

THE DEVELOPMENT OF BLENDED E-LEARNING USING MOODLE'S LMS FOR EFL GRAMMATICAL AND WRITING INSTRUCTION FOR FIRST-YEAR STUDENTS IN THE ENGLISH MAJOR

Wiruch Pumjarean¹,
Patcharee Muangnakin²,
Ampapan Tuntinakhongul³

ABSTRACT

This study is a quasi-experimental design using one group of research participants; blended e-Learning for studying English grammar and paragraph writing was implemented for a semester at an academic institution of Higher Education in Thailand. The study aimed at examining the effects of blended e-Learning on the English grammatical knowledge and writing skills of first-year students in the English major. Furthermore, it investigated the students' perceived satisfaction with Moodle's LMS and the usefulness of blended e-Learning for improving grammatical knowledge and paragraph writing skills. Multiple-choice pretest and posttest were utilized to measure English grammatical knowledge (Cronbach's alpha = 0.7), and pretest and posttest on written exam were employed to assess improvement in paragraph writing skills. In addition, a questionnaire was used to investigate the students' perceived satisfaction. The study found that the students significantly increased their knowledge of English grammar as the group's posttest mean score was significantly higher than the pretest mean score, and the t-value was 4.87 at the significant level 0.05 ($p < 0.05$). Moreover, the students significantly improved their paragraph writing skills as the group's mean posttest score on paragraph writing was significantly higher than the pretest mean score, and the t-value was 5.33 at the significant level 0.05 ($p < 0.05$). However, the students' perceived satisfaction levels were neutral. The current study has provided empirical findings to help ensure that Moodle's LMS is a feasible and cost-effective educational technology for developing EFL students' grammar and writing skills in a blended-eLearning environment.

Key words: Blended e-Learning, English as a Foreign Language, grammar instruction, writing instruction

Introduction

In the past decade, Thailand has aspired to use information technology to create a knowledge-based society and to support life-long learning (Tananuraksakul, 2016). Therefore, many institutions of Higher Education have invested in e-Learning technologies expecting them to support the achievements of their educational goals. e-Learning can be broadly defined as the applications of the computer network or information technologies used to deliver contents via electronic media for educational purposes (Liaw & Huang, 2013). e-Learning also encompass instruction deliberately delivered through the electronic media, for example the Internet, Intranet, web-based learning, hypertext/hypermedia documents on the web, and online learning (Moore, Dickenson-Deane, & Galyen, 2011). e-Learning systems can offer learners with flexibility to choose their convenient time and place to learn according to their interest and learning pace (Pituch & Lee, 2006; Moore, Dickenson-Deane, & Galyen, 2011).

Research on English as a Foreign Language (EFL) education in Thai contexts have found that e-Learning and blended e-Learning using the Course Management System (CMS) or the Learning Management System (LMS) equipped with communication tools could help Thai university students increase motivation to learn, improve attitude toward learning, develop learner autonomy, and take more responsibilities to execute their learning plans (Chansamrong, Tubsree & Kiratibodee, 2014; Dennis, 2012; Snodin, 2013; Sucaromana, 2013; Tananuraksakul, 2016). In addition, research has found that blended e-Learning could help Thai university students improve their English knowledge and skills i.e. grammar (Chansamrong, Tubsree & Kiratibodee, 2014), listening and vocabulary (Dennis, 2012), and English academic writing (Ferriman, 2013).

Despite the potential benefits of e-Learning, there exist some obstacles that could discourage a broad range of e-Learning adoptions and applications, allowing e-Learning in formal education in Thailand to grow slowly. Research has revealed that e-Learning at many universities in Thailand lack a strong commitment and support from top executives, e-Learning software and facilities, technical skills for online courses, financial support, and awareness (Saekow & Samson, 2011). A survey on the information technology used for EFL education in Higher Education reflects similar problems. Although instructors appear to have a positive attitude toward technology uses, there are critical drawbacks which include inadequate ICT infrastructure, insufficient technical support, non proficient ICT skills, and hesitance to adopt technology (Deerajviset & Harbon, 2014).

¹Support Staff, Faculty of Liberal Arts, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand

²Instructor, Assist. Prof., Ph.D., Faculty of Liberal Arts, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand

³Instructor, Ph.D., College of Educational Innovation Research, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand

Moreover, research has reported that Thai university students appear to have slightly positive opinions about online learning and they are not accustomed to using collaborative e-Learning tools (Deerajviset & Harbon, 2014; Ngampornchai & Adams, 2016; Teo, Thammetar & Chattiwat, 2011). In summary, research has uncovered that e-Learning in the country still faces limitations in policy, administration, and standard; furthermore, it has suggested that the traditional approach to learning and instruction needs to be adjusted in order to accommodate educational technologies and to embrace self-directed and student-centered learning in the e-Learning environment (Ngampornchai & Adams, 2016).

The e-Learning situation for EFL education at King Mongkut's Institute of Technology Ladkrabang in Thailand is still in its infancy stage and reflects the aforementioned e-Learning problems. With a limited budget and lack of e-Learning facilities, Moodle, which is believed to be a free and user-friendly e-Learning platform with LMS, has been selected as a feasible technological tool that would help us attain our educational goals. Nonetheless, research on e-Learning, blended e-Learning, and student's adoption of e-Learning in Thailand has been inadequate to confirm the advantages of Moodle's LMS for supporting EFL grammatical and writing instruction in a blended e-Learning environment. Therefore, the following research objectives and research questions were established:

Research Objectives

- 1) To measure the effectiveness of blended e-Learning that uses Moodle's LMS for improving the grammatical knowledge of first-year students in the English major.
- 2) To measure the effectiveness of blended e-Learning that uses Moodle's LMS for improving the writing skills of first-year students in the English major.
- 3) To examine the perceived satisfaction levels of first-year students in the English major with blended e-Learning that uses Moodle's LMS.

Research Questions

1. Does blended e-Learning that uses Moodle's LMS help first-year students in the English major improve their knowledge of English grammar?
2. Does blended e-Learning that uses Moodle's LMS help first-year students in the English major improve their paragraph writing skills?
3. What are the perceived satisfaction levels of first-year students in the English major with blended e-Learning that uses Moodle's LMS?

LITERATURE REVIEW

Technologies for ESL and EFL education

The types of technology employed to facilitate English as a Second Language (ESL) and English as a Foreign Language (EFL) learning often include a range of multimedia (audio, video, animation, hypermedia), web (web-based, web search, web publishing), computer-mediated communication (CMC: e-mail, chat, newsgroup, discussion forum, blog, videoconferencing), web 2.0 (wiki, blog, social tagging), mobiles (text messaging, mobile peer-assisted learning, virtual world), E-books, games, etc. (Miyazoe & Anderson, 2010). More recently, the advents of e-Learning platforms with the Learning Management System (LMS), also known as Course Management System (CMS), such as Blackboard, WEBCT, and Moodle, have been utilized to facilitate the achievements of ESL and EFL educational goals as they offer a variety of instructional instruments and communication tools for instructors to manage courses and for learners to monitor their own learning (Ferriman, 2013; Snodin, 2013).

Literature on Second Language (L2) Acquisition suggests that Computer Assisted Language Learning (CALL, and in the current research it refers to e-Learning) could help learners notice linguistic aspects of the target language and construct their comprehension of its linguistic system (Chapelle, 1998). Therefore, CALL should make relevant linguistic features of the target language input salient and should provide learners with essential assistance for understanding semantic and syntactic characteristics of language input (Li & Hegelheimer, 2013). To support L2 acquisition, CALL can make necessary modifications of the target language input via the methods of simplifying, repeating, decreasing speed, changing input mode, providing references, etc., in order to create comprehensible input that helps learners acquire knowledge of the target language (Chapelle, 1998). In essence, instruction in multimedia and e-Lessons that promote grammatical acquisition should relate L2 Acquisition to deductive and inductive teaching techniques and learning (Chapelle, 1998). Subsequently, learners should be encouraged to produce L2 language output in the CALL environment by using the syntactic knowledge that they have acquired to produce the target language output and to do some relevant tasks or activities (Chapelle, 1998).

Creating Blended e-Learning with Moodle's LMS for EFL Education

Blended e-Learning has emerged as a promising method for delivering efficient and effective instruction (Banados, 2016; Escoba & Rodriguez, 2012; Wu, Tennyson & Hsia, 2010). To create a blended e-Learning system, lecture-based instruction in a traditional classroom can be integrated with a variety of technologies such as LMS, web-based learning, wiki, forum, and blog to enrich traditional instruction and support interaction and collaboration among learners (Escoba & Rodriguez, 2012; Miyazoe & Anderson, 2010; Rymanova, Baryshnikov & Grishaeva, 2015). Moodle has the feasible, free, and easy-to-use LMS that can provide advantages for blended e-Learning for ESL and EFL education that focuses on encouraging learners to work independently and collaboratively with other learners because it has been designed to support the socio-constructivist pedagogy (Dougiamas, 2010; Rymanova, Baryshnikov & Grishaeva, 2015).

Moodle's LMS is equipped with functions and features for instructional and learning management, information guidance, interaction, and assessment that can help instructors accomplish their pedagogical objectives (Escoba & Rodriguez, 2012;

Rymanova, Baryshnikov & Grishaeva, 2015). The LMS contains a wide range of e-Learning tools, activities, and resources, including site management, course management, user management, enrollment, role, course report, overall activity report, lesson module, resource module, quiz module, assignment module, forum, glossary, wiki, blog, messaging, integration with other systems, etc. These tools could be easily customized for institutional and individual needs (Dougiamas, 2010; Escoba & Rodriguez, 2012; Gogan, Sirbu & Draghici, 2014; Rymanova, Baryshnikov & Grishaeva, 2015).

Furthermore, Moodle's LMS allows instructors to incorporate a variety of internal and external learning sources in their courses (Gogan, Sirbu & Draghici, 2014; Rymanova, Baryshnikov & Grishaeva, 2015). Instructors can conveniently orchestrate learning activities, easily organize pedagogical resources into clear sequences and vivid categories, and then assist learners to learn and collaborate with other learners in the learning process (Escobar-Rodriguez & Monge-Lozana, 2012; Liaw, 2008). The e-Learning mechanism can allow instructors to guide students through a systematic learning path designed to achieve intended pedagogical objectives, and it can help instructors build a dynamic community of learners (Gogan, Sirbu & Draghici, 2014; Rymanova, Baryshnikov & Grishaeva, 2015). Individual learners can be persuaded to choose resources to study according to their learning needs and learning paces (Escoba & Rodriguez, 2012; Rymanova, Baryshnikov & Grishaeva, 2015). With the LMS, learners can oversee their learning progress and then they will exert more effort to make improvements. Essentially, e-Learning can offer learners with flexibility to choose their convenient time and place to learn according to their interest and learning pace (Pituch & Lee, 2006; Moore, Dickenson-Deane, & Galyen, 2011).

Moodle can serve the writing pedagogy that focuses on the process approach which usually centers on prewriting, revising, editing, and reflexive learning activities (Dougiamas, 2010). For instance, student writers can work with their group to brainstorm ideas in the pre-writing session, receive feedback on their writings in the revising stage, and submit their final drafts for grading. Furthermore, using the available tools in Moodle's LMS, the instructor can teach specific grammar and vocabulary topics in order to meet the needs of students.

Robertson (2008) integrated Moodle's LMS into his process writing pedagogy for EFL college students in Japan focusing on project-based writing assignments. The study reported that Moodle offered flexibility for the instructor to organize and deliver course materials and provide opportunities for the students to independently utilize the learning resources. In addition, Moodle encouraged cooperative and reflexive learning which is crucial to the writing process. The study also employed quizzes which could support self-learning and self-evaluation of grammar, punctuation, and vocabulary. It was anticipated that the students would transfer such knowledge and skills to improve their writings, but the study of Robertson (2008) did not report the empirical evidence of the learning outcomes as a result of participating in the e-Learning environment.

RESEARCH METHODOLOGY

Research Participants

The research participants in this study were fifty-four first-year students in the English major at the Department of Applied Arts, Faculty of Industrial Education, King Mongkut's Institute of Technology Ladkrabang in Bangkok, Thailand. They were taking the course Writing 1 which focused on paragraph writing. Twelve were males and forty-two were females. Their ages ranged between 18 and 20 years old and the average age of the group was 19 years old.

Research Instruments

Pretest and posttest on English grammar

The pretest on English grammar was developed based on grammatical topics essential to basic writing as often manifested in writing textbooks. The test contained 50 items and they were written in the multiple-choice format with four alternatives. The test was revised and piloted with a different group of students in the English major. The reliability measured with Cronbach's alpha was 0.7 which was considered acceptable. Then, the items were further revised for improvement. Later, the posttest was constructed in the parallel format of the pretest in order to measure the same grammatical knowledge after learning in the blended e-Learning environment.

Pretest and posttest on paragraph writing

The pretest and posttest on paragraph writing required the students to write a 250-300 word paragraph on the given topics. The time allocated was one and a half hours.

Learner satisfaction questionnaire

The Technology Acceptance Model (TAM) was applied to assess user satisfaction with e-Learning. The TAM model has been extensively used, modified, and extended to survey user attitude towards information technologies and predict user technology acceptance, adoption, and use of information system (Al-hawari & Mouakket, 2010; Ferriman, 2013; Liaw, 2008; Liaw & Huang, 2013). The model posits that *perceived usefulness* and *perceived ease of use* are very important determinants that cause people to either embrace or reject the information technology and e-Learning (Liaw, 2008).

The learner satisfaction questionnaire containing two parts was constructed. Part 1 was intended to gather background information of the students, such as sex, age, computer ownership, Internet access on the campus and in the students' private places, and the number of hours spent on daily Internet search and on e-Learning. The students ticked (✓) in the boxes of information that corresponded to themselves and filled in the information in the spaces provided. Part 2 examined the students' perceived satisfaction with the ease of use of Moodle's LMS (15 items) and the students' perceived satisfaction with the usefulness of blended e-Learning (19 items). The students were asked to rate their satisfaction by writing the tick mark (✓) in the

boxes on the five-point Likert's scale ranging from 1-5 (1= Strongly Disagree, 2 = Disagree, 3 = Neither Agree or Disagree, 4 = Agree, 5 = Strongly Agree).

Research Procedure and Data Collection

The research procedure and data collection followed the following steps:

1. The researchers prepared supplementary document files and selected shared video clips on YouTube for English grammar and paragraph writing instruction for learning in 14 modules in the period of one semester (14 weeks). The grammar topics included countable and uncountable nouns, articles and determiners, adjectives, adverbs, comparative and superlative forms, tenses, subject-verb agreement, relative clauses, present participles, past participles, -ing and -ed adjectives, passive and active voice, modal verbs, prepositions, etc. Moreover, the English structure consisted of topics on simple, compound, complex, and parallel sentence structures. Grammatical rules were presented for deductive and inductive learning, and the grammar quizzes were created in the multiple-choice format. Moodle was employed to manage course resources and activities and to monitor students' learning progress, including giving feedback to their written assignments.
2. Before the course started, the students took the pretest on English grammar for one hour, and then they took the pretest on paragraph writing (250-300 words) on a given topic for one and a half hours.
3. In the first week, each student was assigned a username and a password to access the e-Learning system. The students were instructed to log on to the course, change their passwords, and edit personal profiles. They were given time to explore the blended e-Learning system, functions of communication tools, and learning resources. In each week, a lecture on paragraph writing was given for three hours in the traditional classroom by an EFL instructor who was one of the researchers in this study. Then, the students were encouraged to independently study English grammar and do quizzes in the e-Learning mode at their own learning pace and in their convenient time outside the classroom. The students were required to submit their paragraphs in the e-Learning system for sharing drafts with peers and receiving feedback for revision.
4. At the end of the course, the students took the posttest on English grammar for one hour and they wrote a paragraph of 250-300 words on a given topic for one and a half hours.
5. Finally, the students completed the questionnaire which examined their perceived satisfaction with blended e-Learning.

Data Analysis

Pretest and posttest scores on English grammar

The group's pretest and posttest scores on English grammar were analyzed and reported in terms of means and standard deviations and the group's pretest and posttest mean scores were compared using *t*-test to examine a significant difference.

Pretest and posttest scores on paragraph writing

The paragraphs from pretest and posttest were rated against the rubrics by an experienced ELF writing instructor who was another researcher in the present study. The full score was 20 points and the rubrics were set as the following: Content = 6 points, organization and idea development = 4 points, grammatical accuracy = 4 points, lexical sophistication = 4 points, and mechanics = 2 points. Subsequently, the study examined a significant difference between the pretest and posttest mean scores on paragraph writing by conducting a *t*-test analysis.

Quantitative data from the questionnaire

Data from the questionnaire examining the students' perceived satisfaction with blended e-Learning were analyzed using the computer and the means and standard deviations were reported. The levels of perceived satisfaction were identified as the following; 4.51 - 5.00 = "Very High", 3.51 - 4.50 = "High", 2.51 - 3.50 = "Neutral", 1.51 - 2.50 = "Low", and 1.00 - 1.50 = "Very Low".

RESULTS

The majority of the students (51 students = 94.55%) had their own computers, but 3 students (5.60%) did not own a computer. Thirty-seven students (68.50%) stated that they could access the Internet conveniently on the campus, while 17 students (31.50%) said it was inconvenient for them to do so. Forty students (87.00%) said they could access the Internet conveniently in their private places, while 7 students (13.00%) said they could not do so. Furthermore, 10 students (18.52%) spent less than 1 hour studying the e-Lessons per week, 30 students (55.60%) spent 1-2 hours, 11 students (20.37%) spent 3-4 hours, and 3 students (5.60%) spent more than 5 hours. The findings tend to suggest that even though the students intended to invest their time and effort in e-Learning, a lack of computer ownership and inconvenient Internet access may have had some negative impacts on the results.

The present study found that first-year students in the English major could significantly improve their English grammar and paragraph writing skills, but it revealed moderate levels of their perceived satisfaction with the benefits of blended e-Learning that uses Moodle's LMS.

Pretest and posttest mean scores on English grammar examinations

Table 1 informs that first-year students in the English major significantly increased their knowledge of English grammar as the group's posttest mean score (32.17/50) was significantly higher than the pretest mean score (28.71/50), and the *t*-value was 4.87 measured at the significant level 0.05 ($p < 0.05$).

Table 1. The comparison between pretest and posttest mean scores on multiple-choice English grammar examinations (n=54)

	\bar{X}	S. D.	t-value	df	Sig.
Pretest	28.71	4.78	-4.87	53	.00
Posttest	32.17	6.13			

Therefore, the finding has suggested that blended e-Learning using Moodle's LMS could help freshmen in the English major significantly increase their grammatical knowledge.

Pretest and posttest mean scores on paragraph written examinations

Table 2 presents the comparison between the pretest and posttest mean scores from paragraph written examinations.

Table 2. The results of paired samples t-test between pretest and posttest mean scores on paragraph written examinations (n=54)

	\bar{X}	S. D.	t-value	df	Sig.
Pretest	7.98	4.99	5.333	53	.00
Posttest	10.12	5.88			

The finding has informed that first-year students in the English major significantly improved their paragraph writing skills as the group's posttest mean score (10.12/20) was significantly higher than the pretest mean score (7.98/20), and the t-value was 5.33 measured at the significant level 0.05 (p<0.05).

However, it could be observed that both the pretest and posttest mean scores from paragraph written examinations were not high, and it could be implied that paragraph writing was a daunting and difficult task for these freshmen in the English major to accomplish. The students still needed to further develop and improve their paragraph writing skills continually.

The Students' Perceived Satisfaction with Blended e-Learning

The study discovered that the students' perceived satisfaction with the ease of use of Moodle's LMS and their perceived satisfaction with the usefulness of blended e-Learning for EFL grammar and writing instruction were neutral (Table 3). *The students' perceived satisfaction with the ease of use of Moodle's LMS for EFL grammar and writing instruction*

In general, the students' perceived satisfaction levels with the ease of use of various features and functions of Moodle's LMS were neutral (Table 3). To some extent, the students seemed to enjoy the benefits of Moodle's LMS that allowed them to communicate with the teacher and their classmates conveniently. They viewed that the following features and functions of Moodle's LMS had appropriate design: the layout of e-Lessons, letter fonts, line spaces, and colors. In addition, they tended to agree that the e-Learning system had appropriate speed to display letters, pictures, and video clips. Furthermore, the students seemed to enjoy the convenience of online submissions for assignments.

Table 3. The students' perceived satisfaction with the ease of use of Moodle's LMS for EFL grammar and writing instruction (n=54)

Item	Statement	\bar{X}	S.D.	Level
1	The e-Lessons in Moodle have appropriate design.	2.70	0.66	Neutral
2	The e-Lessons in Moodle use appropriate technology which is easy and convenient to use.	2.56	0.98	Neutral
3	I can use the e-Lessons in Moodle at the university conveniently.	2.64	0.97	Neutral
4	I can use the e-Lessons in Moodle in my private place conveniently.	2.33	0.78	Low
5	The layout of the e-Lessons (page layout, page length, letter font, line space, and color) is appropriate.	2.87	0.86	Neutral
6	The e-Learning system has appropriate speed to display letters, pictures, and video clips in the e-Lessons effectively.	2.72	0.93	Neutral
7	The system displays contents in the e-Lessons clearly and in an orderly manner.	2.68	0.92	Neutral
8	The learning record system helps me to understand my knowledge and performance level and helps me manage my learning more effectively.	2.25	0.75	Low
9	The automatic responding system which reveals the correct answers helps me learn independently and more effectively.	2.40	0.98	Low
10	The information delivery system helps me to receive course information conveniently.	2.62	0.75	Neutral
11	I can submit assignments in the system conveniently.	2.72	1.07	Neutral
12	I can express my opinions in the communication channels in the system conveniently.	2.61	0.89	Neutral
13	I can communicate with the teacher in the system of Moodle conveniently.	2.96	1.04	Neutral
14	I receive feedback on my writings from the teacher in Moodle's LMS conveniently.	2.64	1.03	Neutral
15	I can communicate with other learners in the class conveniently in Moodle's LMS.	2.90	0.87	Neutral
	Average	2.64	0.89	Neutral

In addition, the students' perceived satisfaction with the following technological applications of Moodle's LMS also appeared neutral: receiving feedback for their writings from the instructor, viewing course information, and expressing opinions. Nevertheless, the students did not appear to appreciate the benefits of the automatic responding system and the learning record system very much.

The students' perceived satisfaction with the usefulness of blended e-Learning

In general, the students' perceived satisfaction levels with the usefulness of blended e-Learning that uses Moodle's LMS were neutral (Table 4). The students thought that the e-Lessons and activities were moderately interesting, complete, satisfactory, varied, and adequate. Furthermore, they appeared to agree that the e-Lessons and activities were fairly flexible, useful, relevant, appropriate, and easy to understand. The students also seemed to like and have fun when studying the e-Lessons as they thought e-Learning helped create motivation to learn English grammar and practice writing.

Table 4. The students' perceived satisfaction with the usefulness of blended e-Learning (n=54)

Item	Statement	\bar{X}	S.D.	Level
16	The e-Lessons in Moodle have appropriate learning activities.	2.75	0.67	Neutral
17	The e-Lessons in Moodle suit the level and interest of mine.	2.56	0.69	Neutral
18	The e-Lessons in Moodle create interesting and complete learning activities for me.	2.74	0.78	Neutral
19	The e-Lessons are flexible and allow me to study the lessons according to my preferences and performance level.	2.64	0.93	Neutral
20	I can search documents and download them to study conveniently.	2.55	0.76	Neutral
21	The contents in e-Lessons are accurate, appropriate, and relevant to learning objectives.	2.62	0.73	Neutral
22	The contents in e-Lessons are easy to understand.	2.55	0.71	Neutral
23	The contents in e-Lessons are varied and interesting.	2.62	0.62	Neutral
24	The contents in e-Lessons are adequate for my needs.	2.62	0.73	Neutral
25	The organization of the e-Lessons is appropriate.	2.64	0.78	Neutral
26	The documents for download are useful.	2.59	0.76	Neutral
27	The multimedia from the Internet, such as video clips are useful and help me to understand English grammar better.	2.55	0.71	Neutral
28	The e-Lessons in Moodle help me create higher motivation in learning English grammar and practice writing.	2.70	0.66	Neutral
29	The e-Lessons in Moodle are satisfactory.	2.85	0.65	Neutral
30	I feel fun when using e-Lessons to learn English in Moodle.	2.94	0.62	Neutral
31	I like learning English from the e-Lessons in Moodle.	2.90	0.68	Neutral
32	The e-Lessons in Moodle help me to participate more in learning activities.	2.57	0.60	Neutral
33	The e-Lessons in Moodle are useful and I will continue using them in the future.	2.55	0.60	Neutral
34	The e-Lessons in Moodle are useful and I will recommend other students to use them in the future.	2.50	0.63	Neutral
	Average	2.51	0.70	Neutral

Although the findings tend to indicate that the instructional design of e-Lessons and activities were somewhat useful, there are still many aspects of the current blended e-Learning that needs to be improved and revised to make them more flexible, interesting, relevant, useful, varied, and complete.

DISCUSSION AND RECOMMENDATIONS

Based on the empirical findings of our study, Moodle's LMS has proven to be a free, user-friendly, feasible, and effective e-Learning technology that could support blended e-Learning in developing countries with limited financial support and e-Learning facilities. Our study tends to suggest that blended e-Learning using Moodle's LMS can help engage students into an active and fruitful learning process.

As evidenced by our research findings, blended e-Learning helped first-year students in the English major enhance their English grammatical knowledge and paragraph writing skills, thanks to the features and functions of Moodle's LMS. There were significant differences between the multiple-choice pretest and posttest mean scores of the group on English grammar examinations and paragraph written examinations. The findings have confirmed the study of Banados (2016) who reported similar results. The findings are also consistent with the results of earlier studies reporting that computer mediated communication can assist ESL and EFL students to acquire the target language skills (Li & Hegelheimer, 2013; Miyazoe & Anderson, 2011). Other benefits of blended e-Learning manifested in the present study are also congruent with the findings of previous studies; e-Learning technologies provide convenient communication tools, easy assignment submission, and supportive feedback facilities (Escobar-Rodriguez et al., 2012; Li & Hegelheimer, 2013; Miyazoe & Anderson, 2011; Yang et al., 2013).

However, the students' perceived satisfaction with the ease of use of Moodle's LMS and the usefulness of blended e-Learning appeared neutral. The students thought that blended e-Learning was moderately useful, and this finding is consistent with the study of Tananuraksakul (2016) which reported that Thai students in her study appeared to hold a neutral attitude toward blended e-Learning. Moreover, research has informed that a large number of Thai students seem to prefer studying from textbooks and print materials rather than using e-Learning resources (Siritongthaworn & Krairit, 2006). Bhuasiri et al. (2012) explained that in developing countries where e-Learning is still in the early stage of adoption, students are familiar with the traditional teaching and learning style and they do not tend to fully adopt e-Learning. Furthermore, an absence of a dynamic e-Learning atmosphere may not encourage active learning in the newly-introduced e-Learning system (Liaw, 2008). As a result, it would take a longer

period of time for students with little e-Learning experiences to acculturate themselves into an autonomous e-Learning environment and to realize the full benefits e-Learning.

The findings suggest that the quality of our blended e-Learning may need to be improved to be more interesting, useful, varied, and complete because these are important attributes leading to acceptance, adoption, and use of e-Learning (Escoba & Rodriguez, 2012; Liaw, 2008; Liaw & Huang, 2013).

Instructional Implications

Using Moodle's LMS as an educational technology, EFL learning can be maximized and extended beyond the classroom, and students can be helped to cultivate self-management for their learning. The LMS is equipped with a variety of functions and features that could help instructors integrate various types of learning resources and assist individual students to learn with flexibility for their daily routines and learning paces. Supplementary materials, exercises, tests, and shared online video clips can be incorporated to support learning on focused topics i.e. English grammar, and paragraph writing. The LMS provides students with communication channels for giving feedback to peers and receive feedback from instructors and peers, and then students can use the feedback to improve their written assignments. In addition, the LMS has a system that can help bolster self-directed learning. Thus, students should be taught how to effectively make use of the automatic responding and recording system to monitor and direct their own learning. However, it is important for instructors to provide comprehensive feedback for each item in grammar quizzes in order to support independent learning and acquisition of grammatical rules (Li & Hegelheimer, 2013).

Limitations of the Study

The current research was conducted in a natural setting of an EFL course focusing on paragraph writing for first-year students in the English major at an academic institution of Thailand's Higher Education. It did not attempt to control the variables and the study did not use the random sampling technique and a control group due to a very small sample size. Therefore, the findings obtained from the study may not be necessarily generalized to other groups of EFL learners. Furthermore, the period of one semester may not be long enough to observe the full benefits of blended e-Learning.

Suggestions for Research in the Future

Future studies in the similar vein should include EFL students from a variety of contexts, a random sampling technique for recruiting research participants, and a control group. Furthermore, other features and functions of Moodle's LMS, such as blog, e-portfolio, forum, and workshop should be fully utilized to support the writing process, development of EFL student writers' authorship, and community of student writers. Besides perceived ease of use and usefulness, the evaluation of an e-Learning system for EFL education in the future should examine other dimensions and factors, such as technical support, service quality, learners' attitude toward e-Learning, learners' computer self-efficacy, instructor, feedback, interactivity, communication tools and social interaction (Sanchez & Hueros, 2010; Sun et al., 2008; Yang et al., 2013). These factors could possibly contribute to the overall quality and success of an e-Learning system.

CONCLUSION

This study examined the potential benefits of Moodle's LMS for blended e-Learning that was intended to support EFL grammar and writing instruction at an academic institution in the tertiary level of Thailand. It investigated Thai students' perceived satisfaction with the ease of use of this e-Learning platform and with the usefulness of e-Lessons for EFL education. The findings have shown that there were significant gains in the English grammatical knowledge and paragraph writing skills of first-year students in the English major. The students' perceived satisfaction with the ease of use of Moodle's LMS and the usefulness of blended e-Learning were neutral. The findings suggest that the blended e-Learning system of the present study still needs further improvement in the future in order to help EFL students in the English major develop grammatical knowledge, English writing skills, and independence in learning.

Our study would like to suggest that in the situations provided with limited financial support and inadequate e-Learning technologies, as often encountered by many developing countries, Moodle's LMS can be employed as an obtainable and effective technological tool that could help us achieve educational goals.

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Wiruch Pumjarean,
King Mongkut's Institute of Technology Ladkrabang,
Bangkok, Thailand

Patcharee Muangnakin
King Mongkut's Institute of Technology Ladkrabang,
Bangkok, Thailand

Ampapan Tuntinakhongul
King Mongkut's Institute of Technology Ladkrabang,
Bangkok, Thailand