

# EXPLORING STUDENTS' E-LEARNING EFFECTIVENESS THROUGH THE USE OF LINE CHAT APPLICATION

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## ABSTRACT

This study explores the impact of motivational goals for using social networking sites (SNS) usage and computer self-efficacy towards e-learning effectiveness of the 155 students from different schools at a private university, in Pathum Thani province, Thailand during April to May of academic year 2015/2016. Social dimension and human interaction have played more significant roles in learning and teaching especially in higher institutions. Web 2.0 introduced many users to generate, share, and reuse contents using SNS like Facebook, Twitter, and LINE. LINE chat application was the second largest SNS application utilized by Thai users. Thai students, who often prefer to listen rather than speak to communicate with their teachers, feel more comfortable to chat with their teachers through virtual worlds using LINE. The results revealed that there was positive influence of motivational goals for using SNS usage and computer self-efficacy towards e-learning effectiveness. The highest impact was motivational goals for using SNS usage followed by computer self-efficacy affecting e-learning effectiveness. Possible avenues for future research are also suggested in this study.

## KEYWORDS

LINE chat application, computer self-efficacy, e-learning effectiveness, Thailand

## 1. INTRODUCTION

Education in digital age has been focused on social and human interactions. Teachers, students, university administrators, parents, community members have been connected to know, learn, and share their everyday activities. Modern Information and Communication Technology (ICT) are extensively explored and utilized for their potential contribution to make education that can meet the expectations of the society in terms of enhancing students' skills that future employers need (Atabekova et al., 2015). The rising of connectivity has changed traditional routines and offered new paths for learning (Schmidt and Cohen, 2013). Web 1.0 introduced users to passively accept the content provided by authors. Web 2.0 allowed many users to generate, share, and develop the content by using a wide variety of technologies like Youtube, messaging and chat, RSS feeds, Podcasts, blogs, online grading, quiz and assessment tools, publishing and social networking sites (Atabekova et al., 2015). Social Networking Sites (SNS) are web-based services that allow users to construct their profiles, create lists of other users with whom they share connections, as well as traverse their lists of connections to others within the system (Boyd and Ellison, 2007; Dermentzi et al., 2016). In Thailand, Facebook was the top SNS used (92.1%), followed by LINE (85.1%), Google+ (67.0%), Instagram (43.9%), and twitter (21.0%) from 10,434 respondents of the survey by Electronic Transactions Development Agency (Public Organization) in 2013 (ETDA.OR.TH, 2015). These communication tools have been intentionally and unintentionally used by teachers and students for academic purposes (Veletsianos, 2012; Van De Bogart and Wichadee, 2015; Košir et al., 2016). In Thailand, while Facebook is more widely used for social purposes, Thai students choose LINE chat application in their study because it is not only for social function, but it can also be used as a communication tool as for academic purpose. The application has the feature of

chat group, which is widely used in Thailand, allowing students and their teacher to discuss and exchange ideas more efficiently at anytime, resulting in better learning outcomes (Abrantes, Seabra and Lages, 2007; Dempsey, Halton and Murphy, 2001). Students can use the application as a part of e-learning tools to improve their grade point average by receiving prompt responses from their teachers (Novo-Corti et al., 2013; Van De Bogart and Wichadee, 2015). Therefore, the purpose of this study is to explore the influence of motivational goals for using SNS usage and computer self-efficacy towards e-learning effectiveness of undergraduate students at a private university in Pathum Thani province of Thailand. LINE chat application was chosen to be studied in this research because teachers in Thailand are using LINE more than Facebook.

## 2. RELATED WORKS

Social Networking Sites (SNS) have been implemented for academic purposes by higher institutions around the world. For example, the incremental predictive power of students' Facebook usage indicators for their peer relations self-concept beyond their actual classroom acceptance was tested with 404 early adolescents in Slovenia. The authors found that Facebook users reported significantly higher classroom peer relations self-concept (Košir et al., 2016). In the USA, Veletsianos revealed that 45 scholars participating on Twitter discussions shared information, resources, and media relating to their professional practice, classroom and students. Scholars, teachers, and students engaged in social commentary and sought to network and make connections with others using Twitter (Veletsianos, 2012). Veletsianos and Kimmons further conducted a large-scale research examining education practitioners, who were professors' and doctoral students and reported how education scholars used Twitters in the USA (Veletsianos and Kimmons, 2016). Schiller (2016) addressed learning in online chat virtual reference service at a large university library in USA. The findings suggested that the mediated learning in chat reference conversations was co-constructed with the technical environment mediated by online technology and the social environment mediated by social presence. The major role of the online technology was that it allowed developmental transformation of learning of the teachers and students who benefited from "give fish" and "teach fishing" styles of teaching (Schiller, 2016).

Moreover, social networking technology had been used to supplement face-to-face courses to enhance students' sense of community in the context of higher education in Taiwan. The researchers indicated that the majority of participants developed strong feelings of social connectedness and expressed favorable feelings regarding their learning experiences in the classes where social networking sites were used as a supplementary tools (Hung and Yuen, 2010). Last but not least, LINE chat application has also been used as communication tool in education (Shiohara et al., 2014). In Thailand, Van De Bograt and Wichadee examined how undergraduate students accepted LINE in terms of using it for classroom-related activities such as submitting homework, following up course information queries, and downloading materials. They found that perceived usefulness and attitude toward usage had positive relationships with intention to use while perceived ease of use was positively related to perceived usefulness (Van De Bogart and Wichadee, 2015).

LINE chat application is a free messaging, sending from one-on-one and group text to others anytime, anywhere. It can be used for a variety of electronic devices such as iPhone, Android, Window Phone, BlackBerry, Nokia, or personal computer (PC). The users can call their friends and family members as often as possible, and for as long as they want. They can use free international voice and video calls. The most attracting features of the application is most likely availability of stickers and emoticons from sticker shop, favorite characters, and celebrities to use as expression of their feelings. LINE allows users to share photos, videos, voice message, contacts, and the information of their current location. The users can also follow the official accounts of their favorite artists, celebrities, brands, and TV shows for news and promotions. The users can further exchange stories with their friends by sharing texts, photos, video, and stickers on their TIMELINE. They can quickly add friends using the "Shake IT" function, a QR code, or a LINE ID (LINE.ME, 2016).

In Asian culture, teachers may cut students' questions in order to rush finishing what they want to teach. In China, a good teacher may refer to a teacher who can make students get high scores in every test. So, starting from primary schools, students are trained to listen quietly in classrooms, take down every word the teacher said onto their notebooks, and do lots of exercises in order to perform better in tests (Yu, 2015). Moreover, they are taught to follow letters, memorize them (not to question), and know that asking questions

in class are considered disrespectful (Liu, 2001; Nataatmadja et al., 2007). Asian students including those from China, India, Indonesia, Vietnam, and Thailand are usually the most under-represented group in class discussion in a university in Australia (Nataatmadja et al., 2007). On the other hand, Western students believe that class participation is important since it will help to reinforce the curriculum, improve presentation skills, as well as enhance social skills (Nataatmadja et al., 2007).

Therefore, e-learning and Face to Face Mixed Methodology (ELFF) combines traditional classroom learning environment with virtual environments (Novo-Corti et al., 2013) such as allowing students to meet the instructors face to face in classes and giving them ability to contact instructors through chat communication program like LINE chat application. Students can make use of the application as a more efficient and motivating tool to face teachers. Student can utilize the system as a part of e-learning tools to improve their grade point average by receiving prompt responses from their teachers (Novo-Corti et al., 2013; Van De Bogart and Wichadee, 2015). The technology involves an instant-messaging-like interface where students can submit questions through a chat window and receive replies from teachers. Compared to the traditional methods of sending and receiving emails, answering phone calls, or meeting face-to-face; these online chat services are implemented through the Internet, so it is considered low-cost. Additionally, this virtual service is often provided after working hours and becomes an effective way to provide additional service to users beyond normal business hours (Schiller, 2016). Questions related to e-learning effectiveness in this study involved the perception of students of how e-learning communication tool like LINE can assist their learning efficiency, performance, and motivation.

Furthermore, Poondej and Lerdpornkulrat (2016) suggested that students' motivational goal orientation referred to perceptions of the classroom learning environment with learning strategies. They found that individual personal attributes promoted the deep approaches to learning by student (Poondej and Lerdpornkulrat, 2016). Online chat application like LINE can significantly facilitate information communication related to classroom activities (Van De Bogart and Wichadee, 2015; Manasijević et al., 2016). The communication application has been claimed to be number one in the free app category in 42 countries including Japan, Taiwan, Thailand, Spain, Hong Kong, Singapore, Malaysia, and more (LineFreeCallsAndMessages, 2013). It can motivate students to increase their critical thinking by building knowledge through "social constructivism" by giving students prompt responses from teachers and other students (Van De Bogart and Wichadee, 2015). Students can informally and formally communicate with teachers using stickers, animated stickers, voice stickers, emoticons, text, photo, video, free calls, and free video calls (LINE.ME, 2016). The chat application allows users to express their feelings through their favorite artists, celebrities, and characters to send to their receivers. They can convey their tone of voice such as surprise, anger, disappointment, sadness, and astonishment utilizing emoticons or stickers. Students use this communicational tool to explore their own feelings without being threatened as they might feel in a real face-to-face situation (Van De Bogart and Wichadee, 2015). Therefore, questions related to motivational goals for using SNS usage for this study includes how the students can make contact with friends, find new friends, and follow courses' requirements by chatting with their peers and instructors.

Computer self-efficacy refers to positive and intrinsic factors affecting acceptance of computer usage by users. Self-efficacy first proposed by Bandura (1993) as a component of users' personal factors related to behavioral changes that often affected users' motivation (Lu et al., 2016; Bandura, 1993). It is a confident in one's own ability to succeed in doing a task. Then, computer self-efficacy defined as an individuals' perceptions of one's own ability to use electronic device like computer to accomplish a task (Lu et al., 2016; Sánchez and Hueros, 2010). Therefore, the definition could lead to the following hypothesis that motivational goals for using SNS usage and computer self-efficacy have influence towards e-learning effectiveness of undergraduate students at a private university in Pathum Thani province of Thailand.

### 3. RESEARCH METHOD

The research method used in this study was a questionnaire survey. The items had been adapted from previous studies from the literature review above. The two independent variables which were motivational goals for using SNS usage and computer self-efficacy and one dependent variable e-learning effectiveness were measured on a five-point Likert scale ranging from 1 "strongly disagree" to 5 "strongly agree".

The sample was taken students from different schools at a private university in Pathum Thani province of Thailand who used LINE chat application in their courses. LINE chat application has been used by teachers in Thailand more than Facebook; therefore, LINE chat application was chosen to be studied in this study.

The questionnaire survey was conducted in class after prior testing by two experts. After this pre-test, some questions were adjusted for better clarification. The questionnaire was answered by students on courses in April to May of academic year 2015/2016. Of the 200 distributed questionnaires, 155 were utilized for analysis. The overall response rate was 77.5%. Descriptive statistics was used initially including frequencies and percentages for description of sample group demographics. Then, multiple regression analysis was implemented to prove hypothesis. Cronbach's alpha coefficient values were 0.67 for motivational goals for using SNS, 0.77 for computer self-efficacy, and 0.86 for e-learning effectiveness. All Cronbach's alpha coefficient values were above 0.65 (Nunnally, 1978) required to verify reliability.

#### 4. RESEARCH RESULTS

The demographic information of the respondents are illustrated in Table 1. The results showed that most of them were men (55.5%), at the age of 19 years old (31.6%), in sophomore year (52.9%), with cumulated GPA of 2-2.99 (52.9%), and in School of Accounting (61.9%).

Table 1. Demographic Information of the Respondents

Variables		Frequency N = 155	Percent
Gender	Male	86	55.5
	Female	69	44.5
Age	18 years	02	01.3
	19 years	49	31.6
	20 years	38	24.5
	21 years	35	22.6
	22 years	20	12.9
	More than 22 years	11	07.1
Class Year	freshman	18	11.6
	sophomore	82	52.9
	junior	40	25.8
	senior	11	07.1
	More than senior	04	02.6
Cum.GPA	1.0 - 1.99	35	22.6
	2.00 - 2.99	82	52.9
	3.00 - 3.99	34	21.9
	4.00	04	02.6
School	School of Business Administration	11	07.1
	School of Economics	24	15.5
	School of Science and Technology	14	09.0
	School of Communication Arts	03	01.9
	School of Accounting	96	61.9
	School of Humanities and Tourism Management	01	00.7
	School of Architecture	02	01.3
	School of Engineering	02	01.3
	School of Fine and Applied Arts	02	01.3

In Table 2, the total mean scores showed “high” level of agreement of motivational goals for using SNS usage and e-learning effectiveness along with the “highest” level of agreement of computer self-efficacy with the means ranging from 3.7351 to 4.0618 and the standard deviations starting from 0.5526 to 0.8889.

Table 2. The Level of Variables

Variables	Mean	Std. Deviation	Meaning
Motivational goals for using SNS usage	3.9404	0.7917	High Level
Computer self-efficacy	4.0618	0.5526	Highest Level
E-Learning Effectiveness	3.7351	0.8889	High Level

From Table 3, multiple regression analysis by entering method was implemented to identify the influence of motivational goals for using SNS usage and computer self-efficacy towards e-learning effectiveness with the level of statistical significance at 0.05. The results showed that the hypothesis can be accepted by having the highest standardized beta coefficient of 0.591 for motivational goals for using SNS usage and 0.180 for computer self-efficacy affecting e-learning effectiveness respectively. All the independent factors could explain the e-learning effectiveness by using LINE chat application of a private university’s students at the 45.40 percent of variance.

Table 3. Multiple Regression Analysis by Enter Method

Variables	b	SE <sub>b</sub>	β	t	Sig.
<b>Independent Variables</b>					
Motivational goals for using SNS usage	0.664	0.072	0.591	9.168*	0.000
Computer self-efficacy	0.290	0.104	0.180	2.797*	0.006
<b>Dependent Variable: E-Learning Effectiveness</b>					
R = 0.674    R <sup>2</sup> = 0.454    a = -0.060    F = 61.560**					

\*p < .05

The equation of the results as follows:

Y (E-learning Effectiveness) = -0.060 + 0.591 (Motivational Goals for Using SNS Usage + 0.180 (Computer Self-Efficacy)

Therefore, teachers should aim to motivate goals for using SNS and be certain that students have enough computer self-efficacy to be effective in e-learning environment with the use of LINE chat application.

## 5. CONCLUSION

Digital era has changed the way students are educated. Social dimension and human interaction have played more significant roles in learning and teaching especially in higher institutions. Instructors and students have shared and learned more from one another by using newer ICT. Web 2.0 introduced many users to generate, share, and reuse contents using SNS like Facebook, Twitter, and LINE. LINE chat application was the second largest SNS application utilized by Thai communities. It is not only facilitating higher education environment, but also helping Thai students who often prefer to listen rather than speak to communicate with their teachers in virtual worlds instead of face-to-face world. The hypothesis was accepted as there was the influence of motivational goals for using SNS usage and computer self-efficacy towards e-learning effectiveness. The highest impact was motivational goals for using SNS usage followed by computer self-efficacy affecting e-learning effectiveness. These results confirmed that the LINE chat application program, as an e-learning effectiveness environment, allowed students to contact teachers more efficiently and effectively (Novo-Corti et al., 2013).

Instructors can emphasize motivate goals for using SNS by encouraging their students to use this instant-messaging-like interface to submit questions through a chat window and to receive replies from instructors (Van De Bogart and Wichadee, 2015; Schiller, 2016). Students can informally or formally connect with their instructors using stickers, animated stickers, voice stickers, emoticons, or free video calls to explore their own feelings without being threatened by a real face-to-face situation (Poondej and Lerdpornkulrat, 2016; Van De Bogart and Wichadee, 2015). Then, the instructors can be certain that students have enough computer self-efficacy to be effective in e-learning environment with the use of LINE chat application since computer self-efficacy is an individuals' perceptions of his/her own ability to accomplish a task (Lu et al., 2016; Bandura, 1993; Sánchez and Hueros, 2010). The example of future research should be studying how cultural dimensions can impact e-learning effectiveness. Data collections from other universities can provide a clearer picture of the results.

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