

Project-Based Learning As A Tool to Develop English Writing Skill

^[1] Khanaphod Phumsit

^[2] Samran Tao-ngoen

^[1] Mahachulalongkornrajavidyalaya University, Thailand

^[2] Phetchabun Rajabhat University, Thailand

E-mail: ^[1] khanaphos999@yahoo.com, ^[2] samran056@yahoo.com

ABSTRACT

The purpose of this research was to propose the results of Project-based learning as a tool to develop English writing skill. Action research was used for the research design. Data were collected from 50 students from primary schools in Pathum Thani province. Data then were analysed by using descriptive statistics, Pearson Correlation Coefficient, and Confirmatory Factor Analysis (CFA). Results indicated that the measurement model for project-based learning as a tool to develop English writing skill for students fit with empirical data. Results showed that $\chi^2 = 2.74$, $df = 2$, $p = .254$, $GFI = .983$, $AGFI = .915$, $RMSEA = .069$. It can be interpreted and proved that Project-based learning is the effective tool to develop English writing skill of student from primary schools in Pathum Thani province. Therefore, project-based learning is still necessary for the next generation of education including English writing skill.

Keywords

Project Method, Project-Based Learning, Writing Skill.

INTRODUCTION

The word “project-based learning” comes from the word “Project method”. The term of “Project method” is the use of projects in teaching and learning. It was invented by David Snedden for teaching science in the United States. Later, a student of John Dewey named William H. Kilpatrick [1] continued to use this method and developed it until it became widely popular, and was presented in a book called “The Project Method” published in 1918. This method is adapted from John Dewey’s Problem method of teaching, today we are known as project-based learning.

Project-based learning management refers to learning management that is stimulated by teachers in order to bring attention from students to use in activities, searching for knowledge by the students themselves leading to increasing the knowledge gained from the practice listening, and observing from experts. The students learn through the process of working in groups to lead to new knowledge conclusions. The project preparation process is written and the results of the activities were tangible and the students’ own work. [2]

Also, Project-based learning is a form of child-centered approach that allows students to work according to their skill level. It is of interest and comfort that students are given the right to choose what questions to ask and what to produce from this work where teachers act as equipment supporters and provide experiences for students, support problem solving and motivate students.

Learning here is an English-based learning process, so it is a process of developing learners and there are some things that should be considered as below.

Project-based learning management has different processes and procedures according to each theory. In this project-based learning management manual, I present 3 concepts that have been considered appropriate for the Thai context: use the project of the Secretariat of the Education Council and the Ministry of Education 2007 [3] 2. Stages of learning management according to the model “Bike of Learning PBL” of Vichan Panich [4] and 3. Project-based learning management; The results obtained from the project to build knowledge sets to enhance skills of children and youth in the 21st century: from the success experiences of Thai schools of Dusadee Yolao and others [5] are as follows: 1) Presentation stage refers to the step that the teacher gives the learners to study the knowledge sheet, set the situation Study the situation, play a game, look at the pictures, or the instructor uses setting techniques, ask questions about the learning subjects specified in each learning management plan, such as curriculum-based learning and project-step learning, to be used as a guideline for planning learning. 2) Planning stage refers to the stage where students work together to plan by brainstorming, discuss the group’s conclusions. to use as a guideline for practice. 3) Action stage refers to the stage in which the learner performs the activity, write a summary report on the results of joint planning. 4) Evaluation stage means the stage of measurement and evaluation according to actual conditions by achieving the learning objectives set out in the learning management plan, with teachers, learners, and peers evaluating.

Project-based learning is an important foundation. It is a learning process that focuses on greatly improving the teaching and learning of English, especially writing skills.

White and Arndt [6] said that writing is not just the transmission of language into characters, but a thinking

process, which requires a lot of intellectual effort. Both English learners are foreign languages and native speakers encounter the same problem. In addition, writing must be compiled and consistent without seeing the recipient. The only tool that can be used to communicate is written language. Therefore, the author must try to build a context of the written work. Including the written text must be clear and suitable for the type of substance to achieve the purpose of that writing.

Heaton [7] said that writing has four elements: 1) grammar is the ability to use the language correctly according to the language structure; 2) language style is the ability to use selection, proper words, sentences, expressions, rhetoric; 3) language mechanics, which is the ability to use language correctly, such as punctuation; and 4) judgment, which is the ability to write according to the objectives set by considering reader and arranging ideas.

RESEARCH OBJECTIVES

The purpose of this research was to propose the results of Project-based learning as a tool to develop English writing skill.

RESEARCH METHOD

Action Research was used for research design following the step of PAOR which refers to Plan, Act, Observe, and Reflect. The target group of the research was 50 students from primary schools in Pathum Thani province. The tools for teaching and instruction was project-based learning activities, and the tool for data collection was scoring rubric criteria of writing assessment. Data were analyzed using descriptive statistics, Pearson Correlation Coefficient, and Confirmatory Factor Analysis (CFA). The step of PAOR can be designed as the following procedures.

Plan: Study the literature review concerning with scoring rubric, design the scoring rubric criteria.

Act: Employ the scoring rubric criteria to assess students' writing ability.

Observe: observe students' writing ability and collect data.

Reflect: analyze data and reflect from results.

The Analysis of Construct Validity

The construct validity was measured by Confirmatory Factor Analysis (CFA). To measure the construct validity of the obtained data, the researcher has analyzed the correlation between variables to obtain the matrix of correlation coefficient between variables in each construct. The purpose is to check whether the components of each variable, the data is suitable for factor analysis or not. The coefficient of correlation describes the relationship between two variables. Interpreting the correlation coefficient, low or near zero values indicates weak relationship or less relevant or no correlation, while those nearer to +1 or -1 suggest stronger relationships. It is not necessary to apply the matrix that has no correlation coefficient to measure the factor analysis. For the hypothesis statistic of Bartlett's Test of Sphericity and Kaiser Index (Kaiser – Meyer – Olkin Measure of Sampling Adequacy = KMO), KMO should be close to 1. If the value is less, the correlation between the variable is less, and it is not

suitable for measuring factor analysis. The details of KMO index is between 0.00 – 1.00 as below criteria.[8]

Index of Kaiser – Meyer – Olkin (KMO)	Suitable for CFA
KMO > .90	Marvelous
.80 < KMO < .89	Meritorious
.70 < KMO < .79	Middling
.60 < KMO < .69	Mediocre
.50 < KMO < .59	Miserable
KMO < .50	Unacceptable

To examine the construct validity and analysis the model fit by using statistical computer program requires the preparation of correlation coefficient matrix between variables of each construct. Interpreting the correlation coefficient, the researcher used the interpretation of the correlation dimension as follows.

Correlation Score	Description
0.0 - 0.3	Correlation is very low
0.3 - 0.5	Correlation is low
0.5 - 0.7	Correlation is moderate
0.7 - 0.9	Correlation is high
0.9 - 1.0	Correlation is highest

Construct reliability should be 0.7 or higher to adequate the convergence or internal consistency. To establish the convergent and discriminant validity of the studies constructs, and find the correlation coefficient matrix between variables of each construct, the researcher analyzes the Confirmatory Factor Analysis (CFA) by using data from the Scoring Rubric Criteria distributed to 50 samples.

RESULTS

The concept of Project-based learning as a tool to develop English writing skill using scoring rubric criteria of writing assessment for students consisted of criteria which are Content/ Organization, Grammar, Mechanics, Unity and cohesion. Analysis results of the scoring rubric model of writing assessment for students. Construct validity of writing skill (WRITING), the analysis of the correlation between variables using Pearson's correlation coefficient, the variables that identified component of writing skill (WRITING), the coefficient of correlation was between .746 - .796, the statistical significance level at .01. The correlation between variables was positively correlated from moderate to high. The highest correlation coefficient were Content/Organization (B1) and Mechanics (B3), and followed by Content/Organization (B1) and Grammar (B2). Bartlett's Test of Sphericity was 253.736 (p = .000) indicating that the matrix correlation coefficient differs significantly from the identity matrix. Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was equal to 0.851 indicating that the observed variables of data are sufficiently correlated to analyze the confirmatory factor analysis which indicating as below table.

Table 1 Mean, Standard Deviation, Pearson Correlation Coefficient between observed variables of Writing Skill (WRITING)

Variables	B1	B2	B3	B4
B1	1.000			
B2	.791**	1.000		
B3	.796**	.753**	1.000	
B4	.746**	.771**	.785**	1.000
Mean	3.863	3.813	4.063	3.898
SD	0.896	0.918	0.828	0.869
Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO)	= 0.851			
Bartlett's Test of Sphericity Approx. Chi-Square	= 253.736, df = 6, Sig.	= 0.000		

**Correlation is significant at the .01 level, n = 50, scoring 5 level.

B1=Content/Organization, B2=Grammar, B3=Mechanics, B4=Unity and cohesion

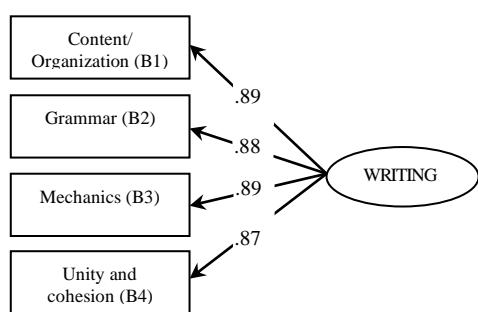
The measurement model for project-based learning as a tool to develop English writing skill for students fit with empirical data. Results showed that $\chi^2 = 2.74$, df = 2, p = .254, GFI = .983, AGFI = .915, RMSEA = .069. Analysis results can be shown as Table 2 and Figure 1.

Table 2 Confirmatory Factor Analysis (CFA) of Writing Skill (WRITING)

Variables	Factor Loading		t	R^2	Factor Score Coef.
	B(beta)	b(SE)			
B1	.89	.79(.08)	9.93	.79	.32
B2	.88	.80(.08)	9.69	.77	.28
B3	.89	.73(.07)	9.91	.79	.34
B4	.87	.75(.08)	9.56	.75	.28

$\chi^2 = 2.74$, df = 2, p = .254, GFI = .983, AGFI = .915, RMSEA = .069

Remark: **p<.01



$\chi^2 = 2.74$, df = 2, p = .254, RMSEA = .069

Figure 1 Confirmatory Factor Analysis (CFA) of Writing Skill (WRITING)

DISCUSSION

Project-based learning is the effective tool to develop English writing skill of student from primary schools in Pathum Thani province. Therefore, project-based learning is still necessary for the next generation of education including English writing skill. It is related to articles of Thananya Gujral and Nitida Adipattaranan [9], the purpose of this research was to compare English reading skills and critical thinking skills of learners before and after using project-based learning and to study English writing skills of learners after the study using project-based learning. The research found that English reading skills and the students' critical thinking skills were significantly higher after using project-based learning at the .05 level, as well as the learners' English writing skills at the pass-hundred threshold 60 each and has improved accordingly after using project-based learning. In addition, it is also related to Prapatsorn Chaitha et al. [10] on topic "Developing Reading for the Main Idea Skill, Writing Skill, and Presentation Skill through the Use of Project-Based Learning of Matthayomsuksa 3 Students". The purpose of this research was to develop reading comprehension skills, writing skills and presentation skills. English using a project as Project-based learning students in secondary school 3 and to study the satisfaction of Matthayomsuksa 3 students towards learning English courses. The results showed that the average writing scores of students who received Project-based learning lessons overall were higher than those who received regular lessons.

KNOWLEDGE FROM RESEARCH

Knowledge from research showed project-based learning was an effective tool to develop English writing skill as below figure.

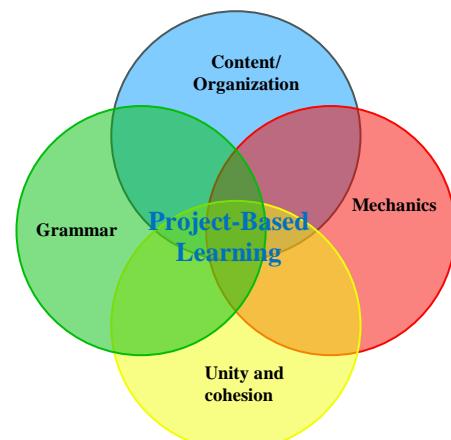


Figure 2 Knowledge from Research

CONCLUSION

Organizing learning activities that focus on learners is one form that allows learners to do practical work on their own or groups in the form of study, exploration, research, experimentation, invention students use their knowledge to deal with problems rationally from the problems they receive or are interested in. There is greater self-control in learning by teachers shifting their roles from being a teacher to a facilitator or a guide to design the learning process for students. Learn to work as a team, motivate, advise and give advice to complete the project. Good project design encourages active research. In addition, students will be practiced by using critical thinking & problem-solving skills, communicating skills, collaboration skills, especially the writing skill mentioned above, which is suitable for adapting to changes in the 21st century world, the modern education world demands innovation and creative use of technology. Therefore, project-based teaching and learning is still necessary for the next generation of education especially in teaching English that must develop the competence and potential of learners in the future.

REFERENCES

- [1] Becketts, G.H. "Teacher and Students evaluations of project-based education (electronic version)". TESL Canada Journal, 19 (2): 52-66 (retrieved at September 14, 2022).
- [2] Dusadee Yolao et al., "A study of PBL learning management derived from a knowledge-set project to enhance 21st century skills of children and youth: from experiences of success in Thai schools". Bangkok: Thiphawisut Ltd., 2014, p.10.
- [3] Office of the Education Council Ministry of Education, "Education in Thailand 2019-2021", Bangkok: Office of the Education Council, Ministry of Education Kingdom of Thailand, 2021.
- [4] Wichan Panich. "Ways to create learning for students in the 21st century". Learning Innovation Journal. Walailak University, 1(2), 3-14., 2015, p.23.
- [5] Dusadee Yolao et al., "A study of PBL learning management derived from a knowledge-set project to enhance 21st century skills of children and youth: from experiences of success in Thai schools". Bangkok: Thiphawisut Ltd., 2014, p.10.
- [6] White, R., & Arndt, V. "Process Writing". Harlow, UK: Longman, 1991, p.4.
- [7] Heaton, J. B. "Classroom testing". London: Longman, 1990, pp.138-139.
- [8] Boonjai Srisatidnarakul, Development and Validation of Research Instruments: Psychometric Properties, (Bangkok: Chulalongkorn University Printing, 2012, p.173.
- [9] Thananya Gujral and Nitida Adipattaranan. "Using Project-Based Learning to Enhance English Reading, Writing, and Critical Thinking Skills Among Grade 11 Students". Veridian E-Journal, Silpakorn University, ISSN 1906 – 3431.
- [10] Prapatsorn Chaitha et al. "Developing Reading for the Main Idea Skill, Writing Skill, and Presentation Skill through the Use of Project Based Learning of Matthayom 3 Students". Graduate School Journal Volume 10 Number 3 September - December 2017.