THE BARRIERS AND NEEDS OF ONLINE LEARNERS

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ABSTRACT

This study investigated some specific barriers and needs that online students are facing when learning English through WebEx system. It compared students' barriers and needs with their background including gender, computer ownership, and monthly allowance. It also investigated the relationship among computer aptitude, barriers and needs of online learners. The samples were 211 undergraduate students enrolled in Fundamental English course. The instrument in this study was a questionnaire. Results indicated that the levels of needs and barriers of online learners in general were moderate. There were no statistically significant differences at .05 level found in barriers and needs of online learners as classified by gender, computer ownership, and computer aptitude. As hypothesised, there was a negative relationship between computer aptitude and barriers of online learners at .01 level. Students with high computer aptitude had fewer barriers to learn online than those with low computer aptitude.

In addition, there was a positive relationship between barriers and needs of online learners at .01 levels. Students with more barriers were found to have more needs to help them to learn online than those with few barriers. Teachers and institutions can take the results of this study into consideration when developing online courses.

Keywords: Barriers, needs, computer aptitude, WebEx, online learning.

INTRODUCTION AND THEORETICAL FRAMEWORK

Contemporary distance learning can be defined as "a planned teaching or learning experience that uses a wide spectrum of technologies to reach learners at a distance and is designed to encourage learner interaction and certification of learning" (Greenberg, 1998, p. 36). The term distance learning has been applied to many instructional methods such as an interactive DVD-ROM instead of a simple textbook, videotaped lectures and audiotapes with lessons sent through the mail.

The most obvious benefit of distance learning is the ability to learn from anywhere. Online and distance learning methods provide the convenience of time and space since students and teachers do not have to physically be in space and, depending on the method used, they do not have to be together in time as well.

Online and distance learning methods make it possible to study at colleges and universities across the globe. Today, the Internet allows distance learning to occur in real time. Teachers can compress live video conferencing to reach students who are unable to attend classes because of time or distance.

Online education can be flexible, accessible and convenient for students; they have more freedom to work at their own pace and on their own schedule.

Online learners can also save the cost of commuting. In addition, the overall cost of the online education might be lower than traditional place-based education (Distance Learning Plan, 2013). Administrators can make higher education more cost-effective (Dibiase, 2000). Institutions can save cost and time, and instructors can easily update and revise their courses (Hopey & Ginsburg, 1996; Kilian, 1997; Owston, 1997). Therefore, online education is becoming more popular.

Despite the obvious advantages to online and distance learning, there are some problems that need to be considered. While technology is a key component of a distance learning program, it can also be one of the distance learning problems. One of the most frequently mentioned barriers is decreased live, face-to-face interaction between students and instructors (Berge, 1998; Clay, 1999; Kirby, 1999). Instruction can be delayed or relayed poorly due to problems with multimedia equipment and Internet connections. Moreover, the technology and equipment required to participate in an online class might not be cheap. Other online and distance learning failures can be influenced by administration, instructional methods, or students. Online learners may encounter the lack of support and services such as providing tutors, knowledge of computers, and technical assistance. In many ways, each of these issues relates to the others and has an effect on the overall quality of online and distance learning.

Some researchers point out that the effectiveness of online and distance learning does not depend on technology itself, but on the instructors' preparation (Omoregie, 1997). Distance learning might result in poor outcomes if instructors do not design their online lessons properly. Schmidt and Gallegos (2001) found out that distance education does not work for everyone: it would not be a good idea for many people who are not self-directed or self-motivated and need to have interaction through the classroom.

They also pointed out that the interaction with an instructor and classmate is also important, so course designers should consider the needs of online learners and understand the target population. They should provide a way for students and instructors to interact such as chat rooms, a toll-free number, and once a week physical meeting in a classroom.

Knowing the characteristics and demographics of the distance learners helps us understand the potential barriers to online learning (Galusha, 2008). Also, needs assessment can help to defend some factors contributing to success. Stewart and Cuffman (1998) pointed out that the integration of needs assessment as part of a total distance education system should benefit all stakeholders (e.g., faculty, administrators, students). Although it may not be able to guarantee success in a distance education course or program, it can assist organizations and institutions to optimize their service to clients and result in better program design, development, and delivery (Queeney, 1995, p. 261). Although distance learning can be an excellent alternative to a traditional, classroom-based education, there are problems that need to be resolved before applying online and distance learning methods. Therefore, the goal of this article is to find out how the barriers and needs of online learners differ from students of traditional learning and how instructors and institutions can support.

PURPOSES OF THE STUDY

- **To study barriers and needs that online students are facing when learning English through WebEx system.**
- **To compare students' barriers and needs with their background including gender, computer ownership, and monthly allowance.**
- **To investigate the relationship among computer aptitude, barriers and needs of online learners.**

RESEARCH METHODOLOGY

Population and Samples

The participants included in this study were undergraduate students enrolled in Fundamental English course at Bangkok University. These students have studied English as a foreign language. The samples were selected by the use of stratified random sampling technique. As a result, 211 students were participated in the data collection.

Research Instrument

In order to identify barriers and needs of online learners, a questionnaire was used to collect the data. The first part gathered personal information from the respondents who were asked to answer the questions on gender, computer ownership, and computer aptitude. The second part was a survey of students' barriers and needs when learning English through WebEx system. The questionnaire was prepared for rating in a form of five-rating scale.

Data Analysis

The acceptable statistical significance level was set at alpha (α) < .05. After the receipt of the completed questionnaires, the data were statistically analyzed by using SPSS/Window 12 through the following steps:

- **The data of personal information were brought to calculate for average means.**
- **The data of computer aptitude, barriers and needs of online learners were brought to calculate for average means and standard deviation.**
- **The means of computer aptitude, barriers and needs of online learners were divided into three levels and interpreted in the form of range based on the criterion of $\bar{X}$ ±.5SD.**

  - **The average mean of computer aptitude of online learners was 3.48 and standard deviation was .59.**

$$3.48 \pm (.5)(.59) \rightarrow 3.48 \pm 0.30$$

Computer Aptitude of 0nline Learners	Mean Range
high	3.79 – 5.00
moderate	3.18 – 3.78
low	1.00 – 3.17

- **The average mean of barriers of online learners was 2.72 and standard deviation was .74.**

$$2.72 \pm (.5)(.74) \rightarrow 2.72 \pm 0.37$$

Barriers of 0nline Learners	Mean Range
high	3.10 – 5.00
moderate	2.35 – 3.09
low	1.00 – 2.34

- **The average mean of needs of online learners was 3.62 and standard deviation was .71.**

$$3.62 \pm (.5)(.71) \rightarrow 3.62 \pm 0.36$$

Needs of 0nline Learners	Mean Range
high	3.99 – 5.00
moderate	3.26 – 3.98
low	1.00 – 3.25

- **The independent-samples t-test was used to test the mean scores of two groups of subjects concerning barriers and needs of online learners.**
- **The One-Way Analysis of Variance (ANOVA) test was used to compare mean scores of three and more groups concerning barriers and needs of online learners.**
- **The Pearson product-moment correlation coefficient test was used to investigate the relationship between computer aptitude and barriers of online learners as well as the relationship between barriers and needs of online learners.**

RESULTS

Results of Fundamental Analysis

1.1 Level of the Computer Aptitude of 0nline Learners

The study revealed that the computer aptitude of online learners in general was moderate ($\overline{X}$ = 3.48). Among four items of computer aptitude, the highest mean of opinion was Internet skill ($\overline{X}$ = 3.90). It was at a high level.

Software, hardware and typing skills were at a moderate level ($\overline{X}$ = 3.44, 3.40, 3.18). The results were presented in Table 1.

Table: 1
Mean and Standard Deviation of the Computer Aptitude of 0nline Learners

Computer Aptitude of 0nline Learners	$\overline{X}$	S.D.	Level
• Hardware	3.40	.71	moderate
• Software	3.44	.70	moderate
• Internet skill	3.90	.71	high
• Typing skill	3.18	.90	moderate
Total	3.48	.59	moderate

Level of the Barriers of 0nline Learners

The study revealed that the level of barriers of online learners in general was moderate ($\overline{X}$ = 2.72). The problems with online system were high ($\overline{X}$ = 3.22) while the learners' personal problems were low ($\overline{X}$ = 2.22).

The results were presented in Table: 2.

Table: 2
Mean and Standard Deviation of the Barriers of 0nline Learners

Barriers of 0nline Learners	$\overline{X}$	S.D.	Level
• Problems with online system	3.22	.90	high
• Learners' personal problems	2.22	.93	low
Total	2.72	.74	moderate

The level of problems with online system in general was high ($\overline{X}$ = 3.22). Among four items of problems with online system, the third highest score were connection error, convenience of communication and system complexity respectively ($\overline{X}$ = 3.35, 3.26, 3.16).

The lowest mean was the item of attractiveness ($\overline{X}$ = 3.11). All of the four items concerning problems with online system were at a high level. The results were presented in Table 3.

Table: 3
Mean and Standard Deviation of the Barriers of 0nline Learners in terms of Problems with Online System

Problems with Online System	$\overline{X}$	S.D.	Level
• Connection error	3.35	1.14	high
• System complexity	3.16	1.11	high
• Convenience of communication	3.26	1.18	high
• Attractiveness	3.11	1.06	high
Total	3.22	.90	high

The level of learners' personal problems in general was low ($\overline{X}$ = 2.22). Among four items of problems with learners' personal problems, the third highest score were a lack of money to support the cost of Internet connection, a lack of computer skills and a lack of understanding of WebEx system ($\overline{X}$ = 2.28, 2.27, 2.26).

The lowest mean was the item of a lack of Internet skills ($\overline{X}$ = 2.09). All of the four items of learners' personal problems were at a low level. The results were presented in Table: 4.

Table: 4
Mean and Standard Deviation of the Barriers of 0nline Learners in terms of Learners' Personal Problems

Learners' Personal Problems	$\overline{X}$	S.D.	Level
• A lack of computer skills	2.27	1.04	low
• A lack of Internet skills	2.09	1.04	low
• A lack of understanding of WebEx system	2.26	1.10	low
• A lack of money to support the cost of Internet connection	2.28	1.24	low
Total	2.22	.93	low

Level of the Needs of 0nline Learners

The study revealed that the level of needs of online learners in general was moderate ($\overline{X}$ = 3.62). Among six items of needs of online learners, the third highest means of opinion were items no. 5, 1 and 4 respectively ($\overline{X}$ = 3.88, 3.82, 3.74). These items were at a moderate level. The lowest mean which was item no. 3 ($\overline{X}$ = 3.14) was at a low level. The results were presented in Table: 5.

Table: 5
Mean and Standard Deviation of the Needs of 0nline Learners

Needs of 0nline Learners	$\overline{X}$	S.D.	Level
• Sufficient university facilities for online learning	3.82	.94	moderate
• Self-study handbook for online learners	3.47	1.04	moderate
• Workshops for online learners	3.14	1.04	low
• Simplifying the process of online learning	3.74	1.04	moderate
• Improvement of system's attractiveness	3.88	.99	moderate
• PR campaign to promote online learning	3.64	.97	moderate
Total	3.62	.71	moderate

Results of Hypothesis Testing

Hypothesis 1 Compared Barriers Of Online Learners With Different Background

Hypothesis 1 was not accepted because none of the variables related to students' background affected their barriers. There were no statistically significant differences at .05 level found in barriers of online learners as classified by gender, computer ownership, and monthly allowance. The overall mean score of male students ($\overline{X}$ = 2.72) was equal to that of female students ($\overline{X}$ = 2.72). Both groups had barriers at a moderate level. Due to the results obtained from the application of the t-test, it was found that there was no statistically significant difference found in overall barriers of online learners between two groups (male and female) at level of .05. This means that male and female students were not different in having barriers. The overall mean score of students who owned a computer was lower than that of students who didn't own a computer ($\overline{X}$ =2.72, 2.90). Both groups had barriers at a moderate level. The t-test was employed to examine the significant difference between students who owned a computer and those who didn't own a computer on their barriers.

It was found that there was no statistically significant difference found in barriers of online learners between two groups at level of .05. This means students who owned a computer and those who didn't own a computer were not different in having barriers.

The results obtained from applying the ANOVA revealed that no difference in overall barriers among three groups of monthly allowance (less than 3,500 baht; 3,501-5,000 baht; and more than 5,000 baht) was found statistically significant at .05 level.

This means that allowance received from parents per month had no impact on barriers of online learners.

Hypothesis 2 Compared Needs Of Online Learners With Different Background

Hypothesis 2 was not accepted because none of the variables related to students' background affected their needs of online learners. There were no statistically significant differences at .05 level found in students' needs of online learners as classified by gender, computer ownership, and monthly allowance. The overall mean score of male students ($\overline{X}$ = 3.58) was lower than that of female students ($\overline{X}$ = 3.64). Both groups had needs at a moderate level. Due to the results obtained from the application of the t-test, it was found that there was no statistically significant difference found in overall needs of online learners between two groups (male and female) at level of .05. This means that male and female students were not different in having needs.

The overall mean score of students who owned a computer was higher than that of students who didn't own a computer ($\overline{X}$ = 3.63, 3.30). Both groups had needs at a moderate level. The t-test was employed to examine the significant difference between students who owned a computer and those who didn't own a computer on their needs.

It was found that there was no statistically significant difference found in needs of online learners between two groups at level of .05.

This means students who owned a computer and those who didn't own a computer were not different in having needs.

The results obtained from applying the ANOVA revealed that no difference in overall needs among three groups of monthly allowance (less than 3,500 baht; 3,501-5,000 baht; and more than 5,000 baht) was found statistically significant at .05 level. This means that allowance received from parents per month had no impact on needs of online learners.

Hypothesis 3 Investigated The Relationship Among Computer Aptitude, Barriers and Needs of Online Learners

The Pearson product-moment correlation coefficient test was used to find out whether there was a statistically significant relationship between computer aptitude and barriers of online learners. This hypothesis was accepted. Table: 6 show that there was a negative relationship between computer aptitude and barriers of online learners at .01 level. In other words, students with high computer aptitude had fewer barriers to learn online than those with low computer aptitude.

Table: 6
Correlate Results for the Computer Aptitude and Barriers of Online Learners

VARIABLE	Computer Aptitude	Barriers
Computer Aptitude	1.00	
Barriers	-.21**	1.00

** P < .01

In addition, the Pearson product-moment correlation coefficient test was used to find out whether there was a statistically significant relationship between barriers and needs of online learners. This hypothesis was accepted.

Table: 7 shows that there was a positive relationship between barriers and needs of online learners at .01 level. In other words, students with more barriers had more needs to help them to learn online than those with few barriers.

Table: 7
Correlate Results for the Barriers and Needs of Online Learners

VARIABLE	Barriers	Needs
Barriers	1.00	
Needs	.23**	1.00

** P < .01

DISCUSSION AND CONCLUSIONS

This article reports responses to a survey of online learners at the undergraduate level. The study provides valuable information for administrators and faculty to consider as they wrestle with on-line delivery issues such as barriers and needs of online learners who study English via WebEx system. The findings of this study can help them identify and address implementation issues related to on-line course delivery.

The study revealed that the level of barriers of online learners in general was moderate. There were no statistically significant differences at .05 level found in barriers of online learners as classified by gender, computer ownership, and monthly allowance. Learners' personal problems were low. The participants in this study had similar problems. They did not have trouble with the cost of Internet. They had adequate computer skills, internet skills and understanding of WebEx system. Nevertheless, their computer aptitude in general was just moderate; skills needed for online learning such as software, hardware and typing skills were at a moderate level. Thus, administrators together with instructors should give more knowledge about online learning skills; additional tutorial classes may assist students in learning online.

WebEx system provides students with the opportunities to learn from anywhere and to experience new learning environment. However, the problems with learning via this system were high. The students had problems with the internet connection, so it was not convenient for them to communicate with teachers and classmates via WebEx. The most frustrating problem was that of the Internet being down, on either the student's or the instructor's end. They also thought that this system was rather complex and not attractive.

The design of study materials for distance students can influence online learners' motivation. In an online learning class, it can be hard to keep students involved because they are so isolated. If instructors don't make a special effort to engage students in the class, students can lose interest quickly. In order to encourage students to adopt online instruction, administrators need to develop the Internet connection and simplify the system. They should support faculty to improve online instruction and encourage them to make the teaching content more attractive.

The results of this research also revealed that the level of needs of online learners in general was moderate. There were no statistically significant differences at .05 level found in students' needs of online learners as classified by gender, computer ownership, and monthly allowance. No variety of views emerged concerning online learning needs. According to the students' opinions, they did not need workshops on online learning because they had adequate knowledge about the system. They required more attractive and simpler learning system as well as more facilities for online learning provided by the university. If distance learning institutions are serious about providing quality online education, they should stress the importance of these issues. Online education can overcome some traditional barriers related to time and place. Many users like new educational technologies and see continued growth in the area. However, several barriers to meeting online learning needs may emerge. Among these are a lack of internet connection and a perception that online education is too impersonal, and a lack of perception of need. All of these lead to a lower quality of online education being offered. Administrators can help overcome some of these barriers if they advertise and promote online offerings using a variety of techniques to ensure both high quality and personal interaction in the online learning experience.

In this study, the variables like gender, computer ownership and monthly allowance did not affect online learners' barriers and needs. However, the finding revealed that students with high computer aptitude had fewer barriers to learn online than those with low computer aptitude. Also, students with more barriers had more needs to help them to learn online than those with few barriers.

Consequently, potential providers of online technology education should take advantage of the perceived need to facilitate a wide variety of learner needs and capabilities.
In the future, many educational institutions may play to use WebEx or other online learning technologies for offsite students. Planning instruction using a new delivery method should be informed by the perceived needs and preferences of the target population. Providers of distance learning can take the above information into consideration when preparing an online course.

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