

บทความวิจัย (Research Article)

การเปรียบเทียบประสิทธิภาพของการเรียนแบบท่องจำ
กับการเรียนที่มีเป้าหมายในการจดจำคำศัพท์ภาษาอังกฤษ
สำหรับนักเรียนมัธยมศึกษาปีที่หนึ่งโรงเรียนพดุงราชภัฏร์

Comparing the Effectiveness of Rote Learning and Meaningful
Learning on English Vocabulary Memorization
for 7th Grade Students at Padoongrasdra School

Jinwei Huang^{1*} ศกกล เกิดผล² และวีระพงษ์ อินทร์ทอง³
Jinwei Huang^{1*}, Sakon Kerdphol², and Weerapong Inthong³

บทคัดย่อ

วัตถุประสงค์ของการวิจัยครั้งนี้ 1) เพื่อศึกษาประสิทธิภาพของการเรียนแบบท่องจำกับการเรียนแบบมีเป้าหมายในการจดจำคำศัพท์ภาษาอังกฤษ และ 2) เพื่อเปรียบเทียบวิธีการเรียนรู้ทั้งสองวิธีในการจดจำคำศัพท์ภาษาอังกฤษของนักเรียน ประชากรในการวิจัยครั้งนี้เป็นนักเรียนระดับมัธยมศึกษาปีที่หนึ่ง โรงเรียนพดุงราชภัฏร์ จำนวน 193 คน กลุ่มตัวอย่างเป็นนักเรียน จำนวน 83 คน การสุ่มแบบกลุ่ม นักเรียนสองกลุ่มเรียนคำศัพท์แบบท่องจำและแบบมีเป้าหมายอย่างละ 6 สัปดาห์ การเก็บรวบรวมข้อมูลโดยใช้แบบก่อน และหลัง (Pre-test and Post-test) ผลของการวิจัยพบว่าวิธีการเรียนรู้การจดจำคำศัพท์ภาษาอังกฤษทั้งสองวิธีช่วยในการเรียนรู้คำศัพท์ของนักเรียนได้ดีที่สุด นอกจากนี้การวิจัยยังพบว่าการเรียนรู้แบบวิธีหลังไม่ได้มีประสิทธิภาพเหนือกว่าการเรียนรู้แบบท่องจำนักเรียน ข้อเสนอแนะ 1) ทั้งครูและนักเรียนควรหันมาพิจารณาใหม่กับความคิดที่โอนเอียงกับ

¹ หลักสูตรศิลปศาสตร์มหาบัณฑิต สาขาวิชาภาษาศาสตร์ประยุกต์การสอนภาษาอังกฤษ คณะมนุษยศาสตร์และสังคมศาสตร์ มหาวิทยาลัยราชภัฏพิบูลสงคราม

Master of Arts Program in Applied Linguistics in Teaching English, Faculty of Humanities and Social Sciences, Pibulsongkram Rajabhat University

² คณะครุศาสตร์ มหาวิทยาลัยราชภัฏพิบูลสงคราม

Faculty of Education, Pibulsongkram Rajabhat University

³ คณะเทคโนโลยีการเกษตรและอาหาร มหาวิทยาลัยราชภัฏพิบูลสงคราม

Faculty of Food and Agricultural Technology, Pibulsongkram Rajabhat University

*Corresponding author; email: huangjinwei0104@hotmail.com

(Received: 14 June 2018; Revised: 10 July 2018; Accepted: 6 August 2018)

การเรียนรู้คำศัพท์แบบท่องจำ และการตัดสินประสิทธิภาพของการใช้แบบท่องจำโดยผ่านประสบการณ์ส่วนตัว และ 2) สถาบันการศึกษาไม่คุ้มมองข้ามความเหมาะสมและการใช้ได้จริงของการเรียนรู้แบบท่องจำหรือประเมินผลเกินจริงกับการเรียนรู้แบบมีเป้าหมาย

คำสำคัญ: คำศัพท์ ท่องจำ เป้าหมาย ประสิทธิภาพ

Abstract

This study aimed 1) to investigate the degree of effectiveness of both rote learning and meaningful learning on English vocabulary memorization, and 2) to compare the effectiveness of these two learning approaches on English vocabulary memorization for students. The population for this research consisted of 193 students. The participants were 83 students chosen by clustered random sampling. Two groups of students endured 6-weeks of rote learning and meaningful learning respectively. Data were collected through pretest and posttest. Findings revealed that both rote learning and meaningful learning significantly improved students' performance on English vocabulary memorization; moreover, it was discovered that meaningful learning was not more effective than rote learning on English vocabulary memorization for students. Suggestions: 1) both teachers and students should reconsider biased opinions concerning rote learning and judge the effectiveness of its use through personal experience, and 2) educational institutes should not unquestioningly overlook the practicability of rote learning or overestimate the effectiveness of meaningful learning.

Keywords: Vocabulary, Rote Learning, Meaningful Learning, Effectiveness

Introduction

English vocabulary memorization is an important part in the process of learning English as a second language. Vocabulary insufficiency leads to language learning difficulties. Insufficient vocabulary emerges as a major problem among learners who are learning English as a second language, including Thai learners causing their poor language performance in the four skills of reading, listening, speaking, and writing (Nirattisai & Chiramanee, 2014). Mastering vocabulary is one of the most challenging tasks that any learner faces while acquiring another language (Saengpakdeeji, 2014).

The updated 2008 curriculum has various standards regarding students' English communication ability. One of its indicators requires 7th grade students to be able to accurately read texts, tales and short poems aloud by observing the principles of reading (The

Ministry of Education Thailand, 2008). To accomplish this requirement, 7th grade students have to master a considerable amount of English words corresponding to the materials prepared for them to read.

Through interviews with English teachers at Padoongrasdra School, the researcher learned that vocabulary memorization was one of the most common difficulties for 7th grade students at Padoongrasdra School. Based on the Basic Education Core Curriculum (2008) issued by the Ministry of Education in Thailand, 7th grade students are expected to master 1,050-2,250 English words (The Ministry of Education Thailand, 2008). Yet, test results shown that the number of English words that most 7th grade students at Padoongrasdra School mastered was far less than 1,050. For this reason, most students struggled to meet other standards required by the Core Curriculum 2008. Students needed to overcome the daunting task of English vocabulary memorization to master more English words. Therefore, finding an effective approach to learning English vocabulary would be very helpful for 7th grade students at Padoongrasdra School.

Rote learning is the memorization of information based on repetition. The idea is that a person will be able to quickly recall the meaning of material using frequent repetition. Rote learning has been characterized as ineffective. One critical voice is that rote learning is not beneficial for the student and promotes disengagement in the classroom (Team, 2012). Stenger (2014) pointed out the limitations of rote learning. One of the characteristics of rote learning is repetition. However when a learner becomes repeatedly exposed to the same data, it is more likely that small details are added, altered, or even omitted from the original data. West (2011) suggested that rote memorization has the crippling effect on a developing brain.

Meaningful learning is the opposite of rote learning; both lay on contrasting extremes of a continuum. Meaningful learning is a learning method that requires the learner to relate the new knowledge with previous knowledge (Ausubel, 2000).

For the last few decades, meaningful learning has been highly praised, advocated or recommended by some scholars. Antoni Ballester Vallori concluded that meaningful learning implies longer retention than memorizing (Vallori, 2014). Ausubel's inclination towards meaningful learning probably originated in this difference between the two learning approaches (Ausubel, 2000). Ausubel's view of the difference between rote learning and meaningful learning is that in meaningful learning the learner seeks actively to integrate new concepts and propositions with existing, relevant concepts and propositions already known;

however, rote learning lacks this feature. Novak (2010) believe meaningful learning is the learner chooses to integrate, in some substantive way, new concepts and propositions with existing relevant ideas into her/his cognitive structure.

Meanwhile, despite numerous criticisms, rote learning has widely applied in the mastery of foundational knowledge. Rote learning is widely practiced in schools across the world.

This study was intended to search for an effective approach to facilitate English vocabulary memorization for 7th grade students at Padoongrasdra School by comparing the effectiveness of rote learning and meaningful learning and to determine which approach is more efficient.

A similar investigation is Boon's study which compared the effectiveness of rote learning and meaningful learning on the subject of geography. Boon (2008) research concluded that "if topography education is aimed at this factual knowledge of absolute locations, there is no use in investing in meaningful instruction and exercises; on the contrary, rote learning was more effective than meaningful exercises when it came to retention" (2008: 23).

The research objectives

1. To determine the degree of effectiveness both rote learning and meaningful learning have on English vocabulary memorization for 7th grade students at Padoongrasdra School.
2. To compare the effectiveness of rote learning and meaningful learning on English vocabulary memorization for 7th grade students at Padoongrasdra School.

Population and Sample

The population consisted of 193 7th grade students who studied English in the second semester of the 2017 academic year at Padoongrasdra School. The 83 sample were chosen by clustered random sampling. .

Variables

The variables of this study are as follows:

1. The two independent variables are rote learning and meaningful learning approaches.
2. Dependent variables are the learning achievements of the two groups of students.

Research Methodology

1. Instruments

The educational content planned for teaching in this experiment included six topics. There were 82 new words in the glossary, all of them were included in the pretest and posttest. The concrete examples of the content taught for this research were presented to the expert panel for evaluation.

This study was a quasi-experimental research method with pretest, posttest and two independent treatment groups. Both pretest and posttest applied the same test contents; however, the order of the test contents was different. Since this study was to compare the effectiveness of two different learning approaches, the experiment was synchronously conducted on two separated groups. Rote learning and meaningful learning respectively played the role of independent variables in the two treatment groups.

Before each planned lesson was taught, a pretest was conducted to collect scores from the two treatment groups. Pretest results were used to determine whether the English vocabulary levels of the two chosen groups were at the same level. The test papers for the pretest and posttest were presented to the expert panel for evaluation.

A pilot experiment was conducted. Based on the results of the pilot experiment, the researcher consulted with both advisors and experts to decide whether it was necessary to adjust any part of the research plan.

2. Data Collection

This research used four T-tests:

2.1 The Pretest: This pretest was an independent-sample T-test. It compared the mean score of the two treatment groups before the treatment was given.

2.2 Test of Rote Learning Group: This was a paired-samples T-test. This test compared the students' scores from the rote learning group. Each student's pre-treatment scores were paired with their post-treatment scores, and these two sets of scores were compared.

2.3 Test of Meaningful Learning Group: This was a paired sample T-test. This test compared students' scores from the meaningful learning group. Each student's pre-treatment scores were paired with their post-treatment scores, and these two sets of scores were compared.

2.4 The Posttest: This posttest was an independent-sample T-test. This test collected the scores of the two treatment groups after the treatments had been administered, and then compared the mean scores of the two groups.

3. Data Analysis

T-tests were applied to decide the statistical significance of the results of the test scores. Other statistics were also applied to this research, including standard deviation and mean. The level of significance, also known as probability level, used in this research was the .05 level.

Results

1. Both rote learning and meaningful learning were shown to significantly improve students' performance on English vocabulary memorization: The rote learning group posttest mean score increased to 24.000 from the pretest mean score of 18.771. In the paired samples T-test of pretest and posttest scores of the rote learning group, the data analysis reported a noteworthy level of .000.

Table 1 Mean, Standard Deviation and T-value of the Rote Learning Group's Pretest Scores and Posttest Scores (Total scores of the pretest paper and posttest paper were both 30)

Tests	n	\bar{x}	S.D.	t	P-value
Pretest	35	18.77	9.56	-4.28**	.000
Posttest	35	24.00	8.74		

** p < .01

The meaningful learning group posttest mean score increased to 25.458 from the pretest mean score of 18.583. In the paired samples T-test of pretest scores and posttest scores of the meaningful learning group, the data analysis reported a noteworthy level of .000.

Table 2 Mean, Standard Deviation and T-value of the Meaningful Learning Group's Pretest Scores and Posttest Scores (Total scores of the pretest paper and posttest paper were both 30)

Tests	n	Mean	S.D.	t	P-value
Pretest	48	18.58	7.35	-6.84**	.000
Posttest	48	25.45	8.78		

** $p < .01$

2. Meaningful learning is not shown to be more effective than rote learning on English vocabulary memorization for 7th grade students at Padoongrasdra School: The independent sample T-test was used to analyze the posttest data of both sample groups. The results reported a non-significant level of .298 and a small mean difference of 1.64.

Table 3 Mean, Standard Deviation and T-value of the Two Experiment Groups' Differences (Total scores of the pretest paper and posttest paper were both 30)

Groups	n	Mean	S.D.	t	P-value
RL Group	35	5.22	7.21	1.048	.298
ML Group	48	6.87	6.95		

Discussion and Conclusions

1. Findings

The most important finding of this research is that meaningful learning was not more effective than rote learning on English vocabulary memorization for 7th grade students at Padoongrasdra School.

To some extent, this finding unexpectedly disproved the dominant assertion that meaningful learning is better than rote learning. Nonetheless, by no means is this finding adequate to generate the conclusion that meaningful learning is not more effective than rote learning in other settings (i.e. other than the setting of English vocabulary memorization for 7th grade students at Padoongrasdra School). In case this experiment is replicated in a different setting, for instance, with different subjects or other areas of English learning, it is highly possible that different results could be obtained.

There is another interesting finding from this research. It was found that both rote learning and meaningful learning were effective in English vocabulary memorization for 7th grade students at Padoongrasdra School. There are some noticeable confirmations and contradictions when comparing these two main findings with those of similar research. Boon (2008: 23) research concluded “if topography education is aimed at this factual knowledge of absolute locations, there is no use in investing in meaningful instruction and exercises; on the contrary, rote learning was more effective than meaningful exercises when it came to retention”. Findings of this research confirm Boon’s findings that meaningful learning is not more effective than rote learning and also disagree that meaningful learning is more effective.

Findings of this research directly answered the questions under investigation. According to the findings, both rote learning and meaningful learning are reliable approaches for students to memorize English vocabulary, and rote learning is not less effective than meaningful learning regarding this task.

2. Implications

This study expected to benefit teachers who teach English as Second Language as well as students who struggle to overcome the barrier of English vocabulary retention. This study also broke the stereotype that compared to meaningful learning, rote learning is inferior. One of the most meaningful contributions this study brought to light is that it provides braces to refute prejudices against rote learning and also gives support for teachers and students to justifiably apply rote learning to English vocabulary memorization.

This study helped to confirm the belief that foundational knowledge like language skills can be learned by rote (Battino, 1992). However, findings did not list meaningful learning as completely useless to foundational knowledge learning, it was just not shown to be more effective than rote learning.

The originality of this study is comparing the effectiveness of rote learning and meaningful learning by applying both styles to the memorization of English vocabulary. Studies done by others prior to this research involved one of these two learning approaches; some studies explored other features of both learning approaches from different perspectives. Another contribution of this study is that it adds “English vocabulary memorization” to the framework of “comparing rote learning and meaningful leaning.”

Both teachers and students should reconsider biased opinions concerning rote learning and judge the effectiveness of its use through personal experience.

3. Recommendations

Recommendations on research design: In future research that focuses on comparing the effectiveness between the rote and meaningful learning approaches, this researcher recommends allocating a longer duration (at least eight weeks) for treatment and scheduling multiple posttests within that time intervals. Longer treatment duration may increase the credibility level of the research. Multiple posttests within a longer time interval may also counter the effects of the “Forgetting Curve” by measuring the effectiveness over a longer amount of time. In this way, the two learning approaches under study can be tested more objectively.

Recommend directions for future research are to compare the effectiveness of rote learning and meaningful learning on other aspects of English learning. For instance, compare the effectiveness of these two learning approaches on English grammar learning or reading practice. Another more challenging, yet valuable, research direction might be to determine what impacts rote learning has on the human brain.

References

Ausubel, D. P. (2000). *The Acquisition and Retention of Knowledge: A Cognitive View*. Springer Netherlands Dordrecht: Kluwer Academic Publishers.

Battino, R. (1992). On the importance of rote learning. *Journal of Chemical Education*, 69(2), 135-137. Retrieved June 23, 2011, from <https://pubs.acs.org/>

Boon, F. A. (2008). *Comparing the effectiveness of rote and meaningful instruction and exercises for learning topographical facts* (Master’s Thesis). University of Utrecht. Retrieved from <https://is.gd/IDNAmb>

Nirattisai, S., & Chiramanee, T. (2014). Vocabulary Learning Strategies of Thai University Students and Its Relationship to Vocabulary Size. *International Journal of English Language Education*, 2(1), 273-287.

Novak, J. (2010). Learning, Creating, and Using Knowledge: Concept maps as facilitative tools in schools and corporations. *Journal of e-Learning and Knowledge Society*, 6(3), 21-30.

Saengpakdeejit, R. (2014). Strategies for Dealing with Vocabulary Learning Problems by Thai University Students. *Humanities, Arts and Social Sciences Studies (HASSS)*, 14(1), 147-167.

Stenger, M. (2014). *The Serious Limitation of Rote Memorisation You Probably Don't Know About (And It's Undermining Learning)*. The serious limitation of rote memorization you probably don't know about (and it's undermining learning). Retrieved September 14, 2014, from <https://is.gd/CfeLPs>

Team, R. 2. (2012). *What is Rote Learning-and is it Effective? A Battle Between Memory and Intelligence*. What is rote learning? A battle between memory and intelligence. Retrieved November 6, 2012, from <https://is.gd/1CeU5q>

The Ministry of Education Thailand. (2008). *The basic education core curriculum B.E. 2551 (A.D. 2008)*. Retrieved from <http://www.act.ac.th/document/1741.pdf>

Vallori, A. B. (2014). Meaningful Learning in Practice. *Journal of Education and Human Development*, 3(4), 199-209.

West, M. (2011). *Visual and auditory learning-how to teach it*. Retrieved November 8, 2011, from <https://www.youtube.com/watch?v=KyAaxHvUGog>