Development of Grammar Competence by Using Knowledgebase for Bachelor of Education (English) Students at Phranakhon Rajabhat University, Thailand

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Abstract

The research aims to develop grammar competence by using the http://esp-pro.pnru.ac.th knowledgebase for Bachelor of Education (English) students, to compare achievement score before and after using knowledgebase by taking English grammar pre-test and post-test and to assess satisfaction towards knowledgebase in aspect of content and technology. The subject comprised of 27 students who enrolled in Paragraph Writing course in the second semester of the academic year 2016 and were selected by using purposive random sampling technique. The research instruments were the http://esp-pro.pnru.ac.th knowledgebase, the grammar Pre-test, before using knowledgebase and grammar Post-test, after using knowledgebase, the task sheets which indicated the navigations linking to the foreign websites and the satisfaction assessment questionnaire in aspect of content and technology. After obtaining the data, mean of the scores was compared by the T-Test. For the questionnaire, SPSS windows were used to compute frequency, percentage, mean, standard deviation, and some other descriptive statistic tasks. The results of this research were revealed as follows; Firstly, the learners' achievement scores in grammar after using the knowledgebase were higher than before using the knowledgebase at the level of p-value 0.0015 statistically significant. Secondly, the satisfaction towards the knowledgebase was at the most level in overall both in aspect of content and technology with the mean of 3.75 and 3.64 respectively. This insightful information should be used in future learning management.

Keywords: Grammar Competence, Knowledgebase, Paragraph Writing

Introduction

In the 21st century, the era of information technology, writing plays a vital role in the way of taking message and sending those texts to recipients. Accordingly, the skill of English writing is crucially important and considered as a tool of information dissemination, entirely occurred in academic field, business transactions, and personal activities domestically and internationally. By this importance of English writing, it results in the approach of learning and teaching for English writing skill in university level. In this stage, learning and teaching for English writing skill should emphasize how much educators improve writing ability for undergraduates so that they can use writing skill in their future careers and in study skills for further education. Although writing competency in English is much needed in profession, the level of English writing skill of Thai university students is under unsatisfactory evaluation. The majority of Thai students are unable to write sentences grammatically correct and in good writing principles. The problems they encounter are, for instance, syntax, limited knowledge of vocabulary, especially about their fields of study and writing style. Harmer (1983) added that learners will be effective in communication when they understand major grammatical concepts. The learners who can use grammar appropriately are required to understand grammar rules and elements. Van (2001) commented that as being language learners, it is impossible to neglect grammar when they learn a language. Ideologically, it is useful to learn grammar as long as they can use them correctly in different situations. Besides, the teaching of grammar can obtain the support of internet in pattern of knowledgebase. In order to reinforce grammar for the English major students who enrolled in Paragraph Writing course, I have a concept of developing their grammar competence by using the knowledgebase. This is to be the resource to find out more about the method that can develop grammar competence from using knowledgebase.

Objectives of the Research

　　1.　To develop grammar competence by using knowledgebase for Bachelor of Education (English) students
　　2.　To compare achievement score before and after using knowledgebase by taking English grammar pre-test and post-test
　　3.　To assess satisfaction towards knowledgebase in aspect of content and technology

Research Questions

　　1.　Do students who use the knowledgebase in Paragraph Writing course get more achievement score than before?
　　2.　Do students who use the knowledgebase in Paragraph Writing course have high satisfaction towards the knowledgebase?

Review of Literature

Role of Grammar

According to Dickin and Woods (1988), grammar is the system of language structures that judge the order and forms of words that are complied into sentences. Grammar is important in expressing the meaning of language information because the meaning of communication is caused by the relationship between words in the sentence. Learning grammar is not a waste of time. Students should be advised of the structure of the language while they learn to use the

language. It does not mean that students do exercises without mistakes or fully understand grammar rules. However, they should know that they are speaking English correctly. They also know that they are wrong and can fix it when used in real situations (Stoti, 1990). According to Thornbury (2001), grammar is part of the study of which form or structure can be used in the language. The traditional grammar focuses on sentence level analysis. Grammar plays a role in language teaching, with many reasons supporting grammar teaching, including

　　　1. Grammar is a description of the state of the language. Knowledge from grammar teaching makes students have the tools to create many sentences and allows students to have unlimited creative language tools.
　　　2. Grammar causes a deeper sense of meaning than the word system can. Grammar can correct ambiguity of sentences.
　　　3. Grammar helps prepare students for language learning. Grammar is the basis for learning and using language.

In addition, grammar is important to the study of language. When students know the grammar principles, it will help students to use the language correctly, communicate the issues they need, and have mutual understanding between the messenger and the receiver, Grammar knowledge helps learners to check whether the language or sentence used is correct or wrong and can correct it.

Knowledgebase

According to Samruay (2002), the knowledgebase is collection of diverse knowledge that has been gathered from various sources together in a systematic way. Accordingly, the computer system can be researched for use in diagnosis or use as a reason to work or manage problems that arise. Knowledgebase is a presentation of knowledge in form of computer programs in the scope of knowledge area in a particular field by providing steps to be able to search for knowledge that is linked and interacting. Knowledgebase is an important tool that users can learn by themselves in order to get what they are interested in (Jaipanya, 1999).

According to Brahmawong (2005), educational knowledgebase should contain the knowledge and experience of the content in the curriculum. Most knowledgebase will separate content in each course that can be used both in the classroom and outside the classroom. The knowledgebase consists of three types of knowledge and information as follows

　　　1. Hardcore - is knowledge that does not get changed, a fact or information.
　　　2. Interactive – is part of knowledgebase and information that is used to interact with learners in using that knowledge and information.
　　　3. Add – on - is an additional knowledge and information, comments and new research results from the opinion of teachers or learners or comments from other people.

In conclusion, knowledgebase teaching media is the collection of information and activities about a particular branch from various sources of knowledge and presented in electronic media. Knowledgebase is a web-based application that allows users to study, find knowledge for themselves, and use it in a connected and interactive way.

Related Previous Studies

Parker (1997) studied design, implementation, and evaluation in web projects for use as a design to facilitate learning at home. This web project was to increase knowledge and positive attitude with learners. The web project was to study the relationship between learners and computer screens based on social intelligence theory to develop learners to interact directly with the computer. The sample groups used in the research were obtained from random sampling and divided into two groups: experimental group and control group. The experimental group studied using the web while the control group learned with the teacher. The questions used in the experiment were the test of understanding from the learners by interviewing them and their individual concepts. There was a tape recorded in the experimental group whilst using the web. The researcher brought the tape to analyze to study the views of the web in promoting learning. From the study, it was found that the web was as effective as the teacher in the teaching atmosphere as it was. Students who used the teaching web had more positive attitudes toward the lessons than those taught by the teacher. While the students in the group with the teacher commented that they couldn't learn as much as the group that used the computer. Most learners in the group with the computers had positive attitudes and found that using computers was a good educational tool.

Ktoridou (2002) conducted a research on how to integrate technology with teaching English as a foreign language. It was found that despite advances in computer for education, technology was still a simple tool. The computer was just a device that could not replace a teacher. Using computers in the classroom was important. In order that teachers can use technology in the classroom appropriately, there were several necessary factors as follows

1. Teacher training
2. Computer labs and schedule of computer usage appropriately
3. Availability of educational software
4. Video library
5. Time to prepare, design and create relevant media and lesson plans

The appropriateness of computer integration into English language teaching was as possible as the appropriateness of using computers in English classrooms. If the English language teacher and course designer recognized the individual differences and selected the right model, the technology would become a good and useful tool. Technology was also very effective in the use of language teaching. Technology will make learners become fun and easier and match the needs of each learner.

Surasawadee (2006) conducted research on the development of knowledgebase for English reading skills for foreign language learning strands. The objectives of research were to develop knowledgebase for English reading skills and study the satisfaction of teachers and students towards the knowledgebase. The sample group consisted of 20 English language teachers and 125 students. The research findings was the researcher developed the knowledgebase in the form of a CD-ROM and websites. The knowledgebase consisted of three parts: the instructor's section, the learner section and the extra reading section. It was found that teachers and students were satisfied with using the knowledgebase from the high level to the highest level in all aspects including content, technology and presentation style. Knowledgebase made teachers' attitudes towards the use of technology in teaching and learning better and made students' attitudes towards English reading better.

Research Methodology

Research Design

Quasi-Experimental design in the form of Pre-test Post-test was used to compare the results before and after the use of knowledgebase. A research methodology was divided into the following steps:

Step 1 – In the first week of study, test the sample group before studying the course with the grammar pre-test.

Step 2 – Organize an orientation to introduce, explain and demonstrate the use of knowledgebase to sample students. The researcher explained how to proceed with the experiment, the purpose of the experiment and evaluation methods.

Step 3 – Distribute students with task sheets that specify details of links to foreign websites with 10 topics of grammatical content for 10 weeks of study. In task sheet, it described what links will be used in each week for self-study. The researcher often focused on students to use the knowledgebase in each topic of grammar regularly, especially after studying in the classroom for better understanding.

Step 4 – After 10 weeks of using the knowledgebase, students were asked to do the grammar post-test that was the same as grammar pre-test.

Step 5 – Ask the students in the sample group to complete the satisfaction questionnaire towards the knowledgebase in the aspects of content and technology.

Step 6 – Check and rate the test before and after using knowledgebase and use the scores obtained to analyze statistical data.

Step 7 – Check and tally the questionnaires to find the mean and find the conclusion.

Step 8 – Write discussion and conclusion of the research

Participants

The participants of this study were 27 Bachelor of Education (English) students studying in the first year at Phranakhon Rajabhat University, Thailand. They were taken from a research population of 56 students (two groups of Education (English) students studying in the first year), enrolling in Paragraph Writing course at the second semester of the academic year 2016. The twenty-seven participants who were mixed-ability students in writing were selected by using purposive random sampling technique. The participants comprised of 22 female students and 5 male students. They studied Paragraph writing course as the first English writing course since admission into university.

Research Instruments

Four research instruments were used in the present study.

1. Knowledgebase

The knowledgebase used in the research was http://esp-pro.pnru.ac.th that the researcher has already created, which was a research project that was part of the doctoral degree program. The knowledgebase had already been examined by experts in teaching English. Before allowing students to use the knowledgebase, teachers must learn to truly understand the knowledgebase. From the knowledgebase, the teacher selected foreign websites that had grammatical content that were as synthesized from Paragraph Writing textbook, with a total of 10 topics: Adjective, Be to describe and to define, The Simple Present, Subject – Verb Agreement, Imperatives, Modals of Advice, Necessity and Prohibition, The Simple Past, The Past Continuous, There is and There are, and Because of and Because. The selected websites had content that was compact, easy to understand, and useful. In the first week of teaching, the teacher must provide an orientation about using the knowledgebase for students by explaining and demonstrating the use of the knowledgebase. The teacher let students read grammar content and do exercises at the end of the chapter to get students become familiar with the practice of reading and doing exercises in case of self-study.

Figure 1: the homepage of the http://esp-pro.pnru.ac.th knowledgebase

2. Grammar Pre-test and Post-test

This research instrument was designed to test the participants' grammar ability to use grammar correctly according to 10 topics of grammar content synthesized from the Paragraph Writing textbook. This grammar test was used by participants both before using knowledgebase and after using knowledgebase. The researcher studied and selected the grammar test with language structure suitable for the first year undergraduate students. The test contained 100 questions with four multiple choices in 10 topics of grammar content. The grammar test was examined by experts in teaching English.

3. Task Sheet

The researcher created task sheet with the details of the navigation links to foreign websites for students in case of self-study. In the task sheet, it described the links to foreign websites in 10 topics of grammar content in 10-weeks period of time. It also described what kind of activities the teacher wanted the students to do, for instance, read grammar and do exercises at the end of the chapter, study sentence examples, and watch the video for more understanding.

4. Satisfaction Questionnaire for Knowledgebase

The questionnaire consisted of two main parts. The first part was designed to collect the data on the satisfaction towards the content of the knowledgebase. The second part was designed to survey satisfaction towards the technology of the knowledgebase. In both parts, a 4-point Likert scale was employed with the aim of investigating participants' satisfaction towards content and technology of the knowledgebase.

Findings

The findings from the study were divided into three parts:

Part I: Learning resources contained in the knowledgebase (http://esp-pro.pnru.ac.th)

The researcher studied the learning resources contained in the knowledgebase that promoted grammar learning according to 10 topics of grammar which was synthesized from Paragraph Writing textbook. The learning resources of each grammar are presented as follows:

Grammar 1: Adjective
http://esp-pro.pnru.ac.th ▸ RESOURCES ▸ Useful Web Links ▸ English Language Practice Links ▸ www.eslgold.com ▸ Grammar ▸ Explanations, Examples & Exercises ▸ Adjectives

Grammar 2: *Be* to describe and to define
http://esp-pro.pnru.ac.th ▸ RESOURCES ▸ Useful Web Links ▸ English Language Practice Links ▸ www.myenglishpages.com ▸ Grammar ▸ Simple present ("to be")

Grammar 3: The Simple Present
http://esp-pro.pnru.ac.th ▸ RESOURCES ▸ Useful Web Links ▸ English Language Practice Links ▸ www.myenglishpages.com ▸ Grammar ▸ Simple present (continued)

Grammar 4: Subject – Verb Agreement
http://esp-pro.pnru.ac.th ▸ RESOURCES ▸ Useful Web Links ▸ English Language Practice Links ▸ www.eslgold.com ▸ Grammar ▸ Explanations, Examples & Exercises ▸ Subject – Verb Agreement

Grammar 5: Imperatives
http://esp-pro.pnru.ac.th ▸ RESOURCES ▸ Useful Web Links ▸ English Language Practice Links ▸ www.myenglishpages.com ▸ Grammar ▸ The Imperatives

Grammar 6: Modals of Advice, Necessity and Prohibition
http://esp-pro.pnru.ac.th ▸ RESOURCES ▸ Useful Web Links ▸ English Language Practice Links ▸ www.learn-english-today.com ▸ Grammar ▸ modal verbs

Grammar 7: The Simple past
http://esp-pro.pnru.ac.th ▸ RESOURCES ▸ Useful Web Links ▸ English Language Practice Links ▸ www.myenglishpages.com ▸ Grammar ▸ Simple Past (continued)

Grammar 8: The Past Continuous
http://esp-pro.pnru.ac.th ▸ RESOURCES ▸ Useful Web Links ▸ English Language Practice Links ▸ www.myenglishpages.com ▸ Grammar ▸ Past continuous

Grammar 9: There is and there are
http://esp-pro.pnru.ac.th ▸ RESOURCES ▸ Useful Web Links ▸ English Language Practice Links ▸ www.english-at-home.com ▸ English Grammar ▸ There is, there are

Grammar 10: Because of and Because
http://esp-pro.pnru.ac.th ▸ RESOURCES ▸ Useful Web Links ▸ English Language Practice Links ▸ www.myenglishpages.com ▸ Grammar ▸ Conjunctions

Part II: Comparison of mean scores before and after using the knowledgebase

Table 1. Comparison of mean scores before and after using the knowledgebase

Test score (Total 100)	$\overline{x}$	S.D.	t	p-value
Before	65.43	15.965	-3.362	.0015
After	68.74	15.025		

The data from table 1 shows that the average scores of students prior to the use of the knowledgebase was 65.43 out of 100 with the standard deviation standing at 15.965 percent. However, after the use of the knowledgebase, students got a higher average score of 68.74, with the standard deviation standing at 15.025 percent. The T score equaled -3.362 while the Sig. value was .0015, which was less than the significance level (.005).

Part III: The results of the satisfaction survey towards the knowledgebase

Table 2. Mean scores of students' satisfaction towards the content of the knowledgebase

(n =27)

No.	Description of evaluation (content)	Most	Much	Fair	Least	Mean
		Number/level of satisfaction				
1.	There is a clear reference to the source of the information.	22	5	-	-	3.81
2.	The knowledgebase contains clear objectives.	23	4	-	-	3.85
3.	The content is organized by categories and easy to use.	23	4	-	-	3.85
4.	The content of each topic is appropriate.	15	12	-	-	3.55
5.	The content has a balance between difficulty and easiness.	15	10	2	-	3.48
6.	The content of each topic is modern and current.	21	6	-	-	3.78
7.	The content encourages the study and research on the world wide web.	19	7	1	-	3.66
8.	The content is suitable for use in teaching and learning management.	22	5	-	-	3.81
9.	The content of each topic is accurate according to academic principles.	24	3	-	-	3.89
10.	The content corresponds to the course used.	23	4	-	-	3.85
	Overview of satisfaction (content)					**3.75**

The overall findings revealed that students' satisfaction towards the content of knowledgebase on the ten descriptions of evaluation was at a high level. The average of the mean scores was at 3.75. As shown, satisfaction on all of the descriptions of evaluation related to the content of the knowledgebase were described at a high level except for the satisfaction on the description of the content has a balance between difficulty and easiness with a mean score of 3.48, which was at a low level.

Table 3. Mean scores of students' satisfaction towards the technology of the knowledgebase

(n =27)

No.	Description of evaluation (technology)	Most	Much	Fair	Least	Mean
		Number/level of satisfaction				**Mean**
1.	There is quick and easy access to the information you need.	18	9	-	-	3.67
2.	There is access to the information in many ways (e.g. main menu, sub-menu, etc.).	23	4	-	-	3.85
3.	The composition of the screen is proportional and beautiful.	20	7	-	-	3.73
4.	The design on the web page is interesting and attractive.	16	11	-	-	3.59
5.	The use of still images and moving images is appropriate, harmonious, and beautiful.	14	12	-	-	3.47
6.	Color design is appropriate.	16	9	2	-	3.52
7.	Font style is easy to read and clear.	16	10	1	-	3.55
8.	Language is meaningful and easy to understand.	17	8	2	-	3.56
9.	The link to each page within the website is correct.	21	5	1	-	3.74
10.	There is contact information of the developer of knowledgebase easily.	19	8	-	-	3.70
	Overview of satisfaction (technology)					**3.64**

The overall findings revealed that students' satisfaction towards the technology of knowledgebase on the ten descriptions of evaluation was at a high level. The average of the mean scores was at 3.64. As shown, satisfaction on all of the descriptions of evaluation related to the technology of the knowledgebase were described at a high level except for the satisfaction on description of the use of still images and moving images is appropriate, harmonious, and beautiful with a mean score of 3.47, which was at a low level.

Discussion

This study investigated how the use of knowledgebase develops students' grammar competence and students' satisfaction towards content and technology of the knowledgebase. As the findings revealed, the achievement in learning English grammar was higher after being trained to read grammar content using the knowledgebase. The comparison of grammar

learning achievement before and after using knowledgebase showed that the learning achievement after using the knowledgebase was significantly higher than before using the knowledgebase at p - value 0.0015. Moreover, the students' satisfaction towards the content and the technology of knowledgebase were at high level.

The participants' increased level of grammar competence after using the knowledgebase could be the results of several factors. The first factor is learning grammar using a knowledgebase is a method that helps learners to see the structure of the language and understand grammar easier. Duan and Gloria (2004) also found that knowledgebase is information that contains information or structure of information that is changed for use in work or in various activities. The knowledgebase is designed to be effective for continuous improvement. Grammar learning using knowledgebase is an interesting learning method and can be used to organize grammar learning activities effectively. The knowledgebase is a source of knowledge that has been collected into categories, with structured forms and content that is systematically designed. The knowledgebase has a specific scope and depth in a particular subject for the convenience of research.

The second factor which causes the effectiveness of learning grammar by using the knowledgebase is a search tool. Learning grammar using a knowledgebase is a method that allows learners to have search tools to facilitate their own study. Chen et al. (2003) also found that information technology has changed human learning. Learning through electronic media allows humans to learn anywhere, anytime, and helps reduce costs in education. In addition, information technology also causes changes in knowledge storage. Jaipanya (1999) found that knowledgebase is an important tool that users can learn by themselves in order to get what they are interested in.

Conclusion

This study was conducted to examine how the use of knowledgebase developed students' grammar competence and students' satisfaction towards content and technology of the knowledgebase. The 27 Bachelor of Education (English) students who enrolled in Paragraph Writing course participated in quasi-experimental research responded to the questionnaire. It was found that the learners' achievement scores in grammar after using the knowledgebase were higher than before using the knowledgebase. Moreover, the satisfaction towards the knowledgebase was at the most level in overall both in aspect of content and technology with the mean of 3.75 and 3.64 respectively. English writing teachers must emphasize grammatical accuracy to improve writing performance effectively. They must teach grammar and vocabulary information to the learners sufficiently to be a way of thinking and continue writing. Teachers should consider using the knowledgebase as a self-learning tool to enhance understanding of grammar learning along with the teaching of grammar in the classroom.

Acknowledgement

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