

## **Project-Based Learning and Problem-Based Learning for EFL Students' Writing Achievement at the Tertiary Level**

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### **Abstract**

The recent trend of teaching English as a foreign language in Indonesia has focused on the use of scientific-based approach which led teachers to use two methods, namely project-based learning (PjBL) and problem-based learning (PBL). This research is concerned with investigating the effectiveness of both PjBL and PBL when used with students at the tertiary level. The subjects were 78 participants assigned to two intact-groups, with 39 students each. Group 1 was taught with the use of PjBL and Group 2 with PBL. The findings revealed that (1) PjBL and PBL methods were able to improve the students writing achievements; (2) students' writing achievements in both groups were not significantly different and (3) the students perceived both PjBL and PBL as interesting. They found the PjBL and PBL instruction offered a new mode in the teaching process. From the students' responses, PjBL enabled them to think contextually about given problems, work together in a group, develop their critical thinking, and encourage them to be more explorative. Similarly, PBL was perceived by the students as engaging them in the learning process and helping them to think more critically.

**Keywords:** *project-based learning (PjBL), problem-based learning (PBL), EFL tertiary level, writing achievement*

### **1. Introduction**

The dominant pedagogy in the recent trend of teaching English as a foreign language in Indonesia has focused on the use of scientific-based approach. This approach has led educational practitioners to use two methods, namely project-based learning (PjBL) and problem-based learning (PBL). The terms project-based learning and problem-based learning are each used to describe a range of instructional strategies. The breadth of their respective definitions, their conceptual similarity, and the use of the short term PBL result in some confusion in the literature (Donnelly & Fitzmaurice, 2005). Thus, this research is concerned with investigating effectiveness of both PjBL and PBL when used with students at the tertiary level.

The latest EFL issue has dealt with learners' difficulty in mastering English, particularly in writing skills development which requires cognitive and physical activities to produce and combine letters as well as certain aspects of linguistics involving words, spellings, and sentence structures (Stoddard and Waters, 1998). In addition, EFL learners have to struggle with acquisition of grammar, syntactic structure, vocabulary, rhetorical

structure and idioms of the second language (Nik et al., 2010). In tertiary education, such problems still persist due to learners' lack of exposure to writing practices in their secondary years (Ramadhani, 2014). Writing skills are therefore of prime importance to learners at the tertiary level of education, for it allows individuals to convey thought, express feelings, and deliver messages.

The literature review shows urgency for teachers to help their students improve their writing skills. Research has revealed many attempts at improving students' writing achievement. These attempts vary from the use of specific techniques, such as concept mapping (Maloho, 2009), Jigsaw (Zahrah, 2009) to the use of teaching media i.e., picture series (Novita, 2014), and webquest (Almasri et al., 2011). Moreover, some researchers also examined effectiveness of several methods used in teaching writing. Among these methods are project based learning (Thitivesa, 2014), and problem based learning (Chikita et al., 2013).

Project based learning or PjBL is defined as a learning model which gives students a chance to learn by doing a project (Thomas, 2000). It requires students to plan, implement, and evaluate projects that have real-world applications beyond the classroom (Westwood, 2008). This method is learner-centered in that students pose one question or more and work under the teacher's guidance (Bell, 2010). Several benefits of project-based learning enumerate in that students will be able to solve problems during learning, make decision and develop their critical thinking ( Ndraka, 1985).

PBL is defined as a pedagogical strategy which uses real-world situations as the basis for development of content, knowledge, and problem-solving skills (Mayo et al., 1993). It helps students to build reasoning and communication skills needed for success (Duch et al., 2001). The study by Weissinger (2004) also confirms that not only does PBL encourage students to develop critical thinking for their success in learning; but it also trains the students' problem-solving skills that they can carry with them throughout their lifetime. Furthermore, problem-based learning also provides teachers with a variety of learning opportunities, acknowledges their personal beliefs and experiences, and expands their knowledge and skills as they engage themselves in learning (Levin, 2001). The classroom practice of this method is usually conducted in groups of students. Hence, learners can work together, share their expertise, and learn from each other.

Given the definition of both learning methods, it can be seen that PjBL and PBL share similarity in terms of their classroom application. Both methods usually divide students to work in groups and have the final product as the result of learning. However, they differ in the final product: PjBL yields concrete products or performances, but PBL simply proposes solutions of problems.

Various studies showed both PjBL and PBL with their own benefits for teaching. Leong & Patrick (2009) conducted a research into the power of PBL. They found that students were generally enthusiastic and interested in the PBL assignment. They also managed their own learning through the learning process. Jiriyasin (2011) reported PBL as having positive effects on the students' oral performance. Lin (2015) conducted a similar

research in the elementary school context. It was found that PBL fostered the students' ability to learn and use vocabulary in context. Rahman et al. (2001) found PBL as having clear procedures for teachers who wish to implement it. In PjBL, Foss et al. (2009) studied effectiveness of PjBL in a short-term-intensive program and found its viability and flexibility as alternatives to traditional intensive English coursework. Bas (2011) asserted that PjBL learning was in support of development of students' academic achievement and positive attitude levels. Gulbahar and Tinmaz (2006) conducted similar research at the undergraduate level and revealed that the PjBL created satisfactory results in the students' learning. Soleimani et al. (2015) investigated the EFL context in Iran and PjBL as having positive effects on the learners' reading ability as well as vocabulary acquisition.

The aforementioned studies point to effectiveness of PjBL and PBL in students' learning. However, very few researchers have examined effectiveness of both learning methods at the tertiary level, particularly as focusing on students' writing achievement in the Indonesian EFL context. As reported by Helle et al. (2006), the majority of articles on PjBL described implementation, while PBL had a dominant role at the elementary level of education Erdogan (2015). Departing from these research orientations, the researchers would like to examine the use of PjBL and PBL in teaching writing at the tertiary level and students' reactions to both learning methods.

## **2. Research Objectives**

The objectives of the study were (1) to find the effects of PjBL and PBL on students' writing achievement, (2) to detect significant differences, if any, in students' writing achievement as taught by PjBL and PBL, and (3) to obtain data on the students' perception in terms of attitude toward the method. It should be noted that both methods carried several activities to support the students' learning process of writing.

## **3. Research Methodology**

The subjects in the study were two classes, consisting of 39 students in each; they were second year students of one university in Jombang, East Java.

The research instrument were (1) the students' pre-and post-test on writing an argumenative text using the writing criteria after Heaton (1991) (see Appendix 2), which cover content, organization, language use, vocabulary and mechanics, (2) the lesson plan containing stages in PjBL after Katz (1994), and in PBL after Boud & Felletti (1997) (see Appendices 1A and 1B), and (3) interview questions with a focused theme on students' attitude toward PjBL and PBL (see Appendices 3A and 3B). The instruments were all validated by language specialists prior to their use in data collection.

## **4. Data Collection**

The subjects' writing skills were assessed by the constructed pretest containing criteria in writing after Heaton (1991). In five meetings, all subjects were assigned the lesson plan with learning activities in stages in PjBL after Katz (1994), and in PBL after Boud & Felletti (1997). Their writing products were evaluated and the post-test was administered to classify the subjects into high, mid, and low achievers (See scoring criteria in Appendix 4). It should be noted that the pre- and post-tests assigned the students to write an argumentative

text covering, introduction (thesis), arguments, and reiteration or recommendation. After the post-test, the researchers selected for interview six students in each group representing writing performances as high, mid and low achievers. The recorded interviews only dealt with one theme on the students' attitude toward the use of PjBL and PBL.

## 5. Data Analysis

The process of analyzing the data covered conducting the independent t-test on the pre- and posttest scores. There were two other tests preceding the t-test computation. These tests were the normality test and the homogeneity test. The researchers related the obtained test scores to the interview data which were transcribed and classified by the researchers. It should be noted that all data transcriptions were made anonymous for confidentiality of the interviewees' identity.

## 6. Results and Discussion

The findings are reported in three sections: the effect of PjBL and PBL on students' writing achievement covering the students' initial skills, the effect during the treatment and the statistical computation of the effect of both methods on students writing achievement. Then the researchers examined differences in students' writing achievement via PjBL and PBL and the students' perception toward both methods.

### 6.1 The Effects of PjBL and PBL on Students Learning Achievement

Prior to giving a learning treatment to PjBL and PBL groups, the researchers conducted a pre-test to determine the initial levels of the students in both groups. The descriptive statistics in the pre-test results carried the average score of the PjBL group at 71.71 and that of the PBL group at 72.69. The maximum score of PjBL was 92.00 and the minimum at 43.00. As for the PBL group, the highest score in PBL group was 94.00 and the minimum at 45.00. The t-test analysis (two tails), showed the t-value at -.410 with the degree of freedom of 76, and the probability (two tails) was .68 ( $t = -.41$ ,  $df = 76$ ,  $p = .68$ ). Since the p-value was higher than .05, it indicated no significant difference between pretest results of the PjBL and PBL groups. Hence, these groups were claimed as valid subjects for the study.

The treatment of PjBL and PBL lesson plans with learning activities in specific stages was after Katz (1994) and Boud & Felletti (1997), respectively. The implementation of both methods yielded results similar to those findings reported by earlier researchers. For example, in the discussion stage, seeking an ideas and developing argumentative in the initial phase of the project developed the students' critical thinking, as in the study by Beckett (1999). In the feedback-giving stage, peer written feedback for individual writings as well as oral feedback during project presentations fostered the students' learning process, as previously reported in the work by Brown et.al. (1993) and Fragoulis & Tsiplakides, (2009). Both PjBL and PBL methods used in the study appeared to increase the students' social and cooperative skill, as well as their motivation and learning enjoyment (Coleman, 1992; Larsen-Freeman, 2000; Lee, 2002).

To sum up, the process of PBL implementation allowed students to be more engaged and self-directed in their classroom discussion Tan (2004). The students were given a chance to find a solution to the problem provided by the teacher, and in turn were able to develop

their critical thinking and generate creativity (Trekles, 2012). Through reading and summarizing in the project meetings, the students were empowered and self-directed (Dolmans et al., 2005), as well as engaged in the overall learning process of PBL (Kumar & Rafaei, 2013).

In examining effectiveness of PjBL in improving students writing achievement, the researchers compared the pre-test and post-test scores earned by the students. This was to determine a significant difference between them, if any. The t-test analysis showed the t-value at -5.44 with the degree of freedom of 38 and the probability significance (two tails) at .000. Since the p-value (two tails) was lower than .05, it pointed to a significant difference between the pretest and the posttest results. This finding on the improvement of writing achievement through PjBL appeared to correspond with the previous findings by Hilton-Jones (1988) regarding writing skill practices, followed by the advantage of PjBL in improving secondary level students' writing achievement Rerg-Anan (2011).

Similar to PjBL, the students' pre-test and post-test scores of the PBL group secured a t-value to find out whether there was any significant difference in writing achievement before and after the use of PBL. The computation indicated the t-value at -2.62 with the degree of freedom of 38 and the value of probability significance (two tails) at .01. Since p-value (two tails) was lower than .05, it indicated a significant difference between the pre- and post-test scores in PBL group. Such findings corresponded with the results of the study conducted by Hussein et al. (2012) reporting a significant difference in Malaysian EFL students' essay writings from their beginning task (essay one) to the last task (essay three). The PBL method appeared to enhance students' writing skills, as previously reported by Kumar & Refaei (2013).

## 6.2 The Difference of Students Writing Achievement Being Taught by PjBL and PBL

The difference of students' writing achievement being taught PjBL and PBL was based on the students' argumentative texts. The students were assigned to write an argumentative text covering, introduction (thesis), arguments, and reiteration or recommendation. It was found that their writing achievement and their range from high to low achievers in both groups were nearly similar. The mean of PjBL group was 79.03 (S.D. 8.85), slightly lower than that of the PBL group at 80.05 (S.D. 8.34). Moreover, the independent t-test carried a t-value at .53, the degree of freedom at 76 and two-tailed p-value at .60 which exceeded the alpha .05. It was therefore concluded that there was no significant difference in students writing achievements between those in the PjBL and PBL groups.

The researchers noted after Larmer (2014) that both methods --PjBL and PBL--shared similarities in the use of classroom techniques on open-ended tasks. The students' similarities in argumentative writing performance could have stemmed from a limited treatment time of five meetings each in PjBL and PBL. Another explanation for such similarities in writing performances could be accounted for by the fact that university students might be familiar with both PjBL and PBL, and thus the methods perhaps had no direct effect on their argumentative writing. The point on learners' familiarity with both methods was also reported in the study by Mills and Treagus (2003) that university students, particularly in the

area of engineering, were readily adopting and adapting both PjBL and PBL in their engineering education context.

### 6.3 The Students' Perception toward PjBL

Most students said that the instruction was different from their previous teaching process. They also perceived PjBL as *an interesting method* to be used in the classroom. This was stated by high, mid and low achievers, as illustrated by exemplified excerpts in their original version without editing.

#### **Excerpt 1**

It was interesting because my classroom was usually a boring classroom where teacher explains and students listen **(PjBL-H1)**

I had a nice experience during learning argumentative writing. It was good when I learned about argumentative using project based learning **(PjBL-H2)**

The class was very interesting because the steps are clear so it is easy to understand the process. **(PjBL-L1)**

The rest of the students also expressed similar opinions. One mid-achiever and one low-achiever were positive toward PjBL for its *clarity of the learning steps*. Some students also mentioned that the method was helpful in working with their peers and consequently improving their writing skills.

In relation to *group work*, most of the students agreed that PjBL was beneficial to their learning. A few low-achievers and one high-achiever students explained that working in group facilitated them in exchanging ideas with others to produce a good project. This finding was related to the benefit of group work in opinion exchanges among learners as earlier reported by Brown (2001). One drawback of group work, however, could stem from dominance of strong or high-achievers in group discussion Brown (2001). This type of drawbacks should deserve attention from teachers when monitoring project-based group discussion to ensure that all types of learners be guided to have sufficient participation, particularly those low-achievers should not be left behind.

Regarding *the advantages and disadvantages* of PjBL, responses from the students varied as shown in Excerpt 2:

#### **Excerpt 2**

I could learn more knowledge by using project based knowledge because when I studied argumentative using project based learning I must read some references not only about components of argumentative but also the information other than English education. **(PjBL-H1)**

I could be more critical in stating the arguments. And I also find many references to support the arguments. **(PjBL-M2)**

I understood how to write argumentative and getting comments for my friends **(PjBL-L1)**

The items in Excerpt 2 reflected students' preference for PjBL as the method supporting their critical thinking; such a point was also reported in the work of Railsback (2002). The students were motivated when required to search for new ideas from references for their project. This point was also emphasized by Railsback (2002) who asserted that PjBL was to increase students' motivation as well as secure feedback from their peers.

As for the identified disadvantages, the interviewed students gave information on difficulty encountered during the teaching and learning process, as seen in Excerpt 3:

**Excerpt 3**

We have to spend much time writing, revising and making the magazine. **(PjBL-H1)**

I feel difficult when give a lot of explanations to describe the points of my reasons. **(PjBL-M2)**

The difficulties are sometimes because i was not clear with the instruction that was given. **(PjBL-L2)**

The students' comments pointed to difficulty in *time management*. Making a project could be somehow time-consuming. As mentioned in the study by Larmer (2014), one of the weaknesses of PjBL was in time allocation and time management. In particular, low-achievers found difficulty in understanding English instructions for the assigned project work.

The majority of interviewed students were positive toward PjBL ; however, they would like to have more time allocated to write and design the layout for the final product in the form of a magazine, for instance. Some interviewees questioned the difficulty level of the assigned final products. In this regard, project topic selection as relevant to learners' language abilities should deserve attention from the monitoring teacher as well. Such a point was cautioned in the study by Katz (1994) in that project topic selection should be geared toward learning, not for examination by all means.

#### 6.4 The Students' Perception toward PBL

Generally, all achievers--high, mid and low--agreed that this teaching method was suitable for learners in seeking a solution to an identified problem, as shown in Excerpt 4:

**Excerpt 4**

In my opinion, problem based learning is learning strategy that can help students to analyze some problem in learning process. It can be individual or group problem. **(PBL-H1)**

The learning method was about we learn from problem and find solution. The problem is sometimes given by teacher and the solution is from our analysis or discussion. **(PBL-M2)**

As I know, the method was to help us increase our thinking and solving a problem. **(PBL-L1)**

It can be seen in Excerpt 4 that the students generally considered the method as helpful in dealing with the problem for a good solution. All achievers also stated that this method *supported their thinking* about the problem either individually or in group. This point corresponded with PBL findings by Mayo et al. (1993) who asserted that PBL was based on

a learning strategy in dealing with a real world situation to develop contents or selected knowledge with learners' problem-solving skills.

The high-achiever students said in their interview that working in group unexpectedly created other problems; such as, not all the members of the group were eager to do the task and the lack of participation from some group members hindered them from working faster. Interestingly, one low-achiever student also expressed the same opinion. As pointed out by Brown (2001), some competitive students could be reluctant to share information with others in group work.

In addition to group work, the issue on *confidence* in doing group work was examined when the researchers interviewed those selected achievers. It was found that the high- and mid-achievers were confident when working with their peers. This finding was in contrast with low-achievers who tended to be less assertive in expressing their viewpoints to their peers.

As for the advantages and disadvantages of learning in PBL, the interview data revealed that the students believed in the method as *increasing their writing ability*. This was reported by all interviewees, regardless of their level, as shown in Excerpt 6.

#### **Excerpt 6**

Yes, I get. In this learning, I don't only listen and write then remember the material. But I discuss actively, communicate with my friend, look for some source and then I process the sources in different ways and the last I conclude the result of the material. **(PBL-H1)**

Of course I got many advantages in this learning process because this method makes me smarter to criticize some issue or problem and related it with my knowledge and other sources that can support my ideas. **(PBL-H2)**

Yes, problem based learning increases my motivation in writing because I can write simply about the solution from problem that we find in life. I also get advantage like new vocabulary because I read the article from teacher about something new other than education. **(PBL-M2)**

As seen in Excerpt 6, the students mentioned the advantage of learning with the use of PBL. Those benefits included their improved writing skills, enriched vocabulary, expanded knowledge, and critical thinking skills development. These benefits were previously identified by Duch et al. (2001) that PBL helped students to think critically. (Boud & Felletti, 1997). highlighted the learning stage in information search and subsequent gains in new vocabulary. In addition, Kumar & Rafaei (2013) asserted that PBL enhanced the students' ability to write and such development was suitable for composition courses at the intermediate level.

The disadvantages of PBL were informed by the interviewed students in terms of learning difficulties encountered, as shown in Excerpt 7.

### **Excerpt 7**

In finding article is the most difficult, because I have to understand the core problem and find the right article to support my solution. **(PBL-H1)**

The problem in learning in writing class is when discuss in small group, some of my friends just follow without think of the problem **(PBL-M1)**

The points given by the students when encountering difficulties were both individual and collective in nature. Individual exploration was regarded as difficult; such a point was also reported in the study by Ommudsen (2011). As for difficulties in doing group work, some students were reluctant to get involved in group discussion. Boud & Felletti (1997) also touched on such a limitation in group work in that some students were not aware of the requirement in following up with the assigned issue in both individual and group work; however, some students were reluctant to get involved in group discussion.

Most Interviewees said that they liked the method. Quite a few explained that the method helped them to become more active in the learner-center mode. This finding corresponded with studies by the earlier researchers, particularly Finucane et al. (1998), and Tan (2004). Both earlier researchers valued PBL as a problem-solving platform for the real world problem, and a learning-engagement tool for learners as individuals and as group members, respectively.

From the interview data, the researchers were able to conclude that both PjBL and PBL were appropriate to the majority of students in the study to a great extent. Difficulties were identified and overcome by most achievers at all levels. All interviewed students particularly agreed upon the positive effects on their information search, participative learning, and critical thinking skills development.

### **7. Conclusion**

The PjBL method trained the students to learn through a problem-solving process which was facilitated and monitored by the teacher. The learning process in PjBL class proved positive in developing the students' critical thinking, rebuilding social and cooperative skills, and boosting motivation and enjoyment.

Despite the statistical non-significance to support differences between the two methods in yielding effects on students' argumentative writing achievement, the students in their interview expressed their positive opinions toward both methods PjBL and PBL as challenges for their learning individually and in group in seeking a solution to the assigned problem. Both methods enabled the students to explore a contextual problem creatively, work together in group for appropriate learning sources, and especially support their critical thinking skills development. Such a project-based learning experience therefore should deserve attention from language teachers in conducting their writing courses at the tertiary level of education.

## 8. The Authors

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## 9. References

- Almasri, M., Al Fadda, H., AlShumaimeri, Y. (2011). A preliminary study of the effect of webquests on the writing performance of Saudi female efl elementary school students. *The JALT Call Journal*, 7(3), 373-390.
- Bas, G. (2011). Investigating the effects of project-based learning on students' academic achievement and attitudes towards English lesson. *The Online Journal of New Horizons in Education*, 1(4).
- Beckett, G. (1999). Teacher and student evaluations of project-based instruction. *TESL Canada Journal*, 19(2), 52 -66.
- Bell, S. (2010). Project-based learning for the 21<sup>st</sup> century: skills for the future. *The Clearing House: A Journal of Educational Strategies*, 83(2), 39-43.
- Boud, D. & Feletti, G. (1997). *Changing problem-based learning. Introduction to second edition*, in D. Boud and G. Feletti (Eds.), *The Challenge of Problem Based Learning*. Second Edition. London: Kogan Page.
- Brown, H. D. (2001). *Teaching by Principles: An Interactive Approach to Language Pedagogy*. New York: Longman.
- Chikita, G. P., Padmadewi, N. N., & Suarnajaya, I. W. (2013). The effect of project based learning and students' perceived learning discipline toward the writing competency of the eleventh grade students of sman 5 mataram in the academic year 2012/2013. *e-Journal Program Pascasarjana Universitas Pendidikan Ganesha Program Studi Pendidikan Bahasa Inggris*, 1.
- Coleman, J. A. (1992). Project-based learning, transferable skills, information technology and video. *Language Learning Journal*, 5, 35-37.
- Dolmans D. H. J. M., Wolfhagen I. H. A. P., Van Der Vleuten C. P. M., & Wijnen W. H. F. W. (2001). Solving problems with group work in problem-based learning: hold on to the philosophy. *Med Educ Journal*, 35(9), 884-889. (online) <http://onlinelibrary.wiley.com/doi/10.1046/j.1365-2923.2001.00915.x/full> , September 12, 2015.
- Donnelly, R., & Fitzmaurice, M. (2005). Collaborative project-based learning and problem-based learning in higher education: a consideration of learner-focused strategies. In G. O'Neill, S. Moore &

B. McMullin (Eds.), *Emerging Issues in the Practice of University Learning and Teaching*, Dublin: AISHE/HEA, 87-98.

Duch, B. J., Groh, S. E., & Allen, D. E. (2001). *The Power of Problem-based Learning: A Practical "How to" for Teaching Undergraduate Courses in any Discipline*. Sterling, VA: Stylus Publishing, LLC.

Erdogan, Y. (2015). Computer assisted project-based instruction: the effects on science achievement, computer achievement and portfolio achievement. Available at [http://www.e-iji.net/dosyalar/iji\\_2015\\_2\\_14.pdf](http://www.e-iji.net/dosyalar/iji_2015_2_14.pdf) retrieved on 12 September 2015.

Finucane, P. M., Johnson, S. M., & Prideaux, D. J. (1998). Problem-based learning: its rationale and efficacy. *The Medical Journal of Australia*, 168(9), 445-8. (online). <https://www.mja.com.au/journal/1998/168/9/problem-based-learning-its-rationale-and-efficacy>, September 12, 2015.

Foss, P., Carney, N., McDonald, K., and Rooks, M. (2009). Project-based learning activities for short-term intensive english programs. *Philippine ESL Journal*, 1. (online). <http://www.philippine-esl-journal.com/wp-content/uploads/2014/01/August-2008-Vol1.pdf> , September 12, 2015.

Fragoulis, I. & Tsiplakides, I. (2009). Project-based learning in the teaching of english as a foreign language in greek primary schools: from theory to practice. *English Language Teaching CSSENET Journal*, 2(3). (online). <http://www.ccsenet.org/journal/index.php/elt/article/viewFile/2739/3286>, September 30, 2015.

Gulbahar, Y. & Tinmaz, H. (2006). Implementing Project-Based Learning and E-Portfolio Assessment in an Undergraduate Course. *Journal of Research on Technology in Education*, 38(3), 309-327.

Heaton, J. B. (1991). *Classroom testing longman keys to language teaching*. New York: Longman.

Helle, L., Tynjala, P. & Olkinuora, E. (2006). Project-based learning in post-secondary education – theory, practice and rubber sling shots. *Springer Higher Education*, 51, 287-314

Hilton-Jones, U. (1988). Project-Based Learning for Foreign Students in an English-Speaking Environment. Paper presented at *the Annual Meeting of the International Association of Teachers of English as a Foreign Language*, 11-14 April, 1988, University of Edinburgh, Scotland. (online). <http://files.eric.ed.gov/fulltext/ED301054.pdf>, September 12, 2015.

Hussein, H., Roslan, S., Noordin, N. & Abdullah, M.C. (2012). Using the problem solving approach to teach writing to EFL learners. *The English Teacher*, XLI(2), 144-159.

Jiriyasin, T. (2011). *Enlivening EFL Discussion Classrooms with Problem-based Learning Approach*. Department of English for Business Communication, School of Humanities, University of the Thai Chamber of Commerce. (online). [www.culi.chula.ac.th/Research/e-Journal/2011/Tanisaya.pdf](http://www.culi.chula.ac.th/Research/e-Journal/2011/Tanisaya.pdf) , September 12, 2015.

Katz, L. C. (1994). *The Project Approach*. In *Clearing house on early childhood education and parenting*. (online). <http://www.ericdigests.org/>, May 13, 2015.

- Kumar, R., & Refaei, B. (2013). Designing a problem-based learning intermediate composition course. *Routledge College Teaching*, 61, 67–73.
- Larmer, J. (2014). *Project-based Learning vs. Problem-based Learning vs. X-BL*. (online). <http://www.edutopia.org/blog/pbl-vs-pbl-vs-xbl-john-larmer>, September 11, 2015.
- Larsen-Freeman, D. (2000). *Techniques and Principles in Language Teaching*. Oxford: Oxford University Press.
- Lee, I. (2002). Project work made easy in the English classroom. *Canadian Modern Language Review*, 59, 282-290.
- Leong, N.C. & Patrick . (2009). The power of problem-based learning (PBL) in the EFL classroom. *Polyglossia*, 16. (online). [http://www.apu.ac.jp/rcaps/uploads/fckeditor/publications/polyglossia/Polyglossia\\_V16\\_Ng.pdf](http://www.apu.ac.jp/rcaps/uploads/fckeditor/publications/polyglossia/Polyglossia_V16_Ng.pdf), September 12, 2015.
- Levin, B.B. (2001). *Energizing Teacher Education and Professional Development with Problem-based Learning*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Lin, L.F. (2015). The impact of problem-based learning on chinese-speaking elementary school students' english vocabulary learning and use. *System*, 55, 30-42. (online). <http://www.sciencedirect.com/science/article/pii/S0346251X1500130X>, September 12, 2015.
- Maloho, K. (2009). Improving the Writing Ability of the Eighth Grade Students of MTs PKP Manado through Concept Mapping. Unpublished thesis. Malang: Universitas Negeri Malang.
- Mayo, P., Donnelly, M. B., Nash, P. P., & Schwartz, R. W. (1993). Student perceptions of tutor effectiveness in a problem-based surgery clerkship. *Teaching Learn*, 5, 227–233.
- Mills J. E. & Treagus, D. F. (2003). Engineering education is problem- based or project-based learning the answer? *Australasian Journal of Engineering Education*, 3, 2-16.
- Ndraka, T. (1985). *Teori metodologi administrasi*. Jakarta: Bina Aksara.
- Nik, Y. A., Badariah S., Muhmad Ch., Kamaruzaman J., & Hasif H. (2010). The writing performance of undergraduates in the University of Technology Mara, Terengganu, Malaysia. *Journal of Languages and Culture*, 1(1), 8-14.
- Novita, T. V. (2014). *The Effectiveness of Teaching Writing through PictureSeries to Grade VIII Students of SMPN 3 Sleman 2013/2014*. Jogjakarta. Universitas Negeri Jogjakarta. (online). <http://eprints.uny.ac.id/18525/1/Vania%20Teska%20Novita%2008202241005.pdf>, September 12, 2015.
- Ommudsen, P. (2001). “Problem-based learning in biology.” (online). <http://capewest.ca/pbl.html>, September 12, 2015.
- Rahman, F., Jumani, N.B., Dastgeer, G., Christhi, S.H. & Tahirkheli, S.A. (2011). Problem based learning in English language classes at secondary level. *International Journal of Academic Research*, 3(1), 932- 941. Railsback, J. (2002). *Project-based Instruction: Creating Excitement for*

*Learning*. In By Request Series. Northwest Regional Education Laboratory. (online). <http://educationnorthwest.org/sites/default/files/projectbased.pdf>, May 15, 2015.

Ramadhani, I. (2014). *Needs Analysis of Indonesian Freshmen's Writing at University of Indonesia: Problems and Solution*. A paper presented at 61<sup>st</sup> TEFLIN Conference. Solo, Indonesia.

Rerg-anan, P. (2011). The Effectiveness of the Project based Learning to Develop English Writing Skill for Mathayom 1 Students of Patumwan Demonstration School. M.A. thesis (Teaching English as a Foreign Language). Bangkok: Graduate School, Srinakharinwirot University.

Soleimani, H., Zahra, R. & Sadeghi. (2015). Project-based learning and its positive effects on iranian intermediate EFL learners' reading ability and vocabulary achievement. *International Journal of English Language and Literature Studies*, 4(1), 1-9.

Stoddard, T. D., & Waters, M. L. (1998). *Effective Writing: A Practical Grammar Review*. Boston: Irwin.

Tan, Oon-Seng. (2004). Cognition, metacognition and problem based learning. In Tan Oon-Seng (Ed.), *Enhancing Thinking to Problem-based Learning Approaches*. Singapore: Cengage Learning.

Thitivesa, D. (2014). The academic achievement of writing via Project based learning. *International Journal of Social, Education, Economics and Management Engineering*, 8(9), 2909-2912.

Thomas, J. W. (2000). *A Review of Research on Project-based Learning*. Report prepared for The Autodesk Foundation. (online). [http://www.bie.org/index.php/site/RE/pbl\\_research/29](http://www.bie.org/index.php/site/RE/pbl_research/29), June 5, 2015.

Trekles, A. M. (2012). Creative writing, problem-based learning, and game-based learning principles. *The International Society for Technology in Education (ISTE) Conference*, June 25, 2012. Hammond, Indiana, USA.

Weissinger, P. A. (2004). Critical thinking, metacognition, and PBL. In Tan, O.S. (Ed.), *Enhancing Thinking through Problem-based Learning Approaches: International Perspectives*, 39-62. Singapore: Thomson Learning.

Westwood, P. (2008). *What Teachers Need to Know about Teaching Methods*. Camberwell, Victoria: Acer Press.

Zahrah, R. (2009). Using Jigsaw Technique to Improve the Writing Ability of the Second Year Students of MTs negeri 2 Medan. An unpublished thesis. Malang: Universitas Negeri Malang .

**Appendix 1A: Summary of Lesson Plan in PjBL**

PRGM	MEETING	STAGES		
		PRE-ACTIVITIES	MAIN-ACTIVITIES	POST-ACTIVITIES
PjBL	1	Open the class by greeting students and checking their attendance.	introducing the project “classroom magazine”	review the meeting
		asking the students if they know any problem that the country is facing recently	divide the students into groups	give students homework
		asking students related to the issue that they raised	ask the representative of each group to take lottery regarding the theme for the project	
			provide the example of the project and argumentative text	
			teacher explain what can be written from the theme given	
	2	Open the class by greeting students and checking their attendance.	distribute an argumentative text	review the material
		Do apperception by asking the students about the previous materials.	ask if the students find difficult words	give homework to write an argumentative paragraph on the theme that they assigned
		Check the students homework orally	discussing the schematic structure and language feature	
			identify the component of the given text	
	3	Open the class by greeting students and checking their attendance.	Ask students to switch they text with their peer	Give homework to bring draft and resources to enrich their project in the next meeting
		Do apperception by asking the students about the previous materials.	Tell them to review the other students works	Explain the activity in the next meeting
		Check the students homework	Ask students if they have problems	
			Tell them to give the work back to the owner	
			Students are assign to group	
			Tell them start to discuss the project	
	4	Open the class by greeting students and checking their attendance.	Tell them to work in group	Homework for the final draft and layout for the magazine
		Do apperception by asking the students about the previous materials.	Tell them to present their concept and writing draft in front of the class	
		Check the students homework (submitting their individual draft)	Ask the other group should there be any feedback	
			Give them feedback	
	5	Open the class by greeting students and checking their attendance.	Check the final draft	Reviewing the whole learning process
		Do apperception by asking the students about the previous materials.	Give feed back for the magazine	Tell the students to submit the magazine during the post test.
		Check the students homework	Review the material about argumentative text	
			Ask the students if there be any question	

**Appendix 1B: Summary of Lesson Plan in PBL**

PRGM	MEETING	STAGES		
		PRE-ACTIVITIES	MAIN-ACTIVITIES	POST-ACTIVITIES
PBL	1	open the class by greeting students and checking their attendance.	divide the students in groups	review the meeting
		asking the students if they know any problem that the country is facing recently	play the video about juvenile delinquency	give students homework
		asking students if they have solution to the problems	ask the students what the video was about	
			ask the possible solution about the video	
	2		discuss the problem that might arise in the society and what are the possible solutions	
		Open the class by greeting students and checking their attendance.	distribute an argumentative text	review the material
		Do apperception by asking the students about the previous materials.	ask if the students find difficult words	
		Check the students homework orally	discussing the schematic structure and language feature	
	3		identify the component of the given text	
		Open the class by greeting students and checking their attendance.	Divide students into group	Review the meeting
		Do apperception by asking the students about the previous materials.	Distribute articles from newspaper to each group	Explain the activity in the next meeting (researching the solution from the internet)
			Discuss the problem in the article	
			Tell them to list the possible solution	
	4		Ask them to write argumentative text regarding the problem in the article	
		Open the class by greeting students and checking their attendance.	Tell them to work in group	give homework for the individual writing
		Do apperception by asking the students about the previous materials.	Tell them to present their solution to the case and argumentative text	
		Check the students homework	Ask the other group should there be any feedback	
	5		Give them feedback	
		Open the class by greeting students and checking their attendance.	Tell them to switch their individual writing	Reviewing the whole learning process
		do apperception by asking the students about the previous materials.	Ask the students to give feedback on their friends writing	Tell the students to submit the final writing during the post test.
Check the students homework		Ask the students should there be any question		

## Appendix 2: Pre-test and Post-test Items

### WRITING TEST

#### PRE-TEST

Instruction:

- a. Write your name and class clearly on the top of paper.
- b. Use your time adequately. The time is 80 minutes.

As you have learned before, Argumentative text generally consists of thesis, arguments, and reiteration/conclusion/recommendation.

Direction:

1. Write an argumentative text about the use of cell phone at school.
2. Decide whether you support or againsts the topic
3. You can use transition signals within paragraph or sentences (i.e., *first, second, then, after, next, etc.*)
4. Pay attention to your grammar.
5. You should write carefully and ensure each of the sentences is written in the correct selection of words.
6. You should finished your writing with conclusion or recommendation that sums up your arguments
7. For the topic you use words such as *punishment, regulation, cheating, and rules.*
8. Work individually.

### WRITING TEST

#### POST-TEST

Instruction:

- a. Write your name and class clearly on the top of paper.
- b. Use your time adequately. The time is 80 minutes.

As you have learned before, Argumentative text generally consists of thesis, arguments, and reiteration/conclusion/recommendation.

Direction:

1. Write an argumentative text about the use of cell phone at school.
2. Decide whether you support or againsts the topic
3. You can use transition signals within paragraph or sentences (i.e., *first, second, then, after, next, etc.*)
4. Pay attention to your grammar.
5. You should write carefully and ensure each of the sentences is written in the correct selection of words.
6. You should finished your writing with conclusion or recommendation that sums up your arguments
7. For the topic you can use words such as *punishment, regulation, cheating, and rules.*
8. Work individually.

## Appendix 3A: Interview Guidelines PjBL

### INTERVIEW GUIDELINES Project-Based Learning

#### Identity

1. What is your name?

#### Learning Activity / Experience

2. How was your experience in learning argumentative writing using project based learning?
3. What do you know about project based learning that was implemented in your class?
4. Do you think project based learning help you understand the concept of argumentative writing? Why?
5. Using the method, were you help to more easily identify the schematic structure of an argumentative text?
6. Does the project help you develop ideas for writing argumentative? If yes how? Yes,
7. Do you think working with group is interesting? Why?
8. Do you feel confidence when working with your friend in developing project? Explain it.
9. Do you think the project (magazine) is appropriate for learning? Why?

#### Advantages and disadvantages

10. Do you get any advantages of having project based learning in your writing class? If yes what are they?
11. Do you experience difficulties when taught using Project based learning (creating magazine or during the classroom process)?

#### Attitude towards method

12. What can you suggest about the project selection to be implemented in the classroom?
13. Do you like if the lecturer implements this method in the writing class? What is your explanation?

**Appendix 3B: Interview Guidelines PBL**

**INTERVIEW GUIDELINES  
Problem-Based Learning**

**Identity**

1. What are your name and class?

**Learning Activity/Experience**

2. How was your experience in learning argumentative writing using problem based learning?
3. What do you know about Problem based learning that was implemented in your class?
4. Do you think working with group is interesting? Why?
5. Do you feel confidence when working with your friends? Explain it.
6. Does problem based learning help you develop ideas for writing argumentative? If yes how?
7. Do you think problem based learning help you understand the concept of argumentative writing? Why?
8. Using the method, were you help to more easily identify the schematic structure of an argumentative text?
9. Do you think the problem that is presented in the class appropriate for learning and up to date? Why?

**Advantage and Disadvantage**

10. Do you get any advantages of having problem based learning in your writing class? If yes what are they?
11. Do you experience difficulties when taught using problem based learning (finding an article or during the classroom process)?

**Attitude towards methods**

12. What can you suggest about the problem selection criteria to be implemented in the classroom?  
Do you like if the lecturer implements this method in the writing class? What is your explanation?

**Appendix 4: Scoring Profile for Students' Written Works**

ASPECTS	POINTS	DESCRIPTION
CONTENT	Points 30-27	shows that the learners are in the excellent to very good level: the content is knowledgeable, the thesis is developed properly and relevant to assigned topic in their writing.
	Points 26-22	indicates that the learners are in the good to average level: the content has some knowledge of subject, the thesis has limited development, mostly relevant to topic, but lacks detail.
	Points 21-17	reveals that the learners are in the fair to poor level: the content has limited knowledge of subject, and the thesis is developed inadequately.
	Points 16-13	denotes that the learners are in the very poor level: the content does not show knowledge of the topic, the thesis is developed impertinently, and too little sentence to evaluate.
ORGANIZATION	Points 20-18	shows that the learners are in the excellent to very good level: the organization is expressed fluently, ideas are clearly stated/supported, well-organized, has logical sequencing and cohesiveness.
	Points 17-14	indicates that the learners are in the good to average level: the organization is sometimes developed stagnantly, loosely organized but main ideas stand out, limited support, logical but incomplete sequencing.
	Points 13-10	reveals that the learners are in the fair to poor level: the organization is developed non-fluently, ideas are confused or disconnect each other, lacks of logical sequencing and development.
	Points 9-7	denotes that the learners are in the very poor level there is no communication, no organization, or not enough to evaluate.

ANGUAGE USE	Points 25-22	shows that the students are in the excellent to very good level: the sentence structure used is effective complete construction with few errors of agreement, tense, number, articles, pronoun, and preposition.
	Points 21-18	indicates that the learners are in the good to average level: the sentence structure used is effective but simple construction with minor problems in complex construction, several errors of agreement, tense, number, articles, pronoun, preposition, but meaning seldom obscured.
	Points 17-11	reveals that the students are in the fair to poor level: major problems are in single/complex construction, communicate, or not enough to evaluate.
	Points 10-5	denotes that the students are in the very poor level: virtually no mastery of sentence construction rules, dominated by errors, does not excellent to very good level: demonstrate mastery of conventions, few errors of spelling, punctuation, capitalization, and paragraphing.
VOCABULARY	Points 20-18	shows that the learners are in the excellent to very good level: the vocabulary used are effective word/idiom, word form mastery, and in appropriate register
	Points 17-14	indicates that the learners are in the good to average level: the vocabulary used have occasional errors of word/idiom form, choice, and usage but meaning is still intelligible.
	Points 13-10	reveals that the learners are in the fair to poor level: the vocabulary used have frequent errors of word/idiom form, choice, usage, meaning confused or obscured.
	Points 9-7	denotes that the learners are in the very poor level: the vocabulary used are essentially translation of the first language, little knowledge of English vocabulary, idioms, word form and not enough to evaluated.
MECHANICS	Points 5	shows that the learners are in the frequent errors in negation, agreement, tense, number, articles, pronoun, preposition and meaning confused or obscured.
	Points 4	indicates that the learners are in the good to average level: occasional errors of spelling, punctuation, capitalization, paragraphing but meaning not obscured.
	Points 3	reveals that the students are in the fair to poor level: frequent errors of spelling, punctuation, capitalization, paragraphing, poor handwriting, meaning confused or not obscured.
	Points 2	denotes that the learners are in the very poor level: no mastery of convention, dominated by errors of spelling, punctuation, capitalization, paragraphing, handwriting illegible, or not enough to evaluate.