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Students’ Learning Styles and Their Effects on the Use of Social Media Technology for Learning

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Abstract

Students with varying different learning styles approach learning differently and have different approaches in learning activities. With the emergence of social media technologies, investigating the effect of these styles on their intentions to use social media for learning has become all the more important. It is pertinent to investigate if their styles affect their intentions to use social media for learning. This study investigated the factors that affect students’ intentions to use social media for learning based on their learning styles (i.e., participatory, collaborative, and independent), using the Social Media Acceptance Model. By Convenience sampling, resulted in the recruitment of 300 Malaysian students were recruited via an online survey (N_{participatory} = 116; N_{independent} = 97; and N_{collaborative} = 87). The survey was prepared based on drawing on the Social Media Acceptance Model. It was piloted before the final data collection exercise was conducted in August 2013. The students’ demographic details of the students were analyzed using Statistical Program for Social Sciences 21, whilst while path modeling and multivariate analyses were administered using SmartPLS 2.0. The Results revealed the significant effect of Self and Performance to significantly affect on students’ intentions to use social media regardless of their learning styles. A pair-wise comparison showed that Self to was more significant be significantly more important to participatory style students compared to collaborative students. Effort is was found to be the least significant factor, indicating the popularity of social media
among students, suggesting existing widespread use and familiarity of social media amongst the students. Further insight into understanding the different driving factors of that drive students with different learning styles to use social media for students with different learning styles will help educators use this technology to assist learning more effectively. Be beneficial for educators to effectively use social media to assist students in their academic endeavors.

Keywords: social media technology; learning styles; collaborative; independent; participative

1. Introduction

Various academics have urged the use of the Web as an educational tool has been promoted by various academics (Hartley & Bendixen, 2001; Greenhow, Robelia, & Hughes, 2009), highlighting its pivotal role in education and is an integral part of education today. Recently, students and academics alike have adopted social media tools such as Facebook, Twitter, YouTube, and blogging platforms. For instance, as reported, faculty members were found to use Facebook and YouTube both in and outside classrooms for teaching purposes, such as to upload educational videos or learning materials for students (Moran, Seaman, & Tinti-Kane, 2011). Tools such as Twitter allow lecturers to share information and resources with their students (Veletsianos & Navarrete, 2012), whereas instant messaging and Wikis have been found to facilitate collaboration among peers were deemed to support collaboration work with peers (Hrastinski & Aghae, 2012).

Studies have shown that students enjoy expressed enjoyment using online social media sites for learning purposes as a means of complementing and enriching their learning activities due to its supportive element for their learning activities and its ability in enriching their learning experiences (Veletsianos & Navarrete, 2012).
media tools are also preferred were also viewed favorably in e-learning courses, particularly for easy communication between students and academics as a vehicle for quick and easy communication amongst students and academics (Brady, Holcomb, & Smith, 2010). However, not all students can be assumed to benefit from social media either due to their diverse backgrounds or due to their different learning styles it may not be appropriate to suggest that social media might be beneficial for every student, as students are generally from diverse backgrounds, and most importantly have different learning styles.

Researchers in the educational field have espoused proposed various theories on the variation in how students’ learning style varies (Saljo, 1981). In general, a learning style generally refers denotes to a person’s preferred way of learning (Marriott, 2002), and the methods of learning of students are which is often associated with their one’s learning performances, and is therefore seen as considered to predict a predictor of academic success. Thus, it is imperative that educators understand students’ learning styles are thus vital for educators, especially with the advent and wide use of social media tools. In a recent survey conducted by Pew Research Center, Facebook still remains the most popular social networking site accounting for where approximately 71% of Internet users are on Facebook, followed by LinkedIn (28%), Pinterest (28%), Instagram (26%), and Twitter (23%). Some findings obtained also revealed that users were increasingly engaged with an increase of engagement for Facebook users (Duggan, Ellison, Lampe, Lenhart, & Madden, 2015). There are numerous Although several studies have focusing focused on the use of social media tools and in education (Balakrishnan, 2014; Junco, 2011; Kalpidou, Costin, & Morris, 2011; Roblyer, McDaniel, Webb, Herman, & Witty, 2010), however there is a gap in efforts to investigate the influence effect of learning styles on students’ behavioral intentions intention to use social media for learning has not been investigated yet.
Therefore, the current study intends to investigate the effects of different learning styles on the use of social media in higher education by leveraging the different dimensions of learning styles. To be specific, the study aims to (i) identify factors that influence the students’ intentions to use social media for learning based on their specific learning styles, and (ii) to compare the key factors between groups of students with different learning styles.

The rest of the paper is structured as follows: the next section elaborates on the various social media tools and learning styles are described in Section 2, which is then followed by the research methodology in Section 3. The salient results are presented in Section 4, and the paper is finally concluded by a discussions and conclusions section.

2. Literature Review

2.1 Types and forms of social media

Social media generally enable allows users to create, share, and exchange data with others. Social media sites services such as Facebook, Twitter, and YouTube allow people from diverse backgrounds to express themselves their thoughts, and connect to each with other users anytime and anywhere across the world (Lenhart, Purcell, Smith, & Zickuhr, 2010). There are various forms of social media are available, ranging from the media-sharing tools such as YouTube and Flickr, to social networking sites such as Facebook, Ning, and LinkedIn. Others include social bookmarking tools (e.g., Delicious and CiteULike), collaborative knowledge development tools (e.g., Wikipedia), and creative works
tools such as blogs (e.g. WordPress, and Blogger), and microblogs (e.g., Twitter), among others.

Facebook is a popular social networking site that allows users to share pictures and information, and as well to connect form groups of friends with other people. It ensures the privacy of its users also considers privacy concerns and through several customizable settings enables various privacy settings for its users (Everson, Gundlach, & Miller, 2013). Interestingly, other than in addition to allowing users to connect and socialize being a social networking site, Facebook’s offers additional functionalities such as email, bulletin-board, and instant messaging, which allow for the easy spread of information users to collaborate and eases the dissemination of information (Junco, 2011). Other social media sites such as MySpace and Friendster offer similar services for socializing share the same goal of getting people together, but although none of them have has gained the popularity of been as popular as Facebook, specifically among the college students. Researchers such as Roblyer et al. (2010) found that students in higher education institutions are preferred more positive about using Facebook and other similar technologies to supplement learning for supporting teaching and learning than in contrast to faculty members who prefer traditional technologies. In fact, they found that students preferred obtaining information and references via Facebook and e-mail to conventional enjoyed getting their references and information through Facebook and email compared to traditional face-to-face interactions. Yu, Tian, Vogel, and Kwok (2010) investigated the effects of social networking engagement on Facebook, and concluded that revealing the positive impact of undergraduates’ online social networking activities have a positive impact on their learning in undergraduates, as well as helping connect with their peers and in addition to helping the students gain acceptance among their peers and adapting adapt to new university cultures. Others such as Bowers-Campbell (2008) argued that Facebook may make students more self-efficient and independent improve
low self-efficacy and promote independent learning by increasing communication with instructors and classmates.

Another popular social media site is Wikis, – a collection of mutually authored web pages that helps facilitate can be influential in group and collaborative works projects (West & Williamson, 2009). Wikis allow users to learn from each other and their instructors with collaborative updates permit the learners to work together in a mutual environment where collaborative updates are available and observable to all learners and their instructors (Lundin, 2008). Furthermore, Wikis encouraged critical thinking via online brainstorming sessions among learners by allowing learners to conduct brainstorming sessions online (Wang, Hao, Cao, & Li, 2014).

Blogging on the other hand is a text-based online tool. Blogs allow users to create web content easily are intended to permit fast and simple formation of web content, incorporate common interfaces with comments and posts, and add immediate hyperlinks to information resources (Du & Wagner, 2007). At present, Popular the popular blogging tools available today include WordPress, Blogger, and Tumblr. Studies inspecting on learners’ experience of applying blogs blogging platforms found that feedback on others’ and their own blogs facilitated evaluating other blogs and getting feedback on one’s own blog were more beneficial in promoting interactive learning (Churchill, 2009; Ellison & Wu, 2008).

Tools such as YouTube, Metacafe, and Flickr are known for their online video-sharing online videos feature. For instance, YouTube for example, enables allows its users to rate video clips, comment, and convey their thoughts and engage in discussions (Everson et al., 2013). The use of Learning with multimedia elements such as videos, has been proven shown to be effective for in learning activities (Krauskopf, Zahn, & Hesse, 2012; Zahn, Pea, Hesse, & Rosen, 2010). Learners can are able to develop higher higher-order thinking skills
such as for decision-making and problem solving, as well as communicate and collaborate using YouTube (Greenhow & Robelia 2009).

Most of the studies in the field of social media and education have explored looked into the possibilities of using some of the popular social media tools popular among the youth in teaching and learning considering the huge popularity of such tools among the younger generation (Everson et al., 2013; Greenhow & Robelia 2009; Roblyer et al., 2010). On the other hand, a review of the literature revealed attempts to develop other social media media-enabled tools that can be specifically used for aimed at teaching and learning the field of education. For example, Edmodo, which combines certain features of Facebook, and Twitter, and enables allows teachers and students to communicate communicate and collaboration collaborate between teachers and students. Other educational tools include Piazza, – a question- and- answer web service aimed at catered for students and academics, and Diigo, which is a social bookmarking website that allows its users to bookmark and tag Web web pages. Socrative, Quizizz, and Kahoot! enable help educators assess students via to conduct fun and engaging self-paced assessments quizzes during lecture classes in the form of quizzes. Screencast-O-Matic allows educators to create short educational videos for their students, which can then be saved or uploaded to YouTube. However, these tools are not considered as social media applications and are instead categorized as educational technologies. The current present study focuses on the use of social media, therefore, only tools such as Facebook, Twitter, YouTube, and Wikis wikis etc. have been considered were taken into consideration.

2.2 Learning styles
Learning styles define how learners interact, acquire knowledge, or respond to stimuli in their learning environments (Shaw & Marlow, 1999). An understanding of various learning styles can help is beneficial for both educators and students. Educators can design and customize teaching activities to address different groups of learning styles in order to support their students’ learning endeavors. However, for such categorizing, the students’ learning styles requires a thorough study of sound learning theories and models must be studied in depth.

The literature has classified learning theories into to four major categories: – behaviorism, cognitivism, humanism, and constructivism (Hung, 2001; Thompson, 2012). Behaviorism posits that learners are passive, who respond only to environmental stimuli (Ertmer & Newby, 1993). However, the drawback of the behaviorist learning theory is that it creates teacher-centered instructional design activities for teaching and learning activities. Conversely, Cognitivist cognitivism theory on the other hand emphasizes and encourages the importance of encouraging active learning and to engage the students in the process of acquiring knowledge (Thurlings, Vermeulen, Bastiaens, & Stijnen, 2013). Humanism improves upon the cognitivist cognitivism theory by through its emphasis on student-centered teaching and learning advocating for teaching and learning to be student-centered, which and it recognizes the need to provide a supportive learning environment for learning to take place in order to develop students’ social and critical thinking skills (Khatib, Sarem, & Hamidi, 2013). The constructivist theory strongly advocates self-learning: - students are guided and given the necessary tools for discovery, understanding, and problem solving to discover, understand main ideas and derive the solutions (Ertmer & Newby, 1993). Social constructivism, An aspect of the constructivist theory of learning, is social constructivism that views learning as an active social process, is not passive, that encourages students to participate in social activities for
effective learning and believes that meaningful learning occurs when students are able to participate in social activities (Kim, 2001).

Gaining traction recently from the widespread use of social media and mobile technology is the Social Learning Theory (SLT), which advocates that learning is most effective when learners are allowed to observe and interact with other learners learn most effectively when given the opportunities to interact with other learners and through observations, and that the opportunity to as well as form or participate in small study groups are considered more important than compared to the lecturers’ teaching styles (Bandura, 1971, 2002; Gong, Zhang, & Li, 2014). This theory has become popular with the widespread use of social media and mobile technology.

Three dominant and widely cited learning models are The Myers–Briggs Type Indicator (MBTI), Kolb’s Learning Style Inventory (LSI), and the Felder–Silverman Learning Style Dimensions are three predominant and widely cited learning models. MBTI categorizes learning styles based on the learners’ personalities and proposes four dimensions: orientation (extrovert or introvert), perception (sensing: facts and routine-based, or intuitive: impression-based and non-routine), decision making (thinking: objective and logical, or feeling: subjective), and attitude to outside world (judgment: planning and control, or perception: spontaneous and adaptive) (Carlson, 1985; Montgomery & Groat, 1998). Kolb’s LSI posits the following four categories: divergers (who prefer group-based brainstorming discussions), assimilators (who prefer abstract concepts or ideas), convergers (who prefer hands-on activities and enjoys problem solving), and accommodators (who rely on information and are intuitive) (Kolb & Kolb, 2005).

The Felder–Silverman five-dimensional model of learning includes perception (type of information one prefers, (e.g., external sensory information such as sights and sounds
or internal intuitive information such as insights)), input – (external information, (such as graphics, words, and sounds), organization – (format of information), processing – (method to of process processing information, such as (active or reflective), and understanding – (results from processing, i.e., progression towards comprehensioncomprehending) (Felder, 1993; Felder & Silverman, 1988; Hsieh, Jang, Hwang, & Chen, 2011; Soloman & Felder, 2004;).

Therefore, as the method of processing information is crucial to students’ comprehension enable students’ comprehension of the subject material, students’ method of processing information is vital, and is the main focus in the identification of students’ their learning styles is also important. A Review review of past literatures studies on learning theories and models has revealed led to the identification of three types of learning styles: - participatory, independent, and collaborative (Riechmann & Grasha, 1974; Felder & Silverman, 1988; Sadler-Smith, 1997).

2.2.1 Participatory

Felder and Silverman (1988) classified categorized learners into two main groups, : active versus reflective learners. Active learners prefer exhibit preference towards conducting experiments to process the obtained information obtained in order as a means of testing and validating to test and validate their ideas (Dunn & Carbo, 1981). Generally, students’ participation refers to the amount of energy or effort that students dedicate devote to their academic endeavors activities (Kuh, 2009). As such, students with a participatory learning style actively seek to are eager to learn and understand the subject material, enjoy learning, and take responsibility for their own learning. Students with this learning style are also more likely to do perform well in online learning courses, which require them to be more initiatives
proactive and effort on their part than in typical face-to-face classrooms (Umran-Khan & Iyer, 2009). This learning style shows that reflects students preference towards prefer actively processing information in an active manner through by participation participating in learning activities or discussions. Learners with participatory learning style constantly consistently demonstrate show initiatives and accountability towards their studies.

As indicated by MBTI’s extroverted orientation to life and Kolb’s LSI diverger category, extroverted Students students with extrovert personality tend to gravitate towards opt for group-based discussions or brainstorming sessions, as indicated by MBTI’s extroverted orientation to life and Kolb’s LSI diverger category, and thus, they may be more likely to participate in classroom activities probably may have stronger tendencies to be participative in class. For instance, the integration of integrating Twitter as part of into the learning curriculum by students and academics was found to improve students’ participation and engagement in class (Junco, Heiberger & Loken, 2011). On further exploration, A further review of the characteristics of the participatory learning style were found to finds that they encapsulate draw from both the social constructivism (Kim, 2001) and SLT (Bandura, 1971). As such, popular platforms such as Facebook and YouTube provide allow students with participatory style of learning abundance of opportunities for students with participatory style to interact with their peers online, regardless of their geographical limitations. Therefore, these students may prefer have a tendency to use using social media for learning, as information required and feedback from peers or lecturers can be obtained quickly via through such platforms.

2.2.2 Independent
As opposed to active learners, reflective learners typically prefer working alone in individual assignments where they can work alone. Such students will require time alone to conduct reflections or observations of reflect on the information obtained in solitude, that is, i.e. think and process the information for better understanding in order to understand them (Dunn & Carbo, 1981; Felder & Silverman, 1988). Such learners have an aptitude for An aptitude for theoretical work is typically exhibited, and such learners are usually good at defining and proposing solutions especially problem solving (i.e. which is a key characteristic of assimilators). Reflective learners are not passive nor do they lack or lacking initiative, ; rather, they independently attain an active approach is undertaken toward self-derived knowledge and subject comprehension through one’s own effort and actions (Boyd & Fales, 1983). Reflective learners thrive in individual learning spaces, whereas participatory learners prefer group learning settings.

To stimulate students’ reflective thinking skills, Lecturers may pose questions or conduct activities of reflection during that require reflection during classes to stimulate students’ reflective thinking skills (Davis, 2000). Studies have found shown that students who frequently solve problems requiring reflection attempt to solve problems that encourage reflections have a better understanding of comprehend the subject matter better in the long run (Chen, Wei, Wu, & Uden, 2008; Lee & Chen, 2009). Due to various constraints For in higher education settings, it may not be possible for lecturers to may not be able to frequently engage students in critical thinking activities due to various constraints. This is also applies to noted in online courses, which do not involve face-to-face interactions where face to face meetings are not conducted. In both casessettings, social media tools are useful as platforms for in engaging both students and lecturers in such academic endeavors activities (Bull, Quigley, & Mabbott, 2006; Saito & Miwa, 2007).
Conversely, Ubiquitous ubiquitous learning on the other hand is typically represented by involves the universal use of mobile technology by students to access learning materials anytime and anywhere. In such an environment, students independently typically display independence to access resources and are self-directed (Hsieh et al., 2011). As such, students with independent learning style possess attributes of reflective learning attributes that may be an advantage beneficial in a ubiquitous learning environment. Such students need opportunities for require independent study, self-paced work, or special projects based on their interests (Umran-i-Khan & Iyer, 2009). Accordingly, such students may be adept with at using mobile technologies and social media for planning their learning and face no problems using social media for learning and planning their learning schedules.

Independent learners are often seen as considered introverts, and they best reflect representing the paradigm of constructivism, which learning paradigm that advocates self-directed, reflexive, and experiential learning, and learn through experiences and reflecting on those experiences (Montgomery & Groat, 1998; Felder & Silverman, 1988). Introverted independent learners can use various forms of social media to this end for learning purposes, especially those that support protect their anonymity. For instance, Yammer is a private enterprise social media site that allows lecturers and students to interact, collaborate, and organize projects in a similar manner with similarly to Facebook, but making do with the configuration of privacy settings but without the hassle and the need to configure the privacy settings. In addition, compared with extroverts, introverts have been shown to be more prefer attracted to online communication than extroverts as to face-to-face communication with new acquaintances, which can be intimidating and uncomfortable for introverts (Orchard & Fullwood, 2010). As a matter of fact, introverts they were have been found to prefer asynchronous form of communications, such as blogs and posts, as opposed to the synchronous forms communication, like such as chatting (Ryan & Xenos,
2011). In such cases, introverted students would prefer social media tools such as WordPress and Blogger can be more attractive to introverted students.

2.2.3 Collaborative

Panitz (1996) defined collaboration as cooperation and interaction among individuals in a group by people who formed themselves into groups and work together to achieve a common set of goals. Collaboration among students was deemed effective when handling in the case of complex and complicated assignments (Jonassen, 1994). Numerous studies have proven that the pivotal role of collaborative learning plays a pivotal role for in higher education students in terms of for improving critical thinking skills, developing social skills, fostering competitiveness, and retaining knowledge (Miyazoe & Anderson, 2010; Yang & Chang, 2011; Minocha, 2009). As such, students who prefer collaborative activities and challenging tasks can be categorized reflect the as divergers and accommodators’ learning traits, respectively (Kolb & Kolb, 2005). Thus, such students are stimulated and encouraged by in designing the instructional pedagogies, group discussions and projects, field trips, and open-ended problems or group presentations can stimulate and encourage students with collaborative style.

Students of generations Y and Z typically are usually adept at using well acquainted with various social media sites or current web technologies and are adept at as well as multitasking (Dede, 2005). Using With such tools, they are able to can share ideas and receive instantaneous feedback from peers and lecturers in online groups’ settings. Sites such as Google Drive provide ample Collaborative opportunities for collaboration, are abundant at sites such as Google Drive whereas and social media sites, namely Facebook, Google+, or Yammer, have the added benefit of hosting multimedia content such as video
blogs can foster robust collaborative efforts amongst students with the convenience of access to richer medias such as video blogs (Wankel, 2009). In such collaborative working spaces, students can learn by looking at from the contributions of other students in the collaborative working space and by reflecting on their own contributions as well (Minocha, 2009; Miyazoe & Anderson, 2010). Top (2012) revealed that teachers were moderately in favor of using blogs for learning exhibited positive moderate perceptions on the implementation of blogs in classes as they foster a sense of community in the classrooms and promote collaborative work for their among students. Social media were also found to be essential for encouraging creativity among the students, whether it is face-to-face collaboration endeavors or online collaborations (Gaggioli, Mazzoni, Milani, & Riva, 2013).

Therefore, students who prefer collaborative undertakings work can be considered as extroverts. Popular social media sites such as Facebook, Twitter, and YouTube facilitate such collaborations, allowing students to discuss and exchange ideas and opinions. Connecting with their fellow peers, coupled with the ability to engage in active discussions and exchange ideas and opinions can be facilitated at popular social media sites such as Facebook, Twitter, and YouTube. Such tools require the students to not only login, but also identify the students those who posted the messages or comments, or uploaded the videos. Presumably, it is presumed that anonymity is not an issue a concern for extroverts who thrive in active social environments. As such, popular social media sites can be utilized effectively to foster collaborative learning.

Table 1 below presents a summary of the key differences and similarities of the learning styles.
3. Research Methodology

3.1 Social Media Acceptance Model (SMAM)

The Social Media Acceptance Model (SMAM) proposed in the current study was developed using based on the E-learning Acceptance Model (ELAM) as a benchmark. ELAM is an extension of the popular Unified Theory of Acceptance and Use of Technology (UTAUT) model, and it was used to investigate e-learning acceptance among students and also as well as lecturers (Umrao-Khan & Iyer, 2009). To be precise, ELAM focused on the following predictors:

i. performance expectancy (i.e., perceived usefulness, interactivity, and flexibility),
ii. effort expectancy (i.e., ease of learning, perceived ease of use, and self-efficacy),
iii. social influence (subjective norm and image), and
iv. facilitating conditions (institutional support).

In particular, the authors have introduced flexibility, interactivity, and self-efficacy, three sub-constructs not present in UTAUT, were introduced in their model, three sub-constructs that did not exist in UTAUT. In ELAM, interactivity refers to the extent to which e-learning facilitates interaction between students and teachers and amongst the students. However, the literature also revealed that social media tools are actively used for to collaborate and share ideas, collaborations and sharing of ideas and learning resources (Franz, 2011; Roblyer et al., 2010). For instance, YouTube has been shown to be proven effective in developing students’ higher higher-order thinking skills such as decision making and problem solving, as well as their communication and collaborative capabilities skills (Bunus, 2010; Greenhow & Robelia, 2009). Teachers can share videos they think that
will can positively encourage students to present concepts or ideas. Moreover, students can be asked to find and share videos, interpret discuss the videos them with for their classmates and write reports, or even create their own playlist of relevant interesting YouTube videos for more efficient browsing in the future reference. Hence, we introduced Communication Functionality in SMAM to encompass cover the use of social media for interaction, collaboration, and sharing.

Self-efficacy refers to users’ confidence in their skills to use using computing technology, and The current study redefines it this concept to as social media efficacy to indicate the degree of confidence that to which students are confident about have in their ability to use social media for learning. It is believed that a student with higher self-efficacy is generally considered to be would be more confident in using social media for learning. Studies have also reported shown that users’ positive attitudes in using towards social media and enjoyment (Roblyer et al., 2010; Veletsianos & Navarrete, 2012) to be are significant in determining important determinants of their behavioural intentions, therefore Therefore, these sub-constructs were also included in SMAM. To be specific In particular, social media efficacy, attitude, and enjoyment were grouped into under one main construct, named termed Self. Figure 1 shows the SMAM, which contains four main constructs along with their respective sub-constructs and the dependent variable, which is Intention to Uuse Ssocial mMedia for Llearning. The study defines Intention to Uuse Ssocial Mmedia for Llearning as students’ future use of social media for the purpose of learning purposes. The moderating variables in SMAM are students’ learning styles, i.e. participatory, collaborative, and independent styles.

3.2 Instrument
A questionnaire containing 42 items assessing demographic details such as social media used, and learning styles, etc. was used for data collection. It was piloted among 30 university students to gauge their level of understanding, who reported that overall comments indicated the questionnaire to be simple and easy to understand. The questionnaire had three sections:

Section A – In this section, the respondents were asked to state their age (i.e., continuous), gender (i.e., dichotomous), years of using social media (i.e., continuous), types of social media used (i.e., Facebook, Twitter, YouTube, MySpace, Instagram, and others), and learning styles (i.e., nominal), among other items. The definitions for the three varying different learning styles were provided in the questionnaire, and the respondents were asked to select the closest definition one that best fits their style of learning.

Sections B and C measured respondents' agreement/disagreement levels of the respondents based on a 5-point Likert scale (1 indicating strong disagreement and 5 indicating strong agreement). As the study focused on investigating students' general intentions to use social media for learning, therefore all the statements in Sections B and C do not specifically refer to a single social media tool or a specific social media such as Facebook or Twitter. Instead, the respondents were asked to provide their feedback based on their personal experiences in using any form(s) of social media.

Section B – The items in this section relate to the respondents’ intentions to use social media for learning based on the four main key constructs in SMAM. This section contains 31 items (Self, 7 items; Performance, 9; Communication Functionality, 10; and Effort, 5) and with such examples include as “I have the confidence in using social media for learning purposes,” “I have knowledge to use...”
social media in learning” (Self), “Using social media can enable me to accomplish tasks related to my studies more quickly” (Performance), “Using social media enables one to communicate with lecturers more conveniently” (Communication Functionality), and “I use social media because learning how to use social media is easy” (Effort), just to name a few among others.

Section C – In this section, three items assessed the respondents’ intentions to use social media for learning. They were “I think it would be interesting to use social media for learning,” “I do not mind using social media for learning,” and “I think more students should use social media for learning.”

3.3 Respondents

The self-administered questionnaires were distributed to approximately 450 students from the tertiary institutions via e-mails, Facebook links, and word of mouth. A total of 324 sets of responses were received. However, 24 of them these responses were excluded had to be removed as >15% or a high proportion of data were the amount of missing data exceeded 15%, or a high proportion of data were missing for one or more constructs. Thus, the remaining 300 valid responses were used for subsequent statistical analysis (Hair, Hult, Ringle, & Sarstedt, 2014).

Gender analysis revealed a fair distribution between both males and females to be fairly distributed, with 52.7% of them being females women and the remaining 47.3% malesmen. A vast great majority of the respondents were aged between the ages of 21 and 29 years old (74.3%), followed by those beyond who were more than 30 years old of age (17.3%), and less than below 20 years old (8.3%).
Slightly more than 50% of the respondents had more than 5 years of experience in using social media. The sample in this study also consisted of active users of social media users with most of them (76.3%), who reported using it for more than an hour daily. Of the 300 respondents, 276 and 278 students claimed to be familiar with Facebook and YouTube respectively, indicating the popularity of these sites among the student populations suggesting these two social media to be very popular among them. The three top most common reasons for using social media were for social networking (75.3%), entertainment (70.6%), and just to spend time leisure (70.6%). Only one third of the sample reported to use social media for academic purposes. This indicating suggested that, despite the popularity of social media sites such as Facebook and YouTube among the respondents this population, very few actually use them for the purpose of learning, in line with Roblyer et al. (2010).

Finally, for learning styles, most of the respondents selected reported the participatory learning style (38.7%), followed closely by the independent (32.3%) and collaborative (29%) styles.

3.4 Data analysis

A multivariate analysis was conducted using SmartPLS 2.0As the study involves involved various learning styles, a multivariate analysis was deemed to be appropriate. This was accomplished via the use of SmartPLS 2.0. The data were segregated into three groups (i.e., participatory, independent, and collaborative) before carrying out the analysis separately. Bootstrapping (500 resamples) was performed to obtain the statistical significance of path coefficients using a $t$-test (Hair et al., 2014). Pair-wise comparisons were administered conducted to determine if there are any significant differences between the
students’ learning styles’ and students’ their intentions to use social media for learning. All the results were considered significant at a $p$-value of $< 0.05$.

In path modelling, indicators with loadings more greater than 0.7 are usually generally retained, and those between ranging from 0.40 and to 0.70 should are excluded only only be considered for removal if deleting them leads to if their exclusion an increases in the composite reliability (CR) (Hair et al., 2014). As the results will indicate latersubsequently, the majority of the indicator loadings were more greater than 0.7, and only a few were in the range of ranged from 0.65 –to 0.69. These items were retained as their removals exclusion had no effect on the overall CR.

As All all of the constructs in SMAM were based on reflective multi-item scales, therefore they were also assessed with regard to in terms of their reliability and validity. This was ensured by adhering to with the following criteria: (i) CR to be above greater than 0.7, (ii) average variance extracted (AVE) values to be more greater than 0.5, (iii) Cronbach’s alpha (CA) values to be above 0.7, and (iv) the Fornell—Larcker criterion (in which each construct should be higher than the construct’s highest squared correlation with any other latent construct) (Fornell & Larcker, 1981).

The demographic details on the other hand, were analyzed using Statistical Program for Social Sciences (version 21). This was accomplished using descriptive statistics such as frequency and percentages.

4. Results

The effects of Self, Performance, Effort, and Communication Functionality on students’ Intention to Use Social Media for Learning for the of various groups of users were investigated using path modeling analysis. The results are
presented according to the learning styles, and the results are comparison results are provided compared at the end of this section.

4.1 Participatory

Table 2 shows presents the validity and reliability results for the participatory learning style. The Overall overall values for of AVE (more than 0.5), CR (more than 0.7), and CA (more than 0.7) indicate that the scales used have the high levels of convergent validity and reliability of the scales used. Additionally, the square roots of AVE are higher greater than the absolute correlations between the constructs (shown in boldface in Table 2), hence thus, discriminant validity is was also established as well.

Figure 2 shows the overall path modelling for the participatory student group of students, with an $R^2$ value of 0.66. The path coefficients between the four key constructs in the current sample indicate show that Self (0.856) and Performance (0.317) to have the strongest greatest direct effects influence on students’ intention to use social media for learning among the current sample. Bootstrapping also revealed these paths to be significant. Both Effort and Communication Functionality were found to be insignificant. The respective indicators for each of the constructs are attached presented in Appendix A.

4.2 Collaborative

The results of the discriminant validity and reliability for the collaborative group are depicted presented in Table 3 below. All of the values for AVE, CR, and CA clearly indicate the scales to have the high levels of convergent validity and reliability of the scales.
Figure 3 illustrates the path modelling modeling for the collaborative group. The R² value for this particular model is 0.704, higher greater than the one that reported for the participatory group.

Three main constructs, namely Self (0.386), Communication Functionality (0.292), and Performance (0.270), had a significant direct effects influence on the students’ intentions to use social media for learning, namely Self (0.386), Communication Functionality (0.292) and Performance (0.270). No significant effect was noted for in the case of Effort.

4.3 Independent

From Table 4 below, it can be observed noted that all of the values for AVE, CR, and CA are all well above the respective minimum threshold values, respectively. This shows reflects that the high consistency and reliability of the scales for in the independent group are highly consistent and reliable. The discriminant validity is also achieved as indicated by the bolded values (i.e., the Fornell—Larcker criterion).

Finally, the overall path modelling modeling for the independent learning style shows a high predictive power of 0.789 (Figure 4). The path coefficients show that the direct effect for Self has the greatest direct influence to be the strongest (0.561), followed by Communication Functionality (0.224) and Performance (0.155). These effects were also found to be significant, similar with to the effects for those in the collaboration collaborative group of students. In this case as well, Effort once again, was found to be insignificant.

4.4 Pair-wise comparisons
The significant factors, (i.e. namely Self, Communication Functionality, and Performance,) for the various student groups were then compared against the varying groups of students to determine if there is any the difference(s) between them (Table 5). Looking at Based on the p-values, the effect of Self on students’ Intention intention to Use use Social social Media media for learning was found to differ be significantly different between the participatory and collaborative groups. The higher mean value for of the participatory group (0.857) was higher than that of the collaborative group (0.394), shows which shows the significance of that Self is more important to in the former student group of students. The rest of the comparisons produced insignificant differences.

5. Discussion and Conclusion

A comparison across of all three learning styles shows the significant effects of Self and Performance to have significant effects on students’ intentions to use social media for learning, regardless of their learning styles. As mentioned previously, Self also includes the use of encompasses using social media for entertainmentbecause it is fun and joyful. It also indicates reflects that on students’ are in favor of using positive attitudes in using the social media for learning. As a matter of In fact, among the students sample in this study, entertainment emerged was as the second most common top reason for using social media among the sample in this study. This is in- line with the study by Roblyer et al., (2010), who found that students to use social media sites such as Facebook simply as it is fun and engagingbecause it is fun to do so.

Although our literature review findings (see Table 1) indicated that generally students with participatory and collaborative styles generally tend to be extroverts, our results show we also found that students with the participatory style to emphasize focus more on Self than
do compared to those with the collaborative style do. This clearly shows that, although both student groups of students may share similar personalities personality traits (i.e., extroverts), their learning styles have a greater influence stronger impacts in on their intentions to use social media for learning purposes. One of the main major traits of the participatory learning style is the an eagerness in to learn learning and taking take responsibility for one’s own learning (Umrani-Khan & Iyer, 2009). Therefore, with the availability of a vast number of several social media sites such as Facebook, Twitter, YouTube, and Blogsblogging platforms, offer students are presented with diverse alternatives the opportunity to seek information, share, discuss, socialize, and interestingly, to have fun while enjoy the learning process. Perhaps, This this probably explains why the importance of Self is deemed to be more important for students with the participatory style.

Social media efficacy is also one of the sub-constructs measured in Self, which suggests suggesting that students with higher efficacy intend tend to use social media for learning. , as they are confident of their skills in using technology, as is expectedThis is not surprising as users who are confident and skilful in using a technology would be more comfortable using it. Therefore, students with participation participatory learning style would probably have more experience in using social media as they use the media these tools during their learning activities, as opposed compared with the to the collaboration collaborative groups, who would prefer working with their team-mates. Thus, This this may probably explains explain as to why the focus of participation participatory groups emphasized more on Self than compared with the collaboration collaborative group.

Although no significant differences were noted between the groups, but Performance was found to have a significant effect on students’ intentions to use social media for learning, in all three groups. Many studies have reported the benefits of Literature suggesting the usefulness social media in education. provide is many, fFor example, Junco et al. (2011)
found that undergraduate students who used the use of Twitter showed significantly improved improvements in undergraduate students’ their engagement and semester grade point averages (GPA). In addition, each social media site seems to caters to unique needs such as social networking (Facebook), sharing videos (YouTube), and sharing photos (Instagram). Furthermore, social media also allows students to one to communicate with one another each other in various ways. For instance, a Facebook user can broadcast send a message to everyone on his/her friend’s list or to a selected group of friends, send a private message to a particular person or a group, and also chat in real time with one another. The availability of These various diverse social media sites with diverse functions clearly show the offer flexibility flexible options provided to the users by these media. The many usefulness benefits and the flexibility of social media provide probably may explain why the significant impact of Performance had significant impacts on the students’ intentions to use social media for learning, regardless of their learning styles. On another note, this may also indicates suggest that their main personalities (i.e., extroverts versus introverts) have no influence on the Performance factor.

Finally, Communication Functionality was found to significantly affect independent and collaborative students’ have significant effects on intention to use social media for learning for the independent and collaboration groups of students, however although no significant differences were observed. The Communication Functionality particularly focuses on three sub-constructs: – sharing, interaction, and collaboration. Studies have reported the ability of social media to promote in enhancing communication and collaboration, for instance, Wikis wikis (i.e., collections of mutually authored web pages) were found to be influential in benefit group and collaborative works projects as they permit provide a mutual learning environment for students and teachers alike learners to collaborate in a mutual environment with the improvement of the work observable to all learners, and to
the lecturers, at any time across the world (Miyazo & Anderson, 2010). The independent group of students, who can work and learn with minimal guidance from their lecturers, may find communicating with their peers via social media it easier and also more comfortable in communicating with one another on social media. Students in As for the collaboration collaborative group, they can use social media tools such as Wikis as an a platform avenue to for learning how to work as a team and generate information through group effort as the media can offer the contributing learners with chances to learn how to work mutually, generate information and manage in a world that values group endeavour (Lundin, 2008). Therefore, the Communication Functionality supported or provided offered by the social media is deemed to be considered important for the independent and the collaboration collaborative groups of students. Again, students’ the extroversion or introversion tendencies traits of students were not found to have any effect on influence Communication Functionality, even although both the groups tend to exhibit different personalities (i.e., collaborative, – extrovert; independent, – introvert). Similarly, Communication Functionality was found to have no effect to influence on students with the participatory style (i.e., extroverts) style students, in contrast to the collaborative (i.e., extrovert) students.

Interestingly, Effort was found to be insignificant in any of these all groups, suggesting indicating that the students in this sample were are probably very familiar with social media, and thus used these sites with ease find it easy to use social media. As mentioned in Section 3.3, the majority of the respondents used social media for more than an hour daily, and most claimed to be very familiar with Facebook and YouTube., hence Thus, they may not think Effort was not considered a factor influencing to be of great importance in affecting their students’ intention to use social media for learning.

Overall, the study found revealed that Self, Performance, and Communication Functionality to be as important determinants of students’ intention to use social media for
learning, regardless of their learning styles. Self and Performance seemed were found to have significantly effects on affect the intention to use social media for learning for in all the three student groups. However, Communication Functionality was found to be significant only for the independent and collaborative group. Effort was insignificant in any all of the groups. Finally, students in the participative group were found to focus significantly emphasize more on Self compared to than those in the collaborative group did.

The findings also revealed that stronger influence of the learning styles had a stronger influence on students’ intention to use social media as opposed to students’ than their personalities, (that is, either extrovert extroversion or introvertintroversion). In other words, even although students may share the same personality, say extrovertextroversion, but their different learning styles eventually influence their intentions to use social media. However, it must be noted that the current study did not particularly measure evaluate the students’ personalities in particular. Instead, we classified learning styles and personalities were classified based on the available literatures literature (see Table 1). Therefore, findings pertaining to with respect to students’ personalities must be reviewed in depth warrant further thorough investigation.

Furthermore, it is must also to be noted that the study did not focus specifically on a specific social media site. There are various tools sites are available, ranging from the well-known Facebook to the lesser-known Yammer. As each each of these tools have specific unique features, which distinguishes them from one another, therefore it would be interesting to it may be worth investigate investigating which learning styles suit which media better. Future Studies in the future can focus could look into this by specifically focusing on a specific social media site.

The findings of the current study provide useful insight into can be useful to fellow researchers who are interested in examining the factors that might affect influencing the use
of social media for learning, particularly based on the various different learning styles. Additionally, academics and educational institutions can also create specific tools, emphasising on key factors that promote effective learning to make learning more interesting and successful for among students with different learning styles.

Lastly, in relation to the learning domains of higher education, educators and researchers alike frequently cite the Bloom’s Taxonomy is widely referenced and cited by educators and researchers alike in efforts to promote students’ higher order thinking skills (Anderson et al., 2001). It is widely used by educators to derive courses’ learning outcomes. The fundamental purpose of the taxonomy is to reduce rote learning, that is, i.e. requiring students to memorize and regurgitate facts during assessments. Rather, the aim is to It also helps devise measurable learning outcomes so that students can not only comprehend the subject matter, but also apply the knowledge gained with the ability to analyse, evaluate, and ultimately create or derive new understanding and knowledge. Therefore, the overall, the purpose goal of higher education is to stimulate higher order thinking skills among the students. Stimulating critical thinking skills are stimulated through requires students to participate in collaborative activities and confident interactions with their peers and instructors without feeling shy, and which may prove difficult for introverted students may face difficulties in these areas compared to their extroverted peers. As such, introverted students can be encouraged to participate and collaborate with their fellow friends using on Facebook or Twitter, or actively engage in discussions and gather feedback from their peers through blogs. Hence, if used effectively by educators and students, social media tools can not only supplement the learning efforts of students with different learning
styles, but also engage and encourage collaborations and the sharing of ideas among students with diverse backgrounds, learning styles, and personalities.

It is interesting to note that On another interesting note, although the Malaysian government regulates the use of social media, particularly Facebook, this is although mostly for political reasons. For instance, in Malaysia, there have been a few incidences where Malaysians were found to “misuse” the social media has been reported, to such as seditious statements targeting the government, or and specific key individuals, as well as racist comments etc. However, the government fully supports the use of social media for educational purposes. This is reflected in its recent emphasis towards online learning for higher education, as detailed in the Malaysia Education Blueprint 2015–2025 (Higher Education). In fact, the blended learning pedagogical approach that combines both online learning and traditional conventional face-to-face instructions are set to be implemented in all higher education institutions in the country (Ministry of Education Malaysia, 2015). With an Internet penetration of approximately 67% of the Malaysian population comprising Internet users (Internet World Stats, 2014), and social media penetration of over which more than 50% of all Internet are users of social media in Malaysia (The Statistics Portal, 2015), social media technologies are expected to play a key pivotal role in supporting the government’s goals for higher education aspirations.

To conclude, the popularity of social media can encourage learning due to and its widespread popularity and options capabilities for enabling creating virtual online study groups, supporting sharing ideas, sharing and promoting active interactions among students and lecturers can ease and encourage learning. However, the adoption of social media should be integrated into as part of the teaching and learning curriculum of higher education must be done only after thorough in-depth analysis where with clear guidelines
pertaining to for their the use of such tools must be provided for both lecturers and students. Learning activities utilising using various the multitude of social media tools should also be all-encompassing in order to support inclusive students’ of various diverse learning styles. Most importantly, the learning activities designed by educators and facilitated via by social media must be based on sound pedagogy pedagogical learning theories in order to stimulate generate interests and improving the learning experience of tertiary students.

References


### Appendix A

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Fig. 1
Fig. 2
Fig. 3
Fig. 4
Table 1: Participatory, Independent, and Collaborative learning styles

<table>
<thead>
<tr>
<th></th>
<th>Participatory</th>
<th>Independent</th>
<th>Collaborative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personality</strong></td>
<td>Generally are extroverts.</td>
<td>Generally are introverts.</td>
<td>Generally are extroverts.</td>
</tr>
<tr>
<td><strong>Learning attributes</strong></td>
<td>Prefer any learning task that requires active participation during classes or outside or of the classroom.</td>
<td>Prefer individual learning task.</td>
<td>Prefer group work and to conduct group discussion amongst team members.</td>
</tr>
<tr>
<td></td>
<td>The learning activities may be individual or group centric as long as they are provided opportunities are there for them to contribute contributing ideas.</td>
<td>Are self-directed and possess high level of discipline.</td>
<td>Is usually a good team player.</td>
</tr>
<tr>
<td></td>
<td>Are usually active during classes, and do not hesitate to voice opinions.</td>
<td></td>
<td>Opportunities to exhibit leadership skills.</td>
</tr>
<tr>
<td><strong>Suitability for e-learning or mobile learning.</strong></td>
<td>Both students with participatory and independent learning styles are suitable for e-learning courses, as learning activities requires students to be initiative, self-directed, and participative.</td>
<td></td>
<td>Students with collaborative learning style thrive in face-to-face brainstorming sessions. Therefore, there is a need to harness the right web tools in order to provide a platform for collaborative opportunities.</td>
</tr>
<tr>
<td></td>
<td>Adeptness in computing technology is required.</td>
<td></td>
<td>Making use of social media tools incorporated into the e-learning sites is vital to for supporting collaborative work amongst students in such courses.</td>
</tr>
</tbody>
</table>
Table 2: Validity and reliability for participatory learning style

<table>
<thead>
<tr>
<th></th>
<th>CF</th>
<th>Effort</th>
<th>IU</th>
<th>Self</th>
<th>P</th>
<th>AVE</th>
<th>CR</th>
<th>CA</th>
</tr>
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<tbody>
<tr>
<td>CF</td>
<td>0.818</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effort</td>
<td>0.761</td>
<td>0.888</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IU</td>
<td>0.662</td>
<td>0.560</td>
<td>0.812</td>
<td></td>
<td></td>
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<tr>
<td>Self</td>
<td>0.801</td>
<td>0.738</td>
<td>0.786</td>
<td>0.818</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>P</td>
<td>0.736</td>
<td>0.756</td>
<td>0.581</td>
<td>0.681</td>
<td>0.806</td>
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</table>

CF, - Communication Functionality; IU, – Intention to Use; P, - Performance
Table 3: Validity and reliability for collaborative learning style

<table>
<thead>
<tr>
<th></th>
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<th>Effort</th>
<th>IU</th>
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<th>AVE</th>
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<td></td>
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<tr>
<td>Effort</td>
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<td>0.877</td>
<td></td>
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<tr>
<td>Self</td>
<td>0.796</td>
<td>0.719</td>
<td>0.776</td>
<td>0.801</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>0.743</td>
<td>0.726</td>
<td>0.757</td>
<td>0.765</td>
<td>0.778</td>
<td>0.59</td>
<td>0.93</td>
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CF, - Communication Functionality; IU, – Intention to Use; P, - Performance
Table 4: Validity and reliability for independent learning style

<table>
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<tr>
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<th>Self</th>
<th>P</th>
<th>AVE</th>
<th>CR</th>
<th>CA</th>
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</thead>
<tbody>
<tr>
<td>CF</td>
<td>0.800</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.64</td>
<td>0.95</td>
<td>0.94</td>
</tr>
<tr>
<td>Effort</td>
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<td>0.866</td>
<td></td>
<td></td>
<td></td>
<td>0.75</td>
<td>0.94</td>
<td>0.92</td>
</tr>
<tr>
<td>IU</td>
<td>0.777</td>
<td>0.656</td>
<td>0.860</td>
<td></td>
<td></td>
<td>0.74</td>
<td>0.90</td>
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<td>Self</td>
<td>0.779</td>
<td>0.635</td>
<td>0.798</td>
<td>0.816</td>
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<td>0.91</td>
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<td>P</td>
<td>0.533</td>
<td>0.679</td>
<td>0.635</td>
<td>0.579</td>
<td>0.824</td>
<td>0.68</td>
<td>0.95</td>
<td>0.94</td>
</tr>
</tbody>
</table>

CF, Communication Functionality; IU, Intention to Use; P, Performance
Table 5: Pair-wise comparisons between among the various learning styles

<table>
<thead>
<tr>
<th></th>
<th>Participatory--</th>
<th>Participatory--</th>
<th>Independent--</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Collaborative</td>
<td>Independent</td>
<td>Collaborative</td>
</tr>
<tr>
<td>Self</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t-value</td>
<td>3.092</td>
<td>2.011</td>
<td>1.221</td>
</tr>
<tr>
<td>p-value</td>
<td>0.002*</td>
<td>0.57</td>
<td>0.224</td>
</tr>
<tr>
<td>Performance</td>
<td></td>
<td></td>
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<tr>
<td>t-value</td>
<td>0.326</td>
<td>1.146</td>
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<td>p-value</td>
<td>0.747</td>
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<td>0.265</td>
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<tr>
<td>t-value</td>
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<td>-</td>
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<td>p-value</td>
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<td>0.634</td>
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N_c = 87; N_p = 97; N_l = 116
Highlights

- The Participatory, collaborative, and independent learning styles were investigated.
- The Social Media Acceptance Model was proposed.
- The factors Self & Performance were found to influence students’ intention to use social media.
- The factor Self had the strongest influence on all the learning styles.
- Students with Participatory style emphasized more on Self than those of the collaborative style did.
# Appendix A

<table>
<thead>
<tr>
<th>Items</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intention to Use</strong></td>
<td></td>
</tr>
<tr>
<td>IU1</td>
<td>I think it would be interesting to use social media for learning</td>
</tr>
<tr>
<td>IU2</td>
<td>I think more students should use social media for learning</td>
</tr>
<tr>
<td>IU3</td>
<td>I do not mind using social media for learning</td>
</tr>
<tr>
<td><strong>Self</strong></td>
<td></td>
</tr>
<tr>
<td>S1</td>
<td>I have knowledge to use social media for learning</td>
</tr>
<tr>
<td>S2</td>
<td>I have skills to use social media for learning</td>
</tr>
<tr>
<td>S3</td>
<td>I have confidence to use social media for learning</td>
</tr>
<tr>
<td>S4</td>
<td>I take a positive attitude toward myself when I use social media for learning</td>
</tr>
<tr>
<td>S5</td>
<td>I can find information that are not out of date</td>
</tr>
<tr>
<td>S6</td>
<td>I feel capable conducting my course assignments via social media</td>
</tr>
<tr>
<td>S7</td>
<td>I can learn easily to use social media for learning</td>
</tr>
<tr>
<td><strong>Effort</strong></td>
<td></td>
</tr>
<tr>
<td>E1</td>
<td>Interacting with social media is clear</td>
</tr>
<tr>
<td>E2</td>
<td>Learning how to use social media is easy</td>
</tr>
<tr>
<td>E3</td>
<td>It is easy to use</td>
</tr>
<tr>
<td>E4</td>
<td>Interacting with social media is understandable</td>
</tr>
<tr>
<td>E5</td>
<td>It is easily available</td>
</tr>
<tr>
<td><strong>Performance</strong></td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>Enable me to accomplish tasks related to my studies more quickly</td>
</tr>
<tr>
<td>P2</td>
<td>Help me to improve my grades</td>
</tr>
<tr>
<td>P3</td>
<td>Enable me to learn on my pace (speed)</td>
</tr>
<tr>
<td>P4</td>
<td>Enable me to find related links to academic matters easily</td>
</tr>
<tr>
<td>P5</td>
<td>Enable me to learn at any time and any place</td>
</tr>
<tr>
<td>P6</td>
<td>Enable me to access more academic resources conveniently</td>
</tr>
<tr>
<td>P7</td>
<td>Improve my understanding of topics</td>
</tr>
<tr>
<td>P8</td>
<td>Enhance my writing skill</td>
</tr>
<tr>
<td>P9</td>
<td>Enhance my reading skill</td>
</tr>
<tr>
<td><strong>Communication Functionality</strong></td>
<td></td>
</tr>
<tr>
<td>CF1</td>
<td>Communicate comfortably with lecturers</td>
</tr>
<tr>
<td>CF2</td>
<td>Communicate with lecturers more conveniently</td>
</tr>
<tr>
<td>CF3</td>
<td>Collaborate with lecturers easily</td>
</tr>
<tr>
<td>CF4</td>
<td>Discuss academic matters with lecturers and classmates easily</td>
</tr>
<tr>
<td>CF5</td>
<td>Collaborate with domain experts easily</td>
</tr>
<tr>
<td>CF6</td>
<td>Communicate comfortably with classmates</td>
</tr>
<tr>
<td>CF7</td>
<td>Communicate with classmates more conveniently</td>
</tr>
<tr>
<td>CF8</td>
<td>Share announcements/news related to academic matters easily</td>
</tr>
<tr>
<td>CF9</td>
<td>Collaborate with the other students easily</td>
</tr>
<tr>
<td>CF10</td>
<td>Share academic materials with others (uploading, downloading, etc.)</td>
</tr>
</tbody>
</table>