSA, highlighting positive correlations: (a) between the level of use of social media and the level of interactivity among peers and teachers (Dunn, 2014; Grabowicz, 2014; Heiberger, & Junco, 2011; Martínez et al., 2009; Rosen & Nilson, 2008; Väljataga & Fiedler, 2009); and (b) between the levels of interactivity, engagement, active collaborative learning, and the learning performance of students (Carini et al., 2006; Carnaghan & Webb, 2007; Junco, 2012; Junco et al., 2011; Resta & Laferrière, 2007).

4.4. Implications for educational theory and practice

The positive outcomes of the SM-LP model, predicting that improved learning performance is perceived to be associated with a high frequency of use of social media, expand Social Learning Theory (Bandura, 1986) by explaining how effective learning involves modeling processes, in which learners are stimulated by interactions with peers and teachers, as well as active collaboration and engagement, through social media usage. Furthermore, the SM-LP model has practical implications with respect to the sex-segregated education in Arab/Islamic cultures. According to Ertürk (2009), sex-segregation in Arab Islamic culture adversely impacts the quality of education, because the allocation of resources and access are said to be unequally distributed. Female faculty members complain that women's branches of universities are less equipped than those for men, and that the highest decision-making positions are occupied by men. Furthermore, sex-segregated education may be an obstacle preventing the greater participation of women in Saudi society because it may grant more social power to men over women (Hamdan, 2005). Recent developments, promoting social media usage for educational purposes by female students in the KSA, may be helping to reverse the trend of adverse impacts of sex-segregated education. The positive outcomes of the SM-LP model are consistent with the arguments of some educators in the KSA, who believe that the use of social media may help improve the quality of the female education system. Alkahtani (2012) suggests that social media have a positive effect on the collaborations between Saudi students, because female students are able to retain their cultural and religious values, without being in physical contact with the opposite sex. Social media is perceived as a safe environment for female Saudi students to interact with other students and their teachers, and thereby enhance their learning performance, without contravening cultural or religious ideology. Furthermore, a high frequency of use of social media by women in the KSA may also promote freedom of expression, in a cultural environment where such freedom may be suppressed (BBC, 2014; Kutbi, 2014).

The magnitudes of the path coefficients for the endogenous variables in the SM-LP model require consideration in the context of implications for educational practice. Based on the relative values of R^2 to reflect the effect sizes (Hair et al., 2014), the social media stimulated interactivity between peers and teachers explained a substantial proportion of the variance in Active

Collaborative Learning ($R^2 = 72.5\%$) but a smaller proportion of the variance in Engagement ($R^2 = 59.6\%$). Consequently, there is room for improvement for educators at KAU to devise more interactive activities, based on the use of social media that may help improve the students' level of sustained involvement in learning. Although an ambitious goal, this recommendation is consistent with the conclusion of Chao et al. (2011) that, in order to develop an interactive social media based learning environment, it is not only important to build a community of actively collaborating users, it is also necessary to leverage social media technologies to enhance the level of student engagement.

5. Conclusions and recommendations for future research

The validation and evaluation of the SM-LP model indicated that a high frequency of social media usage by female Saudi undergraduate students may promote interactivity, active collaborative learning, and engagement, and may ultimately result in improved learning performance. Increasing the frequency of usage of social media may help improve the quality of the Arab/Islamic sex-segregated education system. The limitation of model is that it was operationalized using cross-sectional survey data, based on the perceptions of students. Consequently, the model did not prove the existence of a causal relationship between social media usage and learning performance. Further studies, using an experimental research design, are required to determine the extent to which enhanced learning performance (e.g., improved grades for activities, tests, and examinations) may be directly or indirectly linked to the high frequency of use of social media. Furthermore, because this study focused only on female Saudi students, the question of whether the SM-LP model would generate similar predictions for male Saudi students' needs to be addressed. Al-Sharki and Hashim (2016) found that the female students at KAU had a stronger inclination toward usage of social media for learning compared to their male counterparts, suggesting that the SM-LP model might generate significantly different outcomes for male students.

The overall conclusion is that the SM-LP model demonstrated a very strong acknowledgement and endorsement of the use of social media as an effective learning tool by female Saudi undergraduates in a sex-segregated educational system. The SM-LP model predicted that female Saudi students perceived that they could potentially improve their learning performance, through using social media. The extent to which the SM-LP model is relevant to other educational systems, outside the KSA, needs to be evaluated. Replication of the SM-LP model based on survey data collected at other universities would allow for meaningful intercultural and international comparisons.

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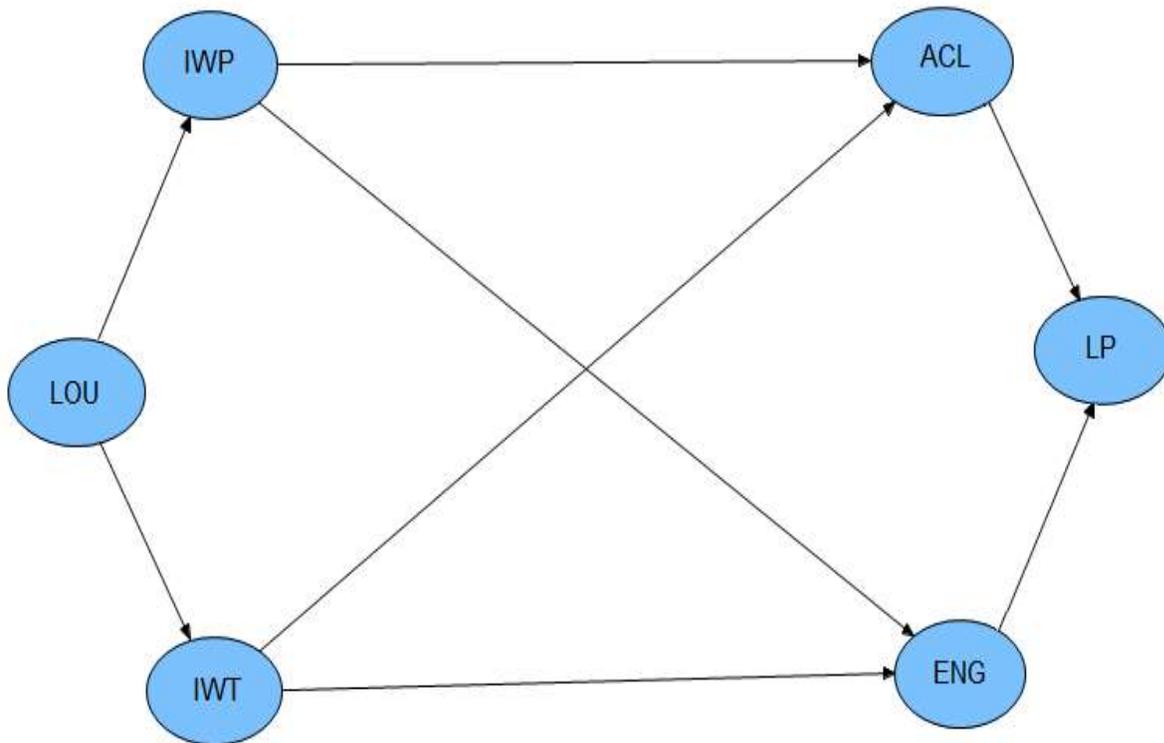
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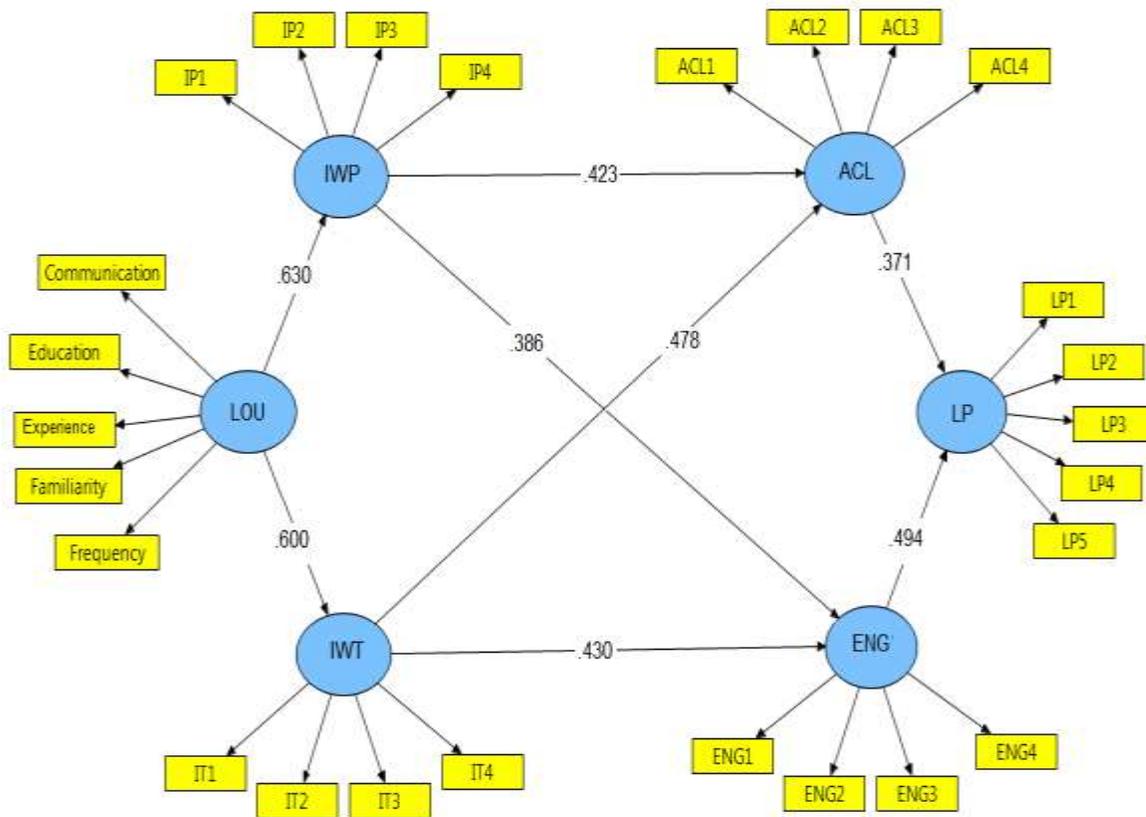
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ACL = Active Cooperative Learning; ENG = Engagement; IWP = Interaction with Peers;
 IWT = Interaction with Teachers; LOU = Level of Use; LP = Learning Performance

Figure 1. Social Media - Learning Performance (SM-LP) model



ACL = Active Cooperative Learning; ENG = Engagement; IWP = Interaction with Peers; IWT = Interaction with Teachers; LOU = Level of Use; LP = Learning Performance

Figure 2. Social Media-Learning Performance (SM-LP) model operationalized by PLS-SEM

Table 1

Items with 5-point scales used to measure the latent variables in the SM-LP model

LEVEL OF USE (LOU)

Communication: I like to use social media for communicating with friends and family

Education: I like to use social media for education

Experience: Experience using social media

Familiarity: I am familiar with the use of social media

Frequency: I frequently use social media

INTERACTIVITY WITH PEERS (IWP):

IWP1: Using social media facilitates my interactions with other students.

IWP2: Using social media gives me the opportunity to enhance my feeling of belonging to my student community

IWP3:Using social media facilitates me to learn English with other students
 IWP4: Using social media facilitates exchange of information between students.

INTERACTIVITY WITH TEACHERS (IWT)

IWT1:Using social media facilitates my interactions with the teachers
 IWT2:Using social media gives me the opportunity to obtain all the information that I need from the teachers
 IWT3:Using social media helps teachers to improve the learning experience of students
 IWT4:Using social media provides teachers with an opportunity to provide feedback to students

ACTIVE COOPERATIVE LEARNING (ACL)

ACL1: Using social media helps me to actively collaborate with others in my learning experience.
 ACL2: Using social media allows me to create my own learning experience with other students
 ACL3: Using social media allows me to share my learning experience with other students
 ACL4:Using social media gives me freedom to participate in my own learning experience.

ENGAGEMENT (ENG):

ENG1:Using social media makes leaning more interesting
 ENG2:Using social media makes me feel that I am I engaged in a learning community
 ENG3: Using social media improves my personal relationships with others
 ENG4: I am very satisfied with my overall experience of using social media

LEARNING PERFORMANCE (LP)

LP1:Using social media helps me to better understand the English language
 LP2: Using social media helps me to improve my learning in class
 LP3: Using social media helps me to improve my performance in activities and examinations
 LP4: My learning performance would not be so good if I do not use social media
 LP5: I am not facing any problems in using social media for learning

Table 2
Factor loading coefficients for the 26 items in the measurement model

Items	Latent variables					
	LOU	ACL	ENG	IP	IT	LP
Communication	.796	.507	.417	.543	.487	.419
Education	.718	.520	.408	.550	.545	.466
Experience	.500	.241	.284	.205	.209	.253
Familiarity	.651	.271	.300	.291	.286	.282
Frequency	.708	.352	.373	.398	.377	.351
ACL1	.536	.875	.720	.715	.717	.698

ACL2	.540	.902	.756	.725	.750	.724
ACL3	.525	.904	.689	.726	.705	.672
ACL4	.506	.880	.704	.680	.715	.642
ENG1	.480	.756	.864	.666	.682	.734
ENG2	.411	.705	.878	.622	.612	.693
ENG3	.399	.658	.834	.635	.611	.596
ENG4	.497	.573	.778	.502	.553	.632
IP1	.543	.646	.573	.848	.628	.591
IP2	.536	.671	.600	.831	.607	.552
IP3	.424	.594	.596	.765	.640	.688
IP4	.545	.693	.600	.819	.701	.604
IT1	.515	.746	.642	.744	.845	.652
IT2	.538	.677	.606	.673	.831	.585
IT3	.462	.705	.666	.650	.878	.680
IT4	.472	.535	.500	.524	.747	.547
LP1	.452	.585	.643	.630	.652	.794
LP2	.488	.729	.751	.683	.683	.904
LP3	.475	.711	.664	.623	.655	.831
LP4	.404	.533	.575	.531	.529	.762
LP5	.366	.534	.566	.533	.490	.760

Note: Highlighted factor loadings refer to items reflecting each of the latent variables

Table 3

Quality criteria for the measurement model

Latent Variable	Average Variance Explained (AVE %)	Composite Reliability
Active Collaborative Learning	79.3%	.939
Engagement	70.4%	.905
Interaction with Peers	66.7%	.889
Interaction with Teachers	68.4%	.896
Learning Performance	65.9%	.906
Level of Use	52.3%	.812