

The Effect of Online Language Learning on the English Achievement of First-Year Undergraduate Students

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Abstract: *The purposes of this research study were (1) to examine the effects of utilizing online language multimedia reading modules on improving BUU students' English reading comprehension skills, (2) to explore BUU students' attitudes and motivation toward online language learning, (3) to compare the effectiveness of online language instruction with that of the traditional classroom teaching methods which combine lectures with print-based reading activities, and (4) to examine the correlation between BUU students' achievement and their attitudes and motivation toward online language learning. This research study was a quasi-experimental research design. The population of the research study was approximately one thousand first-year undergraduate students registering for the English III course. Subjects were selected from this population and assigned to two groups. The experimental group was taught in mixed mode including online self-access learning. The control group was taught by using a traditional lecture and private reading approach.*

The results of this research study can be summarized as follows:

1. The analysis of the data using quantitative and qualitative approaches indicated an obvious improvement in reading comprehension skills among the experimental group students using the online language multimedia reading modules.

2. The experimental group students especially enjoyed listening to a native speaker's voice reading the passages, the vivid animation, and the edutainment activities used in the modules. These led to students accessing the online language multimedia reading modules repeatedly, thus improving not only their reading skills but their listening and speaking skills as well.

3. When comparing the effectiveness of online language instruction with that of the traditional classroom teaching methods, the analysis concluded that:

3.1 The post-learning mean scores of students in the experimental group using the online language multimedia reading modules were higher than those of the students in the control group.

3.2 The post-learning achievement scores of the experimental group as compared to those of the control group differed at the .001 level of statistical significance.

4. For the correlation coefficients among learning achievement, attitudes, and motivation toward online English language learning, the following conclusions were drawn:

4.1 Attitude had a statistically significant correlation with motivation.

4.2 Midterm exam scores had a statistically significant correlation with both the final exam scores and student grade point average (GPA).

4.3 Final exam scores had a statistically significant correlation with grade point average (GPA).

Keywords: online language learning, computer-assisted language learning, technology-enhanced language learning

Introduction

Thailand is currently in an era of accelerated people-centered development. The Thai government's Ninth National Economic and Social Development Plan (2002-2006) advocates that the Thai people must be aware of the necessity of changing ideas, attitudes, and work processes to be consistent with changing administrative systems aiming at efficiency, quality and modernization, and proposes that people should be able to efficiently utilize knowledge and technology, as well as being flexible in adapting to the changes of the globalization era.

These policy priorities correspond with the Thai National Education Act of 1999 and 2002 emphasizing educational reform, especially in teaching and learning processes. The Act resulted in increased motivation and enhanced professional development among instructors. The Act also led to the current policies developed by the Ministry of University Affairs (MUA) (the Ministry of Education, Higher Education Office), which aims to ensure that the educational provision among public and private universities will not only be of high quality that meets international standards, but also will produce qualified graduates to meet the market's demands.

Furthermore, the policy of the Ministry of University Affairs (the Ministry of Education, Higher Education Office) is to encourage public higher education institutions to evolve into autonomous universities. This will be accomplished by a reorganization (decentralization) of how individual universities are administered and financed. The objective is to ensure efficiency, effectiveness and flexibility in management leading to educational excellence by constructing bodies of knowledge in order to produce human resources with higher potential and competence to compete (The Office of the Permanent Secretary, Ministry of University Affairs, 1998, p. 20).

As a result, Burapha University (BUU) has become an autonomous university (neither a public university nor a state enterprise) in line with this government policy. This change has resulted in increased competition among universities in Thailand, with students preferring to study in a university that is perceived to have high quality in teaching and learning methodologies. This has motivated BUU instructors to improve their teaching approaches and strategies through professional development.

To achieve the above-mentioned goals, educational reform has resulted in changes in instructional methods, as instructors have searched for innovations to incorporate in their teaching and learning, especially those which relate to the use of modern technology in English language teaching and learning. This trend is consistent with recent research that has shown that technologies can be employed to improve teaching and learning (Lockheed & Middleton, 1991, cited in Beckwith, 2001). Additionally, technology-assisted instruction results in changes in both instructors' and students' roles. Students become more responsible for their own learning, performing individual or group activities with a technology-assisted

lesson, whereas the instructor, as a facilitator, becomes a resource specialist observing the learning process (Willetts, 1992).

From the research, it could be envisaged that online language learning with multimedia integrated into classroom language instruction may be beneficially utilized at Burapha University (BUU), where every year approximately more than ten thousand incoming students study English with only a small number of instructors and class sizes of more than sixty students on average. Additionally, most of the students come from rural areas upcountry where English media are rarely available for them to practise. Because of the high instructor - student ratio, it is more convenient for most BUU English instructors to lecture such large classes in order to deliver the content of English III. It is likely that this ratio will increase in the future because of envisaged growth in university places concurrently with the manpower reduction policy of the Thai government.

To cope with these circumstances, there are several reasons why online language learning is appropriate for Burapha University. First, instructors can implement new approaches for stimulating and reinforcing learning (Isackson, 1999), which partially replace face-to-face large classroom instruction. Secondly, students may feel less pressure in online language learning environments than in more traditional lectures because they can access the Internet wherever and whenever they choose, such as in the library or in the computer lab. Also, because students are studying independently, they will not feel so sensitive about making mistakes. Next, teachers can use online instruction to change from a teacher-centered to a more student-centered learning environment resulting in self-motivated learning among students, thus enhancing their individual capacity to learn (Porter, 1997). Finally, online learning can employ synchronous conferencing communication (in which all learners participate at the same time) and asynchronous communication (in which learners participate at different times) through online discussions which can encourage interactive collaborative learning. Therefore, the advance of new technology would appear to have the potential to support learning and lead to positive improvement in the teaching and learning of English as a foreign language.

Even though online learning is increasing, research on the effectiveness of mixed mode instruction, defined as a combination of face-to-face and online instruction (blended instruction), on student outcomes is comparatively scarce (Moore, 1989; Navarro & Shoemaker, 1999; Schulman & Sims, 1999 cited in Ratcliff, 2001, p. 25; Teeler & Gray, 2000). As a consequence, it would seem appropriate to conduct research on creating online language multimedia reading modules uploaded onto the Internet to assist students in self-access learning as a supplement to a foundation English course (English III).

Purposes of the Study

The aim of this study is to determine how effective a mixed mode approach incorporating online language learning will be for teaching reading comprehension to students in English III in comparison with the traditional teaching methods. The objectives of this study are: (1) to examine the effects of utilizing online language multimedia reading modules on improving BUU students' English reading comprehension skills, (2) to explore BUU students' attitudes and motivation toward online language learning, (3) to compare the effectiveness of online language instruction with that of the traditional classroom teaching methods which combine

lectures with print-based reading activities, and (4) to examine the correlation between BUU students' achievement and their attitudes and motivation toward online language learning.

Research Questions

This study addresses four main research questions: (1) To what extent will the implementation of online language multimedia reading modules improve BUU students' English reading comprehension skills? (2) How do online language multimedia reading modules affect BUU students' attitudes and motivation toward English language learning? (3) To what extent does using a mixed mode approach (lectures integrated with online language multimedia reading modules) result in better learning achievement than using traditional classroom teaching methods (lectures integrated with print-based reading activities)? (4) To what extent are there correlations among the students' achievement, attitudes, and motivation toward online language learning?

Literature Review

Online Learning

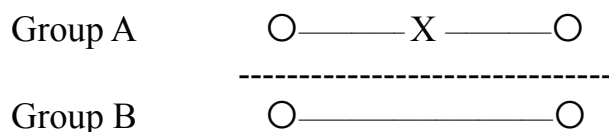
Online learning is an alternative for use in the foreign language classroom. It operates within a student-centered, constructivist paradigm to provide the opportunity for developing English language skills with new teaching and learning technological media (Porter, 1997). Online learning has the capacity to provide flexibility and convenience for learners, as well as hands-on experience using information technologies for learners. Within online environments, students can experience learning in some different modes, such as supplementary mode (face-to-face session with only supplementary online materials), mixed mode (face-to-face sessions and activities online as part of the course including online participation requirement), and online mode (no face-to-face sessions) (CEDS, 2002).

From a review of the selected studies, it appears that utilizing online learning as a teaching methodology has yielded mixed results. This depends on various factors. One of the most crucial elements is that English language instructors must have sufficient skills to implement online learning blended with multimedia technology for students' self access learning in order to improve English language teaching and learning strategies effectively.

Research Methodology

Research Design

This research study was based on a pretest-posttest control-group quasi-experimental research design (Creswell, 2003; McMillan, 2000; McMillan & Schumacher, 1997; Nunan, 1992; Seliger & Shohamy, 1989). Additionally, both quantitative and qualitative data collections were used to investigate the impact of the online language multimedia reading modules on BUU students' learning. In this design, an experimental group and a control group were selected by means of purposive sampling. Both groups took a pretest and a posttest. Only the experimental group received the treatment (Creswell, 2003, p. 169). (See the following diagram.)



Population and Sample

The population of the research study was approximately one thousand first-year undergraduate students registering for the English III course in the second semester at Burapha University. The samples were sixty-three students who were purposively selected from this population. The selected students were assigned to two groups. The experimental group was comprised of forty-two students who were taught in mixed mode including online self-access learning. The control group was comprised of twenty-one students who were taught by using a traditional lecture and private reading approach. Both groups were taught English III by the same instructor. The researcher was an instructor assisting with both the online language implementation and private reading sessions. Participants in the experimental group were observed for participation and learning process. Additionally, the students who participated in self-accessing online language learning were interviewed after completing online reading modules. After self-accessing and completing the online language multimedia reading modules, a questionnaire regarding attitudes and motivation toward online language learning was completed by the experimental group subjects in order to examine how the online language reading modules influenced their learning.

The online learning materials all have a focus on reading comprehension as this is the main focus of the course description of English III. Students wishing to develop other skill areas can choose 'Oral English Practice' and 'Writing 1' as elective courses.

Research Instruments

Research instruments used for evaluating participants' achievements were as follows:

1. online language multimedia reading modules
2. pretest, and posttest of reading comprehension
3. midterm and final examinations for English III
4. questionnaires regarding attitudes and motivation toward online language learning
5. interview

Results of the Study

Results of the Data Analysis

Research Question 1: To what extent will the implementation of online language multimedia reading modules improve BUU students' English reading comprehension skills and achievement?

To respond to research question 1, a dependent-samples t-test was employed as a data analysis procedure in order to investigate the outcomes of utilizing the online language multimedia reading modules on improving BUU students' English reading comprehension skills and achievement. The overall mean and standard deviation of the pretest and posttest are shown in Table 1.

Table 1 Comparison of the pre- and post-learning mean scores of the experimental group

Experimental Group	\bar{X}	SD	t	p
Pre-learning (pretest)	25.98	4.926	8.259***	.000
Post-learning (posttest)	32.55	3.270		

*** There is statistical significance at the .001 level.

Table 1 indicated that the posttest mean score of the experimental group was higher than the pretest mean score at the .001 level of statistical significance. This pointed out that online language multimedia reading modules supplementing lessons helped to improve BUU first-year undergraduate students' English reading comprehension skills.

Research Question 2: How do online language multimedia reading modules affect BUU students' attitudes and motivation toward online language learning?

To respond to research question 2, a questionnaire was given to the experimental group students after they had practiced online English language multimedia reading modules so as to explore their attitudes and motivation toward online language learning. Then, the researcher analyzed the data to find the mean (\bar{X}) and standard deviation (SD).

To interpret the results from the questionnaire, the researcher utilized the following criteria:

- 4.50 – 5.00 means strongly agree
- 3.50 – 4.49 means agree
- 2.50 – 3.49 means neutral
- 1.50 – 2.49 means disagree
- 1.00 – 1.49 means strongly disagree

Results of studying attitudes and motivation toward online English language learning utilizing online language multimedia reading modules were shown in Table 2.

Table 2 Mean scores and standard deviations of attitude and motivation scores toward online English language learning of students in the experimental group

Items	N = 42		Level
	\bar{X}	SD	
1. Acceptance of Usefulness of Online English Language Learning	3.65	.37	agree
2. Opinions about Online English Language Learning	3.95	.57	agree
3. Total Attitudes	3.83	.46	agree
4. Motivation of Online English Language Learning	3.88	.49	agree

Table 2 indicated that BUU first-year undergraduate students' attitudes toward online English language learning and achievement motivation were at an agreeable level.

Research Question 3: To what extent does using a mixed mode approach (lectures integrated with online language multimedia reading modules) result in better learning achievement than using traditional classroom teaching methods (lectures integrated with print-based reading activities)?

To respond to research question 3, an independent-samples t-test and ANCOVA were employed to find the difference of means in order to compare the effectiveness of online

language instruction (a mixed mode approach of lectures integrated with online language multimedia reading modules) with that of the more traditional classroom teaching methods which combine lectures with print-based reading activities. The mean scores and standard deviations were presented in Table 3.

Table 3 Mean scores and standard deviations of BUU students' English achievement exams

Condition	Experimental Group		Control Group	
	\bar{X}	SD	\bar{X}	SD
Pre-learning	25.98	4.92	22.05	6.53
Post-learning	32.55	3.27	27.24	5.01

From Table 3, BUU students in the experimental group who studied with online language multimedia reading modules supplementing lectures had the pre-learning mean score of 25.98 and the post-learning mean score of 32.55. Whereas BUU students in the control group who studied with print-based reading activities supplementing lectures had the pre-learning mean score of 22.05 and the post-learning mean score of 27.24.

Table 4 Covariant analysis (ANCOVA) of exam scores after learning English III that has pre-learning scores as covariates variable which varied according to teaching methodologies

Covariant Source	df	SS	MS	F	p
Pre-learning scores (pretest)	1	193.717	193.717	15.528***	.000
Teaching methodologies	1	204.334	204.334	16.380	.000
	60	748.498	12.475		
Total	62	1146.549	410.526		

*** $p < .001$

From Table 4, the results of covariant analysis of all English exam scores after learning indicated that pre-learning exam scores (pretest) that were used as covariates variable resulted in learning achievement scores with statistical significance at the .001 level ($p < .001$). Post-learning achievement scores (midterm exam, final exam, and posttest) earned from teaching methodologies with online language multimedia reading modules supplementing lectures as compared to those from teaching methodologies with print-based reading activities supplementing lectures differed at the .001 level of statistical significance ($p < .001$).

Research Question 4: To what extent are there correlations among the students' achievement, attitudes, and motivation toward online language learning?

To respond to research question 4, a simple correlation was utilized to examine the correlation between BUU students' achievement and their attitudes and motivation toward online language learning as mentioned in Table 5.

Results of studying the correlation between BUU students' learning achievement, attitudes and motivation toward online English language learning were presented in Table 5.

Table 5 The matrix of the correlation coefficients among learning achievement, attitudes, and motivation toward online English language learning

Variable	Attitude	Motivation	Midterm exam scores	Final exam scores	GPA
Attitude	1.00	.644**	.123	-.170	-.127
Motivation		1.00	.067	-.211	-.184
Midterm exam scores			1.00	.590**	.814**
Final exam scores				1.00	.898**
GPA					1.00

Table 5 indicated that the matrix of the correlation coefficients among learning achievement, attitudes, and motivation toward online English language learning showed a range from -.211 to .898. This signified that attitude had a positive correlation with motivation at the .01 level of statistical significance ($r = .644^{**}$), and midterm exam scores had a positive correlation at the .01 level of statistical significance with final exam scores and grade point average (GPA) ($r = .590^{**}$ and $.814^{**}$ consecutively). In addition, final exam scores had a positive correlation with grade point average (GPA) at the .01 level of statistical significance ($r = .898^{**}$).

Conclusions

Using computer online for learning language is a relatively new concept. This research study was undertaken to add to the body of current research on the effectiveness of online teaching materials in the learning of English as a Foreign Language. The specific focus was on the use of online language multimedia reading modules to improve the reading comprehension of university level students of English.

Based on this research, it was concluded that online language multimedia reading modules can be utilized as effective instructional materials because they contribute to the improvement of not only BUU students' reading comprehension skills, but also their listening and speaking skills. In addition, positive attitudes and motivation, which play an important role in foreign language acquisition, can be realized through online language learning.

Discussion

For the purposes of discussion, it is sensible to review the study's outcomes by referencing the findings relevant to each of the four research questions. Rational discussion is provided according to the findings which are arranged in order of the responses of the research questions.

The first research question was as follows: To what extent will the implementation of online language multimedia reading modules improve BUU students' English reading comprehension skills?

The findings revealed that the online language multimedia reading modules helped to improve the experimental group students' English reading comprehension skills because online English language multimedia reading modules are positive and interesting innovations

that consist of various activities, such as edutainment, etc. Furthermore, BUU students can practise by themselves independently and have better concentration. Also, BUU students can listen to a native speaker's voice and learn repeatedly because listening to a native speaker's voice (pronunciation, intonation, and accent) repeatedly results in being able to practise speaking, thereby absorbing knowledge of the English language and understanding more English language. The more they practised, the more knowledge and understanding they acquired. Therefore, the online English language multimedia reading modules helped to develop better English reading comprehension skills.

This study supports the assertion by Jonassen, Peck, and Wilson, (1999) that providing information for students by using multimedia technologies has the capacity to make the contents more interesting and more understandable. Additionally, Krashen (1981) argued that students with high motivation, self-confidence, and low level of anxiety achieve much more success in second language acquisition. Moreover, Son (1998) showed the effectiveness of computer-assisted language learning in the teaching and learning of reading. Furthermore, Lynch, Fawcett, and Nicolson (2000) examined a supplemental computer-based reading program. They discovered that the software application enhanced motivation, self-esteem, and self-regulation. They also affirmed that the software was effective in leading to noticeable achievement. Finally, and most significantly, Eskey (2005) was right when he said no human reader is like another. Reading ability is a function of both linguistic processing by the brain and by individual human experience.

The second research question was: How do online language multimedia reading modules affect BUU students' attitudes and motivation toward online language learning?

The findings showed that subjects in the experimental group had better attitudes and motivation toward online language multimedia reading modules because BUU students felt satisfied with the changing atmosphere while studying the reading modules independently. They also felt that the reading modules were enjoyable and entertaining. Additionally, the reading modules were convenient for self-access learning. Furthermore, the online language multimedia reading modules provided immediate feedback, including animations, colourful images, and a native speaker's voice, etc. These features helped stimulate the students to be more interested in the learning, and they reinforced English learning.

These findings are consistent with other research studies. For example, Lin's research (2002) indicated that the students had superior motivation and positive attitudes toward computer-assisted language learning, and that English grades were significantly correlated with the students' computer experience. The more students used computers for learning English reading and writing, the higher their English grades were. In addition, Trinder's (2002) study revealed that the use of online support tools can increase learner motivation and learning. Correspondingly, motivation can be a significant effect of multimedia language learning (Bush & Terry, 1997). Furthermore, motivation is the most important factor in successful foreign language acquisition (Lightbown & Spada, 1993).

Numerous researchers in EFL disciplines have affirmed that good motivation has a positive influence on foreign language learning (Gencilter, 2009). Also, in Akbulut's (2008) research study, findings indicated that students had positive attitudes towards computer-assisted language learning (CALL) due to the capacity of computers to assist independent learning, cooperation, and communication. Likewise, in Al Shammari's (2007) research study, it was concluded that EFL learners' attitudes toward computer-assisted language

learning and the software were positive. Additionally, Shih (2000) indicated how Taiwanese ESL learners' experiences of individualized online learning from United States partners developed positive attitudes toward online ESL acquisition. Further, in Almahboub's (2000) research, the findings revealed positive attitudes toward computer application. Moreover, Ireson (1997), in a study of students' attitudes toward computer-assisted instruction at a 2-year college, found that students maintained positive attitudes toward using computers, judged that computer-assisted instruction was advantageous, and that computer skills were transferable to the workplace. In addition, Liu (1996) explored the attitudes toward computers of Chinese students at American University. The study indicated that Chinese students' attitudes were positive. Nevertheless, significant differences in attitude were perceived among the Chinese students who had more computer experience. In conclusion, the use of computers, especially online language learning can enhance both motivation and attitude of learners.

The third research question was: To what extent does using a mixed mode approach (lectures integrated with online language multimedia reading modules) result in better learning achievement than using traditional classroom teaching methods (lectures integrated with print-based reading activities)?

The finding pointed out that the mean scores of the English achievement exams showed that the students in the experimental groups who studied with online language multimedia reading modules supplementing lectures scored higher than those who learned in the traditional method with print-based reading activities.

This finding is consistent with a great deal of earlier research. For instance, in O' Charoen's (2002) research, the experimental (computer tutorial) group accomplished significantly higher score improvement than the control (lecture) group. The outcome indicated that the ToolTRAIN interactive multimedia tutorial program was an effectual teaching approach for modular fixturing design concepts.

The experimental group's achievement was higher than that of the control group's due to the fact that the experimental group had higher positive satisfaction levels regarding studying online language multimedia reading modules that contain various activities, such as edutainment, etc. including colourful animations and images and a native speaker's voice that students can listen to as many times as they like. While reading the modules, the students can listen to a native speaker's voice, thus understanding the reading modules better. Listening to a native speaker's voice as often as they like results in improving their speaking ability. Practising reading, listening and speaking as many times as they choose makes students absorb knowledge and more understanding, thereby resulting in more achievement according to the students' response to interview questions. The more often students accessed the online language multimedia reading modules, the higher their achievement scores were (according to the evaluation that computer records).

According to Perras (2009), students can listen to the reading passages while they read them. As a result, students can better understand them. Furthermore, students need to be able to listen before they can speak, and students also need to be able to read well before they can write well. However, to communicate, an average communicator in English utilizes some skills more frequently than others. For instance, approximately 40% of the time the communicator spends communicating, he / she is only listening. The communicator speaks

for approximately 35% of the time. Approximately 16% of communication derives from reading, and about 9% from writing (Englishclub.com).

The fourth research question was: To what extent are there correlations among the students' achievement, attitudes, and motivation toward online language learning?

The findings indicated that the experimental group had high positive attitudes toward online language multimedia reading modules regarding various activities, such as edutainment, and satisfaction to practice them. Attitudes correlate with motivation in that good attitudes cause learners to have more motivation to study. Moreover, a lot of research indicated that motivation influenced achievement in foreign language learning (Lightbown & Spada, 1993).

All in all, online language learning operates within a student-centered, constructivist paradigm to provide the opportunity for developing English language skills with new teaching and learning technological media (Porter, 1997).

Recommendations for Further Research Study

Based on this research, the following recommendations for further research studies on online language learning are proposed as follows:

This research study focused on creating online language multimedia reading modules for using in reading skills. There should be online language multimedia writing modules (for writing skills), and online language multimedia listening and speaking modules (for listening and speaking skills) in further research study.

From a theoretical perspective, different educational theories and instructional designs proposed by other theorists other than Gagne's nine instructional events, which were used in this research, should be considered applying to future research studies on online language learning.

There should be case studies in other subject areas regarding online learning in order to acquire data on the outcomes of learning and how learning occurs when studying online in future research.

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