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BUILDING A FACEBOOK EMBEDDED PICTURE BOOK DESIGN LEARNING PLATFORM AND UNDERSTANDING ITS USE INTENTIONS

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Abstract

Electronic reading is a process of digitalizing not only the content and reading devices but also the publication and distribution of books. With the development of e-books, more attention has been paid to use of e-books in education. Through online communities and innovative learning models, digital content providers can offer plenty of resources to help learners at all levels and promote the effectiveness of their self-regulated learning. The objective of this study is to build a cloud-based learning platform that integrates designs of electronic picture books and the social functions of Facebook. Students of multimedia design can upload their works to this platform and learn from each other through idea sharing and discussion. This platform is expected to help students create works with better quality and more creativity. Besides, this study also investigates the learning behavior and use intentions of students on this platform based on “Social Interaction Theory” and “Uses and Gratifications Theory”. This study attempts to capture students’ needs and how they are related to their learning outcomes. Results of this study contribute to the development of cloud-based learning and can be a reference for design of learning materials and improvement of teaching models.

Keywords: Reading community, Facebook, Social interaction theory, Uses and gratifications theory.

1 INTRODUCTION

The recent introduction of e-book devices has drastically changed the way people access and use reading content (Park et al., 2015). While many studies have examined the capabilities of e-books to promote children's reading abilities, more extensive investigations of the related reading patterns and outcomes seem necessary before this technology is widely adopted (Liang & Huang, 2014). It is thus necessary to conduct more intensive studies with regard to the use of e-books with learners in educational contexts (Liang & Huang, 2014). However, few studies have explored the impact of reading experience combined with SNS on acceptance of e-book devices.

Some researchers (eg, Liang & Huang, 2014; Huang & Liang, 2014) have examined how the students use e-books in academic contexts. In nowadays, many educational institutions and digital content providers have made use of online communities and innovative learning models to offer plenty of learning resources that learners from all levels can access to support self-regulated learning. For instance, Khan Academy, a US-based electronic learning website, provides a wide diversity of online instructional videos and tests for free. So far, tens of millions of people worldwide have benefited from using this website. This academy manages to link this learning system to the domestic junior high and elementary education, hoping that its learning resources can be more effectively used by local teachers and students. The discontinuation of Google Reader in July 2013 does not mark an end to the age of subscribed reading but a turning point for advancing into "social reading". Due to the prevalence of mobile devices, reading is no longer confined to a specific time or place, nor is it merely an individual pastime. Readers may even gather to form a community and seek more fun of reading simply because of a book. Nate, the founder of the popular reading app, Pocket, mentioned that the initial goal of this platform was to allow users to browse online content at any time and place. The social elements, which were added to this reading application later, enabled users to have a personal page by which they can have more interactions with one another.

The importance of information education has increased with the rapid development of information technology. One of the goals of information education is to produce professional software developers. In Taiwan's education, multimedia design is listed as one of the primary courses for studying software development. It is imperative for students of multimedia design to acquire lessons that are aligned to industry practices. In this study, a cloud-based learning platform that integrates designs of electronic picture books and social functions of Facebook will be established. This platform is intended to allow students of multimedia design to upload their electronic picture books and interact with one another. Through sharing of ideas and learning by imitating others' works, they can ultimately produce works with better quality and higher creativity. Their works can also be directly used in class for educational purposes. After this platform is built and implemented, this study will further explore the learning behavior and usage intentions of college students based on Social Interaction Theory, Uses and Gratifications Theory (UGT), and Commitment-Trust Theory. By investigating users' needs, gratifications, and behavioral intentions regarding to use of this platform, this study attempts to explore how users' needs are related to their learning outcomes. Results of this study can contribute to development of cloud-based learning and be a reference for designing supplementary teaching materials or improving teaching models. To sum up, the objectives of this study are to (1) build a Facebook embedded picture books design learning platform and implement this platform in instruction of multimedia design; (2) explore changes in learning behavior among users of this platform; (3) evaluate the relationship of social interaction, needs gratification, and social impact among users of this platform.

2 LITERATURE REVIEW

2.1 Reading Communities

As the sector adapts to social and technological changes in its own environment, at the same time the definition of what a learner is and what his or her needs are is changing (Doolan, 2013). Each of these studies shows the perceptions of learners are changing within their own social context, as they engage with technological innovation and discover new ways to incorporate these changes into their lives.

The concepts of online learning and collaborative technology including Web 2.0 are presented and drawn from learner-centric, constructivist and sociocultural perspectives in higher education (Doolan, 2013). Social constructivists (Vygotsky, 1978) argue that learners learn by constructing their own knowledge through active engagement and interactions with others. An online reading community is formed by a group of people with a shared interest in reading or a common need for reading. Due to the prevalence of mobile devices, users can gratify their need for reading at any place and even gather to seek more fun of reading.

2.2 Social Networking Site—Facebook

Social networking sites (SNSs) are an online platform enabling people to communicate with one another; they are a new medium of expression allowing users to engage and maintain real relationship (Chen et al., 2012; Ellison et al., 2007; Kwon & Wen, 2010; Shen, 2013). Thus, social networking sites are also called social media (Safko & Brake, 2009). The fast growth and high attractiveness of social media, as well as the enormous values of the knowledge generated by their users have attracted considerable attention in the areas of information management and knowledge communication.

From the media-dependent perspective, user behavior may be affected by how media are designed. The social construction perspective suggests that user behavior changes through social interactions (Yoo & Alavi, 2001). For instance, trust generated through social interactions mitigates perceptions of uncertainty and risk (Luhmann, 1979) and therefore can result in an increased intention toward knowledge exchange and knowledge sharing (Chiu et al., 2006; Hsu & Lu, 2007; McEvily et al., 2003). Besides, the interactions between media technology and the society also influence people's behavior. That is to say, human behavior is influenced not only by media technology but also by their social relations. Therefore, media functions and social processes are important factors that induce changes in human behavior.

2.3 Evaluation of Usage Intentions

This study argues that an individual's social behavior in a social environment is affected by the social processes of the environment. Therefore, based on the context of cloud-based reading of electronic picture books, this study proposes a conceptual model that integrates UGT and Social Interaction Theory. Drawing upon data collected from members of "an online picture book reading community", this study will explore how the factors included in the UGT affect participation behavior of members of this kind of virtual communities.

2.3.1 Uses and Gratifications Theory

Among the paradigms of mass communication research, UGT is one of the theories commonly applied to research of Internet use behavior, including media choice, motives, and behavior of the audience. Since the 80s, a variety of models have been developed based on this theory. The one introduced by Rosengren (1974) is most extensively used. UGT aims to explain why people choose specific media among multiple choices and identify their psychological needs, that is, their motives to use the media.

UGT suggests that individuals are active and purpose-minded. Individuals choose media according to their needs (Flanagin & Metzger, 2001). It is assumed that individual behavior is goal-oriented and everyone is aware of their needs (Cheung et al., 2010). The Internet is a combination of multiple technologies. Internet media and traditional media are used in similar but not completely the same ways (Flanagin & Metzger, 2001). Purposive values, self-discovery, entertainment value, social enhancement, and maintaining interpersonal relations are commonly recognized as factors affecting one's motives to use virtual communities (Cheung et al., 2010).

2.3.2 *Commitment-Trust Theory*

A number of theoretical frameworks and models about trust have been developed. The Key Mediating Variable Model (KMV) of the Commitment-Trust Theory proposed by Morgan and Hunt is probably the most classical. Among the various contextual factors, relationship commitment and trust are found to have a critical impact on partnerships (Morgan & Hunt, 1994). The collaborative learning model can be applied to cloud-based reading of electronic picture books. Therefore, we will employ the Commitment-Trust Theory to explain trust and relationship maintaining of users of this learning platform.

Relationship commitment is defined as “a belief that an ongoing relationship with a partner is so important as to warrant maximum efforts to maintain it” (Morgan & Hunt, 1994). Trust is “the degree of confidence that one has in the trustworthiness and integrity of a person or an organization”. Trust is a psychological state. It is present when one party of a relationship has confidence in the reliability and integrity of the other party. Trust can nurture development of a closer relationship. Therefore, Morgan and Hunt suggested that trust has an impact on relationship commitment.

2.3.3 *Social Interaction Theory*

Social Interaction Theory identifies three patterns of social interactions, including human-human interaction, human-message interaction, and human-environment interaction. Psychological well-being is a factor of human interaction with others; functional requirement (i.e. motives to use specific media) affects human interaction with message; social requirement (i.e. social capital) affects human interaction with the environment.

Social capital is the sum of resources that one has gained through interaction with others (Coleman, 1988). Generally, social capital is affected by one's activeness in having interactions with others in the social network (Helliwell & Putnam, 2004). Members build relationships as they have more interactions with others. How active they are in the social network will affect the level of their social capital. Social networking sites have features including message exchanging, friend-making, communication, and gathering. Supporting instant interaction and participation, they allow users to interact with a group of people at any time and across geographical barriers. For young people, building and maintaining relationships with others about their same age is important. The relationships they possess can be viewed as their social capital. Social capital is flexible. It is also defined as the advantage that one can gain from a relationship with others (Steinfeld et al., 2008). It is documented in many studies that social networking sites are essential for young adults, because many young adults rely on them to maintain friendships. It can be inferred that social networking sites like Facebook may play an important role in young adults' psychological development (Steinfeld et al., 2008). “Relationships” create social capital and are critical to psychological development in young adults. More and more evidence suggests that an individual's use of Internet and social networking sites, especially Facebook, is related to his/her self-consciousness and psychological development (Steinfeld et al., 2008). It can be inferred that one's use of a Facebook embedded learning platform will be affected by his/her social capital. This inference is also the focus of this research.

3 RESEARCH MODEL AND HYPOTHESES

E-books are now a real alternative in academia, and questions arise as to the usefulness of e-books in meeting the needs of academics (Shimizu Wilson et al., 2014). In this study, a learning platform was developed for a multimedia design course in college education. Considering the large demand for data storage of multimedia files, we introduced cloud storage technology into the proposed platform. Therefore, this learning platform was upgraded into a cloud-based learning platform. We intended to design a platform that not only allows students to upload their works but also supports collaborative learning. In other words, students should be enabled to view, appreciate, and discuss the works of others on this platform. We hoped that through sharing and discussion, students can gain some inspirations from others, learn by imitating, and avoid weaknesses in their future works. Ultimately, students can show improved design quality and more creativity in their works. Therefore, the goal of this study is to develop a cloud-based learning platform for a reading community and evaluate factors affecting students' use of this platform based on Social Interaction Theory, Commitment-Trust Theory, and UGT.

3.1 Integrating electronic picture books and Facebook functions into the learning platform

Among the social networking sites, Facebook is the most popular site in Taiwan. Due to the availability of open-source codes released by Facebook, many components of Facebook can be embedded into other platforms. In this study, we attempt to take advantage of the social functions of Facebook to allow members to get inspirations from discussion with others on the platform and increase the diversity of their learning materials and styles. Some screenshots of this proposed platform are as shown in Figure 1.



Figure 1. A cloud-based learning platform that integrates electronic picture books and Facebook

3.2 Integrating teaching designs and materials into the learning platform

The subjects of this research were undergraduate students of information management in Taiwan. A multimedia design course taken by these students was integrated into the platform. This course requires each student to hand in a multimedia work at the end of the semester. In this department, multimedia design is considered a core competency, and learning skills of designing electronic picture books is the focus of this course. In this study, we will evaluate the learning outcomes of students to understand the effectiveness of this platform in improving their design skills.

3.3 Design of the usage intention questionnaire

Based on UGT, the research framework was developed to consist of three parts, including environment, learning processes, and behavior, which are respectively represented by three dimensions, namely social interaction needs, needs gratification, and social influence. The framework for evaluating students' intentions to use the proposed learning platform is presented in Figure 2.

3.3.1 Social Interaction Needs

The main motives for people to join online communities are (1) functional requirement: seeking answers from experts (Hagel & Armstrong, 1997), accessing useful or new information (Chang et al., 1999; Jacobs, 2000; Bressler & Grantham, 2000), conducting transactions, and collecting consumer intelligence (Hagel & Armstrong, 1997; Zingale & Arndt, 2001; Huang et al., 2007). Some businesses consider virtual communities as a valuable knowledge management system (Gongla & Rizzuto, 2001; Hsu & Lu, 2007); (2) Social requirement: building relationships or friendships through group interactions (Robert, 1999; Lee et al., 2003; Li et al., 2006; Kozinets, 1999); (3) Psychological requirement: developing affections for the community (Chiu et al., 2006) seeking satisfaction (Kim et al., 2007) and pleasure (Gupta & Kim, 2007).

3.3.2 Needs Gratification

According to Commitment-Trust Theory, the needs gratification process involves two elements, including relationship commitment and trust. Relationship commitment is defined as "a belief that an ongoing relationship with a partner is so important as to warrant maximum efforts to maintain it" (Morgan & Hunt, 1994). Trust is "the degree of confidence that one has in the trustworthiness and integrity of a person or an organization". Trust is a psychological state. It is present as long as one party of a relationship has confidence in the reliability and integrity of the other party. Trust can nurture development of a closer relationship. Mayer et al. (1995) suggested that trust involves risk taking. The reliability generated from interactions between two parties encourages more and deeper interactions. When trust and information sharing between them reaches a certain level, relationship commitment will form. Assuming that virtual communities are non-profit organizations, members' relationship commitment can lead to higher participation and involvement in the organizations (Gefen et al., 2003).

3.3.3 Social Influence

In this study, social influence is measured by three variables, including "stickiness", "word of mouth (WOM)", and "participation intention". Stickiness refers to the degree to which a website can retain current users, attract passers-by, and turn them into members with a continued use intention. We can evaluate a virtual networking site's stickiness by the length of time that its users stay within the site, frequency of use, and depth of content accessed by it users (Gillespie et al., 1999). Users' willingness to stay within a site is affected by whether there is a strong intention to conduct transactions on this

site. Hence, administrators should focus their attention on improving the stickiness aspect of their web sites (Lin, 2007).

Lin (2007) noted that a website's stickiness is affected by web users' attitudes towards and trust in the quality of the site's service and content. E-readers are well-suited for in-depth reading, but consumers will be reluctant to adopt the technology if the content offering is limited or of low quality (Chiang and Chen, 2014). Therefore, this study treats e-book content as a new product attribute for investigation. Below, we evaluate the users' stickiness of e-book learning according to the quality of content.

WOM communication is a direct form of communication between people. Through sharing and discussion of information regarding a specific good or service, one can pass information about the good or service to others to further affect their evaluations about and intentions to purchase the good or service. WOM is generally viewed as a more independent, reliable, and trustworthy source of information, and it is highly effective as a means of communication. The importance of WOM is recognized by both scholars and practitioners. WOM can be positive (favorable) or negative (unfavorable). Positive WOM is to pass information about satisfactory experiences with a product or service to others. Negative WOM usually stems from dissatisfaction. It is to spread bad experiences or complaint about a specific product or service among others (Richins, 1983). Richins and Root-Shaffer (1988) identified three factors of WOM, including product news, advice-giving, and personal experience. Product news WOM is a more objective type of information. In contrast, both advice-giving WOM and personal experiences WOM may involve the sender's arbitrary use of favorable or unfavorable expressions. In other words, WOM has the functions of providing information and influencing its receivers. Besides, it is documented in many studies that positive messages lead to better evaluations and higher acceptance (Eagly & Chaiken, 1993). Therefore, positive WOM is used in this research.

In our design of items for measuring participation intentions, we first confirmed the operational definition of each variable in the model and then developed items for each variable according to previous literature. Some items were adapted from previous questionnaires with higher reliability and validity. After the questionnaire was developed, we discussed the appropriateness of each item with experts to establish the expert validity of the questionnaire.

The operational definition of each variable is listed in Table 1.

Variable	Operational definition	Reference
Functional requirement	The Facebook embedded learning platform meets users' functional requirement, such as acquiring knowledge.	Kim & Rubin(1997)
Social requirement	Users can use the Facebook functions embedded in the learning platform to increase their social capital. For instance, they can express concern or offer encouragement through the relational network on Facebook.	Ellison; et al. (2007)
Psychological requirement	Users have full control over management of their self-image on this Facebook embedded learning platform. This platform allows them to fulfill their self-esteem, get a sense of belonging, and extend personal reputation in the social network. Their acceptance of this platform will also grow.	Diener et al. (1997)
Relationship commitment	Users recognize the importance of building relationships with learning partners on this platform and will make maximum efforts to maintain the relationships.	Morgan & Hunt(1994)
Trust	Users have confidence in the reliability and trustworthiness of learning partners on this platform. Such confidence facilitates development of closer relationships.	Gefen et al.(2003)
Stickiness	The stickiness of a web site is evaluated by users' dependence as well as the duration, frequency, and depth of their use.	Allison et al. (1999)
WOM	Users pass positive evaluations, recommend or share information about this Facebook embedded learning platform with others.	Richins & Root-Shaffer (1988)
Participation intention	Users' intention to continue using this Facebook embedded learning platform in the future.	Davis (1993)

Table 1. Operational definitions.

Based on the research framework and the above discussion of Social Interaction Theory, UGT, and Commitment-Trust Theory, we propose 13 hypotheses regarding to the use of the proposed Facebook embedded learning platform as follows:

H1: Users who have a higher functional requirement for the learning platform have a higher relationship commitment to the platform.

H2: Users who have a higher functional requirement for the learning platform have higher trust in the platform.

H3: Users who have a higher social requirement for the learning platform have a higher relationship commitment to the platform.

H4: Users who have a higher social requirement for the learning platform have higher trust in the platform.

H5: Users who have a higher psychological requirement for the learning platform have a higher relationship commitment to the platform.

H6: Users who have a higher psychological requirement for the learning platform have higher trust in the platform.

H7: Users who have higher trust in the learning platform have a higher relationship commitment to the platform.

H8: Higher trust in the learning platform leads to higher stickiness of the platform.

H9: Higher trust in the learning platform leads to more WOM about the platform.

H10: Higher trust in the learning platform to higher participation intention.

H11: Higher relationship commitment to the learning platform leads to higher stickiness of the platform.

H12: Higher relationship commitment to the learning platform leads to more WOM about the platform.

H13: Higher relationship commitment to the learning platform leads to higher participation intention.

4 METHODS

4.1 Measurement

The research variables include functional requirement, social requirement, psychological requirement, trust, relationship commitment, stickiness, WOM, and participation intention. Based on previous literature, all the measuring items were designed to be evaluated on a 7-point Likert scale, ranging from 1-“strongly disagree” to 7-“strongly agree”. A small portion of the items had been modified by experts to fit the research design.

4.2 Data Collection

In order to test the proposed hypotheses, we collected data from an online survey. The questionnaire was published on a well-known social networking site. Both members and non-members of the site were allowed to browse the questionnaires, but only those who have used the Facebook embedded learning platform before were allowed to participate in the survey. A total of 326 responses were collected. Excluding 73 invalid responses, 251 responses remained. The valid response rate was 83.7%. This sample comprised 51.39% male and 48.61% female. 48.61% of the respondents were below age 20, and 51.39% were above 20. About the degree of education, a total 19.22% of the respondents did not have a college degree, 79.61% had a college degree, and 1.17% had a master or a higher degree.

5 RESULTS

Partial least squares method (PLS) has fewer limitations on sample size, measurement scale, and data distribution (Rose et al., 2012). Therefore, this study adopted PLS for data analysis. This chapter consists of analysis of demographic statistics of the sample, test for reliability and validity of the questionnaire, and validation of the proposed model and hypotheses.

5.1 Test for reliability

Reliability is a measure of the consistency or stability of the measuring instrument. It is the level of consistency of results obtained from different groups or at different periods of time using the same measuring instrument. Nunnally (1978) has indicated that Cronbach's α should be greater than 0.7 for a scale to be reliable. In our study, the Cronbach's alpha statistics for all the nine dimensions ranged between 0.717~1, all exceeding the suggested threshold value of 0.7. Therefore, the questionnaire was developed with high reliability, and it was not necessary to delete any item at this stage.

5.2 Measurement model

Table 2 shows the results of tests for validity, reliability, and discriminant validity. The composite reliability (CR) was greater than 0.80 across all the dimensions. Besides, the average variance extracted (AVE) was greater than 0.5 across all the dimensions (Hair et al., 2006). This indicated that more than half of the items were effective. AVE is an indicator of how much the measurement items can explain the variance in the dimension. Higher AVE indicates higher reliability and convergent validity of items in the dimension. In order to examine discriminant validity, we further compared average variance and shared variance between dimensions (Fornell & Larcker, 1981). The AVE for each dimension should be greater than its shared variance with any other construct. Results supported the reliability, convergent validity, and discriminant validity of the measurement model.

	M	SD	CR	AVE	FR	SR	PR	CMT	TRT	STK	WOM	INT
Functional requirement (FR)	5.12	0.82	0.95	0.54	0.73							
Social requirement (SR)	5.23	0.83	0.95	0.54	0.68	0.74						
Psychological requirement (PR)	5.01	0.90	0.94M	0.60	0.58	0.70	0.78					
Relationship commitment (CMT)	4.92	1.01	0.93	0.72	0.71	0.70	0.64	0.85				
Trust (TRT)	4.95	0.96	0.93	0.74	0.70	0.69	0.67	0.83	0.86			
Stickiness (STK)	4.65	1.02	0.91	0.71	0.63	0.61	0.56	0.61	0.66	0.84		
Word of mouth (WOM)	4.90	1.12	0.95	0.78	0.67	0.60	0.54	0.70	0.71	0.73	0.88	
Participation intention (INT)	5.07	0.99	0.94	0.74	0.70	0.61	0.51	0.70	0.70	0.64	0.81	0.86

Note: 1. Diagonal elements are the square roots of AVE, and off-diagonal elements are the correlations.

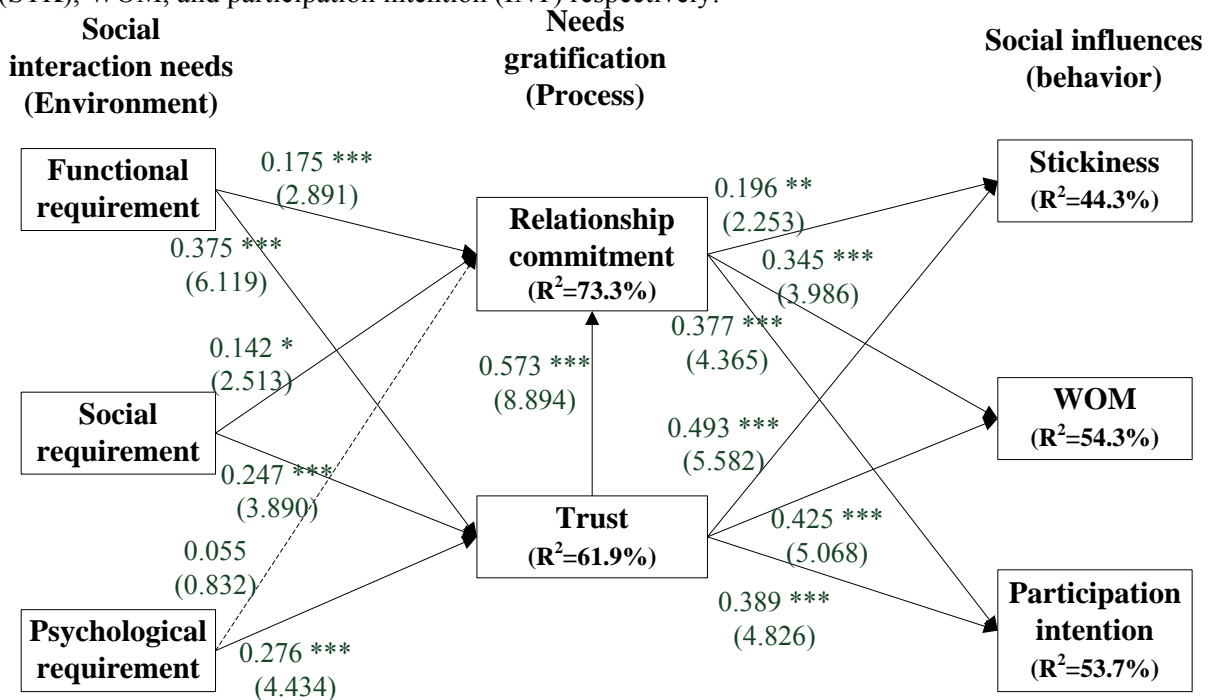
2. Frequency and monetary value were measured using a single item, such that the composite reliability (CR) value and the AVE of the two variables were not computed.

Table 2. Results of tests for reliability, convergent validity, and discriminant validity

5.3 Structural Model

The proposed structural model was tested using SmartPLS 2.0. PLS does not generate an overall goodness-of-fit index. Instead, it uses the coefficient of determination (R^2) to examine the predicting power of the structural paths. We adopted bootstrapping method for parameter estimation. Bootstrapping is a non-parametric estimation method. It estimates the distribution of a statistic through re-sampling. According to Chin (1998), we conducted 500 times of re-sampling to test the significance

of statistic for each structural path. Based on the two-stage evaluation model and Bootstrapping method, we obtained results as shown in Figure 6. It was found that both functional requirement (FR) and social requirement (SR) have a significant effect on relationship commitment (CMT) ($\beta = 0.175$, $\beta = 0.142$) and trust ($\beta = 0.375$, $\beta = 0.247$); the effect of psychological requirement (PR) on trust (TRT) is significant ($\beta = 0.276$); the effects of trust (TRT) on relationship commitment (CMT) ($\beta = 0.573$), stickiness (STK) ($\beta = 0.493$), WOM ($\beta = 0.425$), and participation intention (INT) ($\beta = 0.389$) all reach the level of significance. Therefore, H7, H8, H9, and H10 are supported. Besides, relationship commitment (CMT) has a significant effect on stickiness (STK) ($\beta = 0.196$), WOM ($\beta = 0.345$), and participation intention (INT) ($\beta = 0.377$). Only the relationship between psychological requirement (PR) and relationship commitment (CMT) is not significant. Therefore, except H5, all the proposed hypotheses are supported. Functional requirement (FR), social requirement (SR), psychological requirement (PR), and trust (TRT) explain 73.3% variance in relationship commitment (CMT); functional requirement (FR), social requirement (SR), and psychological requirement (PR) explain 61.9% variance in trust (TRT); trust (TRT) explains 44.3%, 54.3%, and 53.7% variances in stickiness (STK), WOM, and participation intention (INT) respectively.



Note: 1. The values without parentheses are path coefficients, and those within parentheses are t-values.
 2. — indicates the effect is significant; ---- indicates the effect is not significant.

Figure 2. Path analysis results

6 DISCUSSION AND IMPLICATIONS

In this study, a Facebook embedded picture book design learning platform was built and applied to a multimedia design course. Students of this course uploaded the electronic picture books they designed to the platform and discussed their ideas with each other. In the future, teachers can apply this platform to instruction of project designs. As this platform supports peer interaction, it can help students improve the quality of their design works.

This study also integrated UGT, Social Interaction Theory, and Commitment-Trust Theory to investigate students' behavior of using and intention to use a cloud-based platform for learning multimedia design. Results indicated that functional requirement, social requirement, and psychological requirements are significantly related to trust, and the effect of functional requirement on trust is relatively greater. This implies that the respondents agreed that they could acquire related knowledge by using a cloud-based learning platform that integrates designs of picture books and Facebook functions, and acquiring knowledge was the major motive for them to use the platform. Besides, the significant relations of functional requirement and social requirement to relationship commitment suggest that the respondents agreed that by using this platform, they could maintain their social relations, satisfy personal needs, build trust in each other, and maintain relationships with partners on the platform. However, the effect of psychological requirement on commitment relationship was not insignificant, indicating that gratification of psychological requirements was not a significant factor affecting the respondents' intention to build relationships with other partners on the platform, but it would affect the trust between them.

Besides, the respondents' platform usage behavior and intentions, including stickiness, WOM, and participation intention, were affected by their commitment to and trust in the platform. In other words, users will be more likely to use the platform, spread positive word of mouth, and continue using it when they have close relationships and more trust in each other. Finally, functional requirement, social requirement, and psychological requirement were all found to have a significant effect on trust; the three dimensions of social interaction needs would affect all the dimensions of social influences, namely stickiness, WOM, and participation intentions through needs gratification.

7 CONCLUSIONS AND FUTURE RESEARCH DIRECTIONS

Social communities add fun to the activity of reading. In recent years, due to prevalence of mobile devices and abundance of digital learning materials, the digital divide in education has narrowed significantly. The advancement of wireless networking technology, particularly in the aspect of cost-effectiveness, (setting up a wireless access point costs less and offers more coverage compared to setting up a fixed line network) has helped broken many barriers to learning. Many learning resources become easily accessible, and people can also quickly get ideas of how to use electronic learning devices. As a result, the cost of training will decrease, and people's intention to use electronic learning devices will increase.

The development of social reading is expected to change people's reading behavior. The connection with social communities and use of automatic mechanisms will help create a strong chain of relations. Readers can read on the go and get more fun of reading from social communities. As the demand for mobile reading is increasing, service providers should pay attention to readers' needs in all aspects. They should cater to the demand of readers for content and quality and also manage to improve problems in mobile reading. Socialization and mobilization of reading is an inevitable trend. The way we read has evolved from Reading 1.0 where we acquire knowledge only from books into Reading 2.0 where we can read with people with shared interests in social networks. Ahead of this trend is Reading 3.0, which stresses that reading should be reader-centered. In other words, readers can choose what they want to read. Readers' needs will be diverse but not hard to capture. In this digital age where knowledge economy is taking a priority, all genres of digital materials are generated in a rapid speed. Electronic reading is a trend that cannot be neglected. Libraries which have the responsibility of disseminating knowledge and promoting reading should offer new reading services while protecting the copyright of digital content.

Our directions for future researchers are summarized in three points. First, this platform can be applied by teachers to improve their teaching quality, and this platform also offers a new way of teaching. Second, whether the effectiveness of this cloud-based learning platform is affected by learners' individual variables, such as personality traits or learning style, can be examined. The third point is particularly more important. Students' design works can be made accessible to a wider audience.

Extensive sharing and promotion of their works can benefit learners by increasing their learning from one another. Overall, this cloud-based learning platform not only contributes to the development of learning in the cloud environment. It can also serve as a reference for other teachers in design of supplementary teaching materials or improvement of their teaching models.

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