

*Blended E-Learning for Postgraduate Research-Article Writing:  
A Case Study in one University in Thailand*

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The Asian Conference on Education 2015  
Official Conference Proceedings

**Abstract**

This study aimed at utilizing blended e-Learning as a tool to enhance genre-based instruction in traditional classroom in order to facilitate the learning of research article genre and the English language for research article composition. The study was a quasi-experiment conducted in the natural classroom context of the course Academic Paper Writing for postgraduate students at a Higher Education academic institution in Bangkok of Thailand. Moodle's e-Learning platform was employed to deliver the lessons. Twenty-four doctoral students of Education participated in this study for a period of one semester. The research instruments consisted of a pretest, a posttest, and a questionnaire. The pretest and posttest measured students' understanding of quantitative Education research articles and the English language used to achieve the research articles' rhetorical functions. The questionnaire examined the participant's attitude towards the ease of use and the usefulness of the e-Learning technology and e-Learning contents and activities. The *t*-test value showed that there was a significant difference between the pre and posttest mean scores of the groups at 0.05 level which signified that the blended e-Learning enabled the participants to expand their knowledge of research article genre and the English language for composing research articles. The questionnaire findings indicated that the participants had positive attitudes on the ease of use and the usefulness of the e-Learning technology and e-Learning contents and activities. Therefore, our study can conclude that Moodle's e-Learning technology has a potential for supporting research article genre learning and writing.

Keywords: research article, research article genre, e-Learning, Moodle

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## **Introduction**

In the recent decades, research article (RA) genre and the research article writing practices of postgraduate students who are nonnative-English-speaking (NNES) novice researchers have received a lot of attention from instructors working in the realms of English for Academic Purpose (EAP) (Cargill & O' Connor, 2006; Flowerdew, 2000; Li, 2007). This importance has been stressed by institutional pressure for postgraduate research article publications. In particular, academic institutions in Thailand have attempted to improve the quality of their instruction and research by means of internationalizing their educational practices. Therefore, postgraduate students are encouraged to interact with members of their disciplinary communities and to participate in research activities at the international level to acquire specialized knowledge and skills (Flowerdew, 2000; Kwan, 2009; Li, 2007). Publishing English-language research articles in international scholarly journals has become a graduation requirement for doctoral candidates at universities in Thailand. Nonetheless, writing English-language RA is a difficult task for NNES students (Bitchener & Basturkmen, 2006; Hanauer & Englander, 2011). This is particularly true for Thai postgraduate students especially of Education disciplines.

Previous research has attempted to help novice researchers understand the rhetorical conventions of research articles. The structures and functions of moves and steps in the major sections of research articles have been described (Li, 2007; Lim 2006, cited in Bruce, 2008; Kanoksilapatham, 2005). Other studies have provided genre-based instruction to facilitate the RA composition of NNES postgraduate students for improving their English research article writing skills (Mavor & Trayner, 2001). Also, genre-based instruction has been reported to provide students with an analytical framework to examine research article genre and relevant language use for composing research articles in their disciplinary fields (Cargill & O'Connor, 2006; Kanoksilapatham, 2005; Mavor & Trayner, 2001; Peters, 2011).

Although several studies have examined RA genre in Applied Linguistics and Language Teaching (Basturkmen, 2009; Bruce, 2009; Hirano, 2009; Kwan, 2006; Sheldon, 2011; Yang & Allison, 2003), Sociology (Brett, 1994), Business Management (Lim, 2006), and Philosophy of Education (Peters, 2011), our understanding of Education RA genre is still limited. In fact, research on academic preparation intended to assist NNES postgraduate students in this discipline to study RA genre and achieve international RA publication has been underemphasized especially in case of Thai postgraduate students. Moreover, the potential of e-Learning tools for helping these postgraduate students to master RA genre has not been adequately examined. Therefore, this study was intended to utilize Moodle's open source e-Learning platform to foster the traditional instruction of genre-based approach in order to help raising postgraduate students' awareness of RA genre, and enhance their knowledge of English for RA composition.

## **Purposes of the Study**

The purposes of this study was to determine :

1. to what extent blended e-learning improves knowledge of RA genre of Education postgraduate students
2. the levels of Education postgraduate students' satisfaction and their attitudes towards blended e-learning system and online activities.

## **Related Literature and Research**

### ***Problems found in RA writing process of NNES students***

Previous research in Applied Linguistics focusing on the RA writing process of novice researchers using English as a second language has reported several problems that novice RA writers often encounter. Composing RA in English for international publications is a difficult and demanding task and it appears to generate a lot of stress, anxiety, and burden (Bitchener & Basturkmen, 2006; Cargill & O'Connor, 2006; Flowerdew, 2000; Hanauer & Englander, 2011). Novices' limited knowledge of disciplinary genre could contribute to writing difficulties and poor quality of RA manuscripts (Flowerdew, 1999; Swales, 1990). Research has also reported that they have difficulties in structuring their arguments, choosing content to report, organizing content, using evidence to support arguments, evaluating models and methodologies (Dong, 1998; Bitchener & Basturkmen, 2006; Li, 2007). Furthermore, novice RA writers with limited English proficiency experienced a lot of difficulties when writing research articles for international publication (Flowerdew, 1999, 2000; Cargill & O'Connor, 2006). Flowerdew (1999) added that their writing processes, in general, are time-consuming, extensive, laborious, and stressful and their English is often seen as nonstandard and it is prone to contain mistakes. Bitchener & Basturkmen (2006) pointed out that NNES RA writers encountered a variety of problems both at the sentence and paragraph levels, in particular, new researchers failed to utilize modal verbs appropriately when making claims about their research findings. Matinez (2003) found that language deficiencies and errors tended to impede the clarity of meaning conveyed in their RA manuscripts.

The findings of other studies could confirm the problems mentioned above. Casanave and Hubbard (1992) conducted a survey with faculty members at Stanford University on their perception of the problems that NNES doctoral students encountered when writing in English, compared with English-native-speaking graduate students. The problems were incorrect use of punctuation marks, misspellings, incorrect grammar, inappropriate language and style, ineffective idea development, poor overall paper organization, and poor quality of content. Other meticulous linguistic problems included incorrect use of articles, prepositions, and tenses. The constraints appeared to hinder novice RA writers from meeting the requirements of publication. Gosden (1996) investigated the writing practice of 16 Japanese novice researchers by conducting in-depth interviews. The study reported that these novices had to work exhaustively on the revision of their English-language research articles, correcting grammar and sentence structure, and choosing appropriate vocabulary. Flowerdew (1999) studied the writing practice of 583 scholars in diverse academic fields in Hong Kong and reported that two-thirds of these scholars found themselves at a disadvantageous position when competing for international publication with English-native-speaking researchers. Moreover, the study of Hanauer and Englander (2011)

indicated that 148 scientists in Mexico encountered a great deal of language difficulties which significantly increased difficulties, anxiety, and dissatisfaction when writing research articles in English as their second language.

### ***Research Article (RA) Genre***

Genre analysis activity and genre-based instruction have been advocated by several ESP and EAP researchers and instructors as a useful pedagogical approach (Cargill & O'Connor, 2006; Flowerdew, 2000; Li, 2007; Swales, 1990). The typical RA genre often consists of four major sections: Introduction; Method; Results; and Discussion (IMRD) (Swales, 1990). The rhetorical organization of each major section is described in terms of structure and functions of moves, steps and sub-steps in relation to Linguistic choices (Swales, 1990).

In the first RA genre section, Introduction, the Create A Research Space (CARS) model has been widely used for investigating RA genre Introduction (Swales, 1990). The CARS model consists of a sequence of four rhetorical moves including : (1) establish the field in which he or she is working, (2) summarize related research in the area of concern, (3) create a research space for the present study by indicating a gap in current knowledge or by raising questions and (4) introduce the study by indicating what the investigation being reported will accomplish for the field (Swales, 1990).

The second RA genre section or Method is believed to be highly discipline-specific (Swales, 1990). Very limited research has established frameworks for examining the rhetorical organization of RA Method section. However, some studies analysed and found three moves in this section. Lim (2006) examined the RA Method genre in Business Management which included: (1) Describing the data collecting procedures, (2) Delineating the procedures for measuring the variables, and (3) Elucidating data analysis procedures.

In the third RA genre section, Results, Swales and Feak (2004) suggested three moves including (1) Locating the findings, (2) Highlighting the important findings, and (3) Discussing the findings. However, Kanoaksilapatham (2005) analysed the result section of Biochemistry RA genre and reported four moves which were (1) Restating methodological issues, (2) Justifying methodological issues, (3) Announcing results, and (4) Commenting on results.

The last fourth typical RA genre is Discussion. The moves structure in this section often used are based on Peng's framework (1987 cited in Swales, 1990) and Hopkins and Dudley-Evans (1988). The moves include (1) Giving background information, (2) Summarizing results, (3) Indicating (un) expected outcome, (4) Referring to previous research, (5) Explaining, (6) Giving example(s), (7) Deducing and hypothesizing, and (8) Giving recommendations. Nevertheless, in practice, Results and Discussion have been written as one section in the RA composition. Yang and Allison (2003) examined the Results and Discussion section of Applied Linguistics RA genre and reported their findings in seven moves. These were Providing background information, Reporting results, Summarizing results, Commenting on results, Summarizing the study, Evaluating the study, and Making deductions from the research.

These previous studies on RA Genre analysis have provided us a useful framework for studying the rhetorical structure of Education RA. The literature also suggests that formal instruction can help novices understand RA genre and develop themselves to be more independent RA writers (Cargill & O'Connor, 2006; Gosden, 1995; Flowerdew, 2000; Li, 2007). However, very few studies have focused on RA genre of Education discipline.

### ***Blended e-Learning and e-Learning Tool***

Blended e-learning refers to the combination of traditional classroom teaching with e-learning activities to enrich delivery in the learning environment. Blended e-learning, so called blended learning is related with presenting the major learning activities online while retaining traditional classroom teaching. This tends to use classroom time for activities which benefit the most from direct interaction (Lee & Hung, 2015). A great deal of research has pointed out the benefits of blended e-learning. Garrison and Vaughan (2008) investigated perceptions on blended e-learning in higher education and found that it facilitated flexibility in learning times and increased students' responsibility for learning; he concluded that blended e-learning can cultivate students' learning experience. Albrecht (2006) revealed high student satisfaction with blended learning. Bourne and Seaman (2005) reported the benefit of blended e-learning to educational process. Jacob (2011) investigated benefits and barriers in blended learning and concluded that blended e-learning was well accepted due to its efficiency.

E-Learning can be a tool to facilitate the achievements of educational goals as it provides academic institutions, teachers and learners with a variety of innovative instructional instruments and communication tools. E-Learning technologies can encourage new and creative educational approaches that enhance teaching and learning (Liaw & Huang, 2013). Instructors can orchestrate a variety of learning activities and assist students in learning; students can actively participate and collaborate in extensive learning opportunities using synchronous and asynchronous communication tools outside the classroom (Escobar-Rodriguez & Monge-Lozana, 2012; Liaw, 2008). In essence, e-Learning offers learners flexibility to choose convenient time and place to learn according to their interest and the level of knowledge (Pituch & Lee, 2006).

Moodle is a popular e-learning system that meets the needs of e-Learning; it is easy to use and allows instructors to deliver online instruction, and manage course and learning (Escoba, & Rodriguez, 2012). Moodle contains a range of tools that permit the integration of a variety of internal and external multimedia sources, activities, assignments, electronic delivery of learning resources, workshop, synchronous and a synchronous communication channels (chat and forums), quizzes, and learning records (Dougiamas, 2010). Thus, Moodle tends to have a high potential for supporting postgraduate students to study RA genre.

There have been studies which have informed that Moodle supports learning in various aspects. Focusing on project-based writing for undergraduate students, Robertson (2008) integrated Moodle's Course Management System (CMS) into the process pedagogy and reported that Moodle offered flexible CMS for the instructor to organize and deliver course resources and opportunities for students to independently utilize the learning resources. In addition, Moodle encouraged cooperative and

reflexive learning which are crucial to the writing process. Students could view course schedule, see and communicate with other classmates, submit written assignments, read supplementary materials, create individual or group journals, do quizzes, request additional learning materials, and communicate with the instructor. The study integrated quizzes which students could use to assess their knowledge of grammar, punctuation, and vocabulary. Therefore, the instructor could continually monitor students' performances. However, the findings of Robertson (2008) were anecdotal as the study did not provide empirical evidence of students' learning outcomes as a result of participating in the e-Learning environment.

In another study, Dougiamas (2010) employed Moodle's open-source e-Learning software in an English as a Second Language writing class and suggested that Moodle is appropriate for the process approach to writing instruction which highlights prewriting, revising, editing, and reflexive learning. Student writers can help their group brainstorm ideas in the pre-writing session, receive feedback on their writing from peers in the revising stage, and submit their final draft in Moodle's system. However, the study of Dougiamas (2010) did not report empirical evidence related to students' learning outcomes contributed by Moodle's e-Learning application.

At present, a variety of criteria for evaluating e-Learning have been proposed. The Technology Acceptance Model (TAM) first proposed by Davis in 1989 has been applied to survey user attitude towards information technologies and e-Learning systems (Montaghian et al., 2013). The model has been widely used and extended to predict user technology acceptance, adoption, and use of information system (Al-hawari & Mouakket, 2010; Escobar-Rodriguez & Monge-Lozano, 2012). The TAM model posits that *perceived usefulness* and *perceived ease of use* are important determinants that cause people to either accept or reject information technology (Davis et al., 1989; Montaghian et al., 2013). Perceive usefulness refers to the degree that using a particular e-Learning system could improve his or her knowledge and performance (Davis et al., 1989). Perceived ease of use refers to the degree that the user feels using a particular e-Learning system does not need extra effort (Davis et al., 1989). However, it has been adapted to suit the learning objectives and students' needs. Our framework for evaluating the blended e-Learning for postgraduate students to study Education RA genre and the English language was also based on the TAM model. The evaluation focused on *the perceived usefulness* and *perceived ease of use* of the e-Learning technology and its contents and learning activities (Liaw, 2008; Montaghian et al., 2013).

## **Research Methodology**

The study was a quasi-experiment conducted at one higher education institution in Thailand. It took place in the natural setting of the English course, Academic Paper Writing, for postgraduate students in the first semester of the academic year 2013. Blended e-Learning was integrated into the traditional instruction of this regular class. Pre and posttest were employed to investigate the impact of blended e-Learning intended for raising students' awareness of language structure, vocabulary, and RA genre. In addition, a questionnaire was utilized to examine students' attitude towards the e-Learning technology and e-Learning contents and activities.

### ***Research Participants***

Twenty-four doctoral students in two sub-disciplines of Education, including Curriculum and Evaluation, and Educational Administration participated in the blended e-Learning project. The majority of these doctoral candidates were fulltime instructors and administrators at state schools and universities. These doctoral candidates are required to publish two full-length research articles to disseminate their research in recognized scholarly journals or conference proceedings. Nonetheless, the participants in this group seemed to have very limited exposure to academic English and lack adequate English language proficiency to accomplish the task. Thus, it appeared that these postgraduate students were undertaking a remarkably difficult task of publishing their research articles in English.

### ***Research Instruments***

#### ***1. Pretest and Posttest***

The pretest was intended to measure the participants' understanding of Education RA genre, including content, grammar, and vocabulary to achieve the rhetorical functions in the major sections of Education RA. This research was focused on Education RA which employed the quantitative research methodology in the studies. The extracts were drawn from RA published in academic journals. The original extracts of the Abstract, Introduction, Method, Result, and Discussion were slightly modified as the research attempted to maintain the original rhetorical structure and language pattern of the RA as much as possible. The pretest contains 40 multiple-choice questions and each question is presented with four alternatives. Items 1-5 were based on the generic structure of the RA Abstract. The other items are constructed based on the move structure of the major sections in RA: Introduction (Items 6-12), Method (Items 13-25), Results (Items 28-33), and Discussion (Items 34-40). The pretest was piloted and revised. The reliability (Cronbach's alpha) of the pretest was 0.77 which was considered acceptable. Then, a parallel-format test was constructed and used as the posttest at the end of semester.

#### ***2. Questionnaire***

The questionnaire contains two major sections. In the first section, the students are required to fill in their background information. The second section asks the participants to rate their attitude towards the blended e-Learning system intended for studying Education RA genre and language on a 5-point Likert-scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree). Based on the TAM model, this study examined *perceived the ease of use* and *perceived usefulness* of the e-Learning technology and the e-Learning contents and activities. The third section asks the participants to provide short responses stating the benefits and problems of the blended e-Learning for studying RA genre. Moreover, the participants are asked to provide recommendations for improving e-Learning lessons and activities for studying RA genre and writing research articles for publication.

#### ***3. Moodle***

Moodle's open source e-Learning template allows the study to incorporate useful resources related to educational research such as videos available on Youtube's web site. In this study, the videos offered the doctoral students with learning opportunities to study disciplinary epistemologies and research methodologies from English-speaking professors at universities overseas. In addition, the participants could

download additional learning materials provided in the system for studying sentence structures and tenses on their own.

Moodle provided the participants with weekly exercises related to the instruction in class. The extracts of the Introduction, Method, Results, and Discussion of published research articles in two sub-disciplines of Education: Curriculum and Evaluation, and Educational Administration were used to design language exercises in the e-Learning mode. Key language features (verbs, active and passive verb forms, tenses, and academic vocabulary) used to perform the rhetorical functions of the major sections of the selected RA were purposively deleted to construct language exercises in the cloze and multiple-choice formats. Four alternatives were presented for each question item. The e-Learning system allowed the students to take these exercises multiple times and the automatic responding system revealed the scores and correct answers. At the end of the semester, the students were asked to submit two sections of their research article draft: Introduction and Research Methodology in Moodle's e-Learning system. Moodle provided communication channels for the participants to communicate with one another and the instructor; furthermore, they could submit their assignments, manage their own learning, and view course outline.

### **Research Procedures**

The procedures of the study were as follows. First, all doctoral students were required to take the pretest. Twenty-four students completed the pretest. They then attended classes. This three-hour class met regularly, once a week, for 12 weeks. The instruction in classes employed a genre-based approach focusing on studying the rhetorical structure and linguistic devices used to convey meanings in the major sections of Education research articles (Introduction, Method, Results, and Discussion). Each section was discussed and moves and steps were presented (Weissberg & Buker, 1990). The students were equipped with cognitive and linguistic devices for research article composition. They spent time outside the classroom to complete exercises, watch videos, and do activities in the e-Learning system.

After completing the course, the participants completed the posttest constructed in the parallel format of the pretest. After that, the participants completed the questionnaire in which they rated their satisfaction level with the e-Learning technology, and course contents and learning activities.

### **Data Analysis**

The pretest and posttest results were analyzed in terms of means and standard deviations. Then, the pretest and posttest means were compared using *t*-test. The quantitative data from the questionnaires were analyzed statistically. The findings were reported in terms of means and standard deviations. The levels of attitude were identified; 4.51 - 5.00 is interpreted as "Very High," 3.51 - 4.50 is "High," 2.51 - 3.50 is "Neutral," 1.51 - 2.50 is "Low," and 1.00 - 1.50 is "Very Low". Then, qualitative responses in the open-end section were analyzed and categorized using content analysis.



## Results

The results are shown in the figures as follows.

Knowledge of RA and English language	No. of participants	Mean	Standard Deviation	<i>t</i> value	<i>p</i> value
Pretest	24	13.23	3.18		
Posttest	24	15.18	3.92		
		1.95		2.24	0.05*

Table 1 : Pretest and posttest means (n = 24)

The statistics in Table 1 revealed that the participants' knowledge of RA genre and the English language for composing research articles improved. The average posttest score of the group (15.18) increased from the average pretest score (13.23). The *t*-test value (2.24) indicated that there was a statistically significant difference between the pretest and posttest means (1.95) at 0.05 level.

Item	Statement	$\bar{x}$	S.D.	Level
	<b>e-Learning Technology Ease of Use</b>			
1	The e-Learning in Moodle for research article writing uses appropriate technology which is easy to use.	4.38	0.13	High
6	I can communicate with other learners in the class in Moodle easily.	4.13	0.14	High
2	The information delivery system helps me to receive course information easily.	4.04	0.18	High
3	I can submit assignments in the system easily.	4.00	0.17	High
5	I can communicate with the teacher in the system of Moodle easily.	3.96	0.19	High
4	I can express my opinions in the communication channel in the system easily.	3.88	0.18	High
	<b>e-Learning Technology Usefulness</b>			
8	The learning record system helps me to understand my knowledge and performance level and manage my learning more effectively.	4.45	0.12	High
7	The system displays contents in the lessons clearly and in an orderly manner.	4.29	0.11	High
9	The automatic responding system which reveals the correct answers helps me learn independently and more effectively.	4.29	0.14	High
10	The e-Learning system has appropriate speed to display letters, pictures, and video clips in the lessons effectively.	3.87	0.16	High
	<b>Average</b>	<b>4.13</b>	<b>0.15</b>	<b>High</b>

Table 2 : Perceived ease of use and usefulness of the e-Learning technology (n = 24)

The findings in Table 2 illustrated that the participants generally advocated the e-Learning lessons designed in this study. The average mean of all items measuring the e-Learning technology was 4.13. It also showed that the levels of perceived ease of use and usefulness of the e-Learning technology appeared high for all aspects. The participants viewed that Moodle provided appropriate technology and design for e-Learning which is easy and convenient to use. The information delivery system helped them to receive course information and submit assignments in the system conveniently. The communication tools of Moodle allowed them to contact with the

teacher and classmates easily; furthermore, the e-Learning system provided them with a channel easy to express their opinions.

Item	Statement	X	S.D.	Level
11	<b><u>e-Learning Contents and Learning Activities Ease of Use</u></b> I can search documents and download them to study easily.	4.25	0.12	High
12	The contents in e-Lessons for research article writing are easy to understand.	4.25	0.12	High
23	<b><u>e-Learning Contents and Learning Activities Usefulness</u></b> The e-Lessons in Moodle for research article writing help me spend time outside the classroom useful for learning English.	4.63	0.10	Very High
24	The e-Lessons in Moodle for research article writing provide opportunities to study English from various sources which are useful.	4.58	0.10	Very High
15	The e-Lessons in Moodle for research article writing support me to develop self-learning.	4.46	0.13	High
19	The e-Lessons in Moodle for research article writing are useful and help me improve my knowledge.	4.46	0.10	High
25	The e-Lessons in Moodle for research article writing help me participate more in learning activities.	4.45	0.12	High
22	The e-Lessons in Moodle for research article writing make my learning effective and help me understand the content better.	4.41	0.12	High
16	The e-Lessons for research article writing are flexible and allow me to study according to my preferences and performance level.	4.38	0.16	High
13	The e-Lessons in Moodle for research article writing have appropriate contents and meet the learning objectives of the course.	4.33	0.12	High
17	The contents in e-Lessons for research article writing meet my needs and appropriate to the level of my knowledge.	4.29	0.09	High
21	The multimedia from the Internet, such as video clips are useful and helpful for me to understand English grammar.	4.29	0.13	High
18	The contents in e-Lessons for research article writing are varied and interesting.	4.25	0.14	High
14	The e-Lessons in Moodle for research article writing suit the level of my knowledge and interest.	4.21	0.12	High
20	The documents for download are useful.	4.21	0.12	High
	<b>Average</b>	<b>4.07</b>	<b>0.12</b>	High

Table 3 : Perceived ease of use and usefulness of the e-Learning contents and learning activities (n = 24)

Table 3 revealed that the average mean of all items assessing the e-Learning contents and learning activities was 4.07, showing that the attitude levels for these two aspects were high. These findings clearly illustrated that the participants enjoyed the benefits from e-Learning. Overall, the participants viewed that the e-Learning contents and

activities for studying RA genre, language structure, and vocabulary were easy to understand and useful for RA composition. The levels of their perceived usefulness were very high for the opportunities to spend useful time outside the classroom on studying English from various sources. Moreover, they believed that the e-Learning supported them to develop self-learning and improve their knowledge.

<p><b>1) Ease of use</b></p> <ol style="list-style-type: none"> <li>1. Easy to find information as the content is well-organized.</li> <li>2. Easy to revise and practice anywhere and anytime.</li> <li>3. Easy to access as it is online.</li> <li>4. Easy to understand the structure of research articles.</li> <li>5. Easy to apply the information into their own RA writings.</li> </ol>	<p><b>2) Usefulness</b></p> <ol style="list-style-type: none"> <li>1. Able to use the information as a reference for writing their own research articles.</li> <li>2. Able to learn from the distance when assigned the task.</li> <li>3. Able to communicate with the lecturer online or drop questions.</li> <li>4. Able to study and practice anywhere and anytime.</li> <li>5. Able to reduce stress in class when left behind.</li> </ol>
<p><b>3) Problems</b></p> <ol style="list-style-type: none"> <li>1. Poor quality of network causing slowness or delay.</li> <li>2. Unclear instructions for some parts.</li> <li>3. Too long contents and exercises.</li> </ol>	<p><b>4) Suggestions for improvement</b></p> <ol style="list-style-type: none"> <li>1. Use more attractive design in the webpage for both the lay-out and contents.</li> <li>2. Develop e-Testing in the future.</li> <li>3. Provide a user's manual.</li> <li>4. Provide more time for counselling.</li> <li>5. Provide more attractive visual and audio tools.</li> <li>6. Provide more authentic examples.</li> <li>7. Provide more useful links or websites.</li> <li>8. Provide an explanation for the answer of each question.</li> </ol>

Table 4: Qualitative findings about the blended e-Learning for studying RA genre and the English language for RA composition

In Table 4, qualitative findings obtained from the open-ended responses are presented. Overall, the findings demonstrated that the participants had satisfaction with the ease of use and usefulness of the e-Learning technology, and the contents and learning activities. These findings supported the quantitative findings obtained from the questionnaire data. The participants indicated the particular benefits of e-Learning, such as easy to study anywhere and anytime, easy to understand the structure of research articles, able to communicate with the instructor online, able to reduce stress in class when left behind, and able to use the information as a reference to write their research articles. Obviously, the findings signified that the use of blended e-Learning technology in postgraduate RA writing course could bring a lot of advantages and benefits to the traditional style of teaching and learning.

## Discussion and Conclusion

The empirical findings of our study showed that genre-based instruction which utilized blended e-Learning resulted in students' improved learning outcomes and positive attitudes; the positive aspects of e-Learning reported in this study are in line with the findings of previous research which support that RA genre could be formally taught in order to help raise awareness and enhance genre knowledge of novice RA writers (Flowerdew, 2000; Gosden, 1995; Li, 2007; Peters, 2011). The findings also accord with Dougiamas (2010) that Moodle's e-Learning technology supports learner autonomy and the socio-constructive learning approach.

In addition, this study yielded many positive results that reflected students' positive attitude towards e-Learning. The participants agreed that the e-Learning had appropriate contents and learning activities that met their learning objectives and the level of their knowledge and interest. Besides, the contents in the e-Learning for RA writing were varied and interesting. Moreover, the multimedia from the Internet, such as video clips were useful and helpful for studying English grammar. These findings are supported with Liaw (2008) who stated that these factors concerning the quality of e-Learning contents and learning activities are the predictors of e-Learning effectiveness and students' perceived satisfaction.

In light of e-Learning assessment, our study found the factors which are consistent with earlier findings that could determine the ease of e-Learning technology use which include user-friendly interface for learning and communication. The factors influencing perceived usefulness of e-Learning technology include useful system functionality and system quality (Montaghian et al., 2013; Pituch & Lee, 2006; Sirithongtaworn & Krairit, 2006; Sun et al., 2008). The factors that could determine the ease of use of e-Learning contents and learning activities include easy to archive and easy to understand. The factors that could contribute to the usefulness of e-Learning contents and learning activities involve information quality and useful learning activities (Sirithongtaworn & Krairit, 2006), useful instructional multimedia (Liaw et al., 2007), interactive responses (Liaw et al., 2007; Liaw & Huang, 2013), learner fit, flexibility, and autonomous learning. These factors could consequently create the overall quality of e-Learning system.

However, some problems were encountered. These included poor network quality which sometimes caused slowness or delay, unclear instructions for some parts which caused confusion, and the lengthy contents and exercises which were sometimes too exhausting. Nevertheless, the participants provided some useful suggestions which could help improve the e-Learning project in the future. According to their views, the e-Learning project should provide the followings: a user's manual, a more attractive layout of the webpage and content page design, additional useful visual and audio tools, more useful links or websites, more authentic examples, an explanation for the correct answer of each question, and more time for the instructor to give online advice. In addition, the participants suggested developing e-Testing for Education postgraduates to assess their English knowledge for RA composition. These recommendations should be taken into account because the e-Learning project that provides support, interactive learning activities, and a variety of educational multimedia can meet the needs of students who prefer self-directed learning mode and interactive learning environment. In addition, this study was conducted with a small

group of doctoral students in two sub-disciplines of Education at an academic institute in Thailand. The findings may not yield a strong effect generalizable to the population of postgraduate students of Education in general and postgraduate students of other disciplinary fields. Therefore, similar research in the future should be conducted with postgraduate students in larger groups of Education and from other academic disciplines to confirm the findings of our study. In addition, future research in this area should progress to the stage of rigorous RA writing for publication.

In summary, our study has provided evidence of significantly improved posttest mean score of the group on English for understanding Education RA genre and content. Moreover, the positive attitudes of doctoral candidates towards e-Learning can help to confirm the benefits of blended e-Learning. Therefore, we would like to conclude that blended e-Learning can facilitate RA composition well and should be used to support NNES novice researchers in Thailand to learn to write RA for international scholarly publication.

**Acknowledgement**

We are very grateful to the Faculty of Industrial Education, King Mongkut's Institute of Technology Ladkrabang, Thailand that provides research funding to this study.

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