

Implementation of Problem-Based Learning Model in TOEFL Preparation Program at Khairun University

Sutisno Adam¹, Sulmi Magfirah^{1*}

¹Universitas Khairun, Indonesia

*Correspondence: magfirahsulmi@gmail.com

ABSTRACT

This study aimed to measure the effectiveness of the implementation of TOEFL Preparation in order to increase the students' TOEFL test scores, then the scores can be used for academic purposes. The research conducted was an experimental study with a paired-sample t-test. Participants consisted of 20 selected students at Khairun University, namely through pretest, treatment (listening, structure, reading), and posttest. The research method used two types of instruments: pre-test, which used to measure the TOEFL test initial score, and post-test, which was used to measure the final score. The data collected from both the pre-test and post-test is then analyzed by using the paired-sample t-test in SPSS. The result showed that there were significant differences between students' scores in the pre-test and post-test in the three sections: Listening, Structure and written Expression, and Reading Comprehension. It also showed that the overall TOEFL preparation class students have increased scores. The part that has the biggest difference was the reading skill compared to the previous two sections. The students' maximum score increased in the post-test in all three sections which means there was an increase of the score. The effectiveness of this program was strongly supported by the implemented learning model, namely PBL. The implementation of PBL in this program is very relevant because students are guided to identify the problems that usually arise in TOEFL questions and how to solve them.

ARTICLE HISTORY

Published December 8th 2021



KEYWORDS

Toefl Preparation, Effectiveness, Problem Based Learning

ARTICLE LICENCE

© 2021 Universitas Hasanuddin Under the license CC BY-SA 4.0



1. Introduction

Test of English as a Foreign Language (TOEFL) is a test used to measure English proficiency by *non-native speakers*. In general, the participants must achieve certain standard scores when they want to apply for overseas scholarships, continue their education to a higher level, or find a job. The score is varied starting from a score of 450 or more. Hence, the participant must study more to achieve the standard score that has been set, either through a course program or through self-study or self-taught. According to Aliponga (2013:74), university applies TOEFL because they believe that it is able to evaluate students' abilities and skills to understand English in doing the assignments.

Foreign language ability is one factor that hinders the continuing of study, especially for Khairun University educators. This problem has become the basis for the researchers to implement the effectiveness of the PBL learning model into TOEFL preparation to measure the achievement of TOEFL score. Then, for the sustainability, each participant can use the score. It is following the expectations of the Khairun University that there will be the increasing of students who are qualified in the form of student exchange or national competition, so it can also improve the quality of education as the form of tridharma of higher education.

In line with the problem, the researchers implemented the PBL (Problem-Based Learning) model in TOEFL preparation (paper-based) program to give a pre-test; strengthening the listening, structure, and reading skills then measured the final result of the training through the post-test.

Implementing the PBL method into TOEFL preparation is one of the ways to understand and practice the skills before measuring the test results through TOEFL ITP. Rhem (1998) defines PBL as a learning that begins when the students face a problem. So, PBL is a learning method that use problem as the first step in gathering and integrating a new knowledge. The problem then determines the direction of learning carried out in groups.

Several previous studies focused more on problems in certain skills in TOEFL test, while this research focuses more on discussing the problems contained in each skill in the test, namely Listening, Structure and Reading. With these considerations, implementing the PBL learning model in the TOEFL preparation program can improve the participant's score results and increase the effectiveness of test-based learning, especially the TOEFL test. Hence, this research model focuses on understanding the questions for each TOEFL skill and also investigating the strategies used by the participants, in this case it helps to understand the questions that can be tested.

2. Method

Problem Based Learning (PBL) is as a method that is not only directed at students, but it is also problem-centered that allows for *free inquiry*. Mentor acts as facilitator and assist the students in connecting the relevant problems in the test (Walker, Leary & Lefler, 2017). It involves the students' knowledge and understanding in analyzing questions, including identifying the problems contained in each *section*.

The implementation of PBL in TOEFL preparation class is the right way because the principles in PBL assessment are rule-based or more often appear but in general rely on the underlying probabilistic model in determining the relationship between concepts (Walker, Leary & Lefler, 2017). Measuring a student's ability to answer the same problem posed previously before treatment is on the same track as assessing the student's ability to properly use the knowledge of principles and concepts acquired during the course to achieve the goal or targeted score.

The type of this research was a field research conducted to determine the effect of a treatment on the characteristics of the subject under study, namely *problem based learning*. This type of research was chosen to determine the effectiveness of the *problem-based learning* model in TOEFL Preparation program at Khairun University students.

Researchers used the paired-sample t-test which also called *the dependent t-test*. It was used when the researchers measure the same construct from the same group of people. For example, the researchers can measure the students' vocabulary knowledge, focus on vocabulary training, and their vocabulary knowledge again. The same group of students was asked to complete the same task (parallel task) in each case. In addition, this sample was related to the iterative action research design; hence it is also called *repeated-measure t-test*.

The paired-sample t-test can identify the level of difficulty and indicate which task is more difficult. Similarly, in the pretest-posttest experimental design, correlation analysis shows whether the pre-test and posttest measure the same value. If the post-test score is significantly higher than the pre-test score, the researcher can conclude that the test has improved.

The first step was to determine the research experimental group based on this. Next, a pretest (initial test) was given with complete skills, *Listening, Structure and Written Expression, and Reading Comprehension*. Then a treatment was given in accordance with the research topic, namely language learning with a problem-based learning model in the experimental group, which focused on problems that are often found on TOEFL questions. After treatment was given, the participants done the post-test (final test). The research design can be seen in Table 3.1

Table 3. Research Design (*the paired-sample t-test*)

		Paired differences				t	df	Sig. (2-tailed)	
		Mean difference	SD	Std. error mean	95% confidence interval of the difference				
					Lower				Upper
Pair 1	Implicature score— Routines score	3.47	24.75	1.92	-0.32	7.27	1.81	0.07	

(Roever and Phakiti, 2018)

In the table above, the first line of analysis is based on the assumption of the same variance, while the second line is based on the premise of unequal variance. The second line can be ignored because the Levene test result is that the variance equation condition is met. In its application, this study used data from the pre-test and post-test results of TOEFL Preparation test participants in the scope of Khairun University students.

3. Findings

3.1 Effectiveness of PBL on TOEFL Preparation Course towards Listening Score

	Mean	Std. Deviation	95% Confidence Interval of the Difference		t*	df
			Lower	Upper		
Pre-Test Section 1	44.4	7.3	-6.99	-3.2	-5.43	41
Post-Test Section 1	49.5	8.2	-6.99	-3.2	-5.43	41

*Significance level: .000

Based on the paired samples t-test performed to identify the difference between pre-test and post-test in listening section, it was found that there was a significant difference in the scores for pre-test (M=44.4, SD=7.3) and post test (M=49.5, SD= 8.2) conditions; $t(41)=-5.43$, $p<.001$. The calculation was proceeded to determine the course's effectiveness towards students' listening scores for both tests. To obtain the effect size, the value of Cohen's d computed. It was then found that for listening section, the effect of PBL was large ($d=-0.85$).

	Minimum	Maximum
Pre-Test Section 1	31	61
Post-Test Section 1	32	65

From the descriptive statistics, it could also be compared the minimum and maximum score of each pre-test and post-test to identify whether there was an increase on students' overall score. In the listening section, the lowest achiever appeared to improve by one point ($Min_1=31$, $Min_2=32$). Meanwhile, the highest achiever increased by 4 points ($Max_1=61$, $Max_2=65$). Based on both findings of paired samples t-test and descriptive statistics, it could be said that PBL on TOEFL preparation course for Unkhair's students is effective to improve students' listening score.

3.2 Effectiveness of PBL on TOEFL Preparation Course towards Structure and Written Expressions Score

	Mean	Std. Deviation	95% Confidence Interval of the Difference		t*	df
			Lower	Upper		
Pre-Test Section 2	40.3	6.2	-6.80	-3.1	-5.39	41
Post-Test Section 2	45.3	8	-6.80	-3.1	-5.39	41

Based on the paired samples t-test performed to identify the difference between pre- test and post-test in listening section, it was found that there was a significant difference in the scores for pre-test (M=40.3, SD=6.2) and post-test (M=45.3, SD=8) conditions; $t(41)=-5.39$, $p<.001$. The calculation was proceeded to determine the course's effectiveness towards students' listening scores for both tests. The value of Cohen's d and the effect-size correlation (r) were computed to obtain the effect size. It was then found that for structure and written expression section, the effect of PBL was large ($d=-0.9$).

	Minimum	Maximum
Pre-Test Section 2	29	58
Post-Test Section 2	29	65

The descriptive statistics could also be compared the minimum and maximum score of each pre-test and post-test to identify whether there was an increase in students' overall score. There were no changes in the structure and written expressions section in the lowest achiever ($Min_1=29$, $Min_2=29$). Meanwhile the highest achiever increased by 7 points ($Max_1=58$, $Max_2=65$). Based on both findings of paired samples t-test and descriptive statistics, it could be said that PBL on TOEFL preparation course for Unkhair's students effectively improves students' structure and written expressions score.

3.3 Effectiveness of PBL on TOEFL Preparation Course towards Reading Score

	Mean	Std. Deviation	95% Confidence Interval of the Difference		t*	df
			Lower	Upper		
Pre-Test Section 3	42.4	6.3	-5.90	-3.8	-9.37	41
Post-Test Section 3	47.3	6.7	-5.90	-3.8	-9.37	41

Based on the paired samples t-test performed to identify the difference between pre- test and post-test in listening section, it was found that there was a significant difference in the scores for pre-test (M=42.4, SD=6.3) and post-test (M=47.3, SD=6.7) conditions; $t(41)=-9.37, p<.001$. The calculation was proceeded to determine the course's effectiveness towards students' listening scores for both tests. To obtain the effect size, the value of Cohen's d and the effect-size correlation (r) was computed. It was then found that for reading section, the effect of PBL was large ($d=-1.2$). Based on these findings, it could be said that PBL on TOEFL preparation course for Unkhair's students is effective to improve students' reading score.

	Minimum	Maximum
Pre-Test Section 3	26	54
Post-Test Section 3	31	58

The descriptive statistics could also be compared the minimum and maximum score of each pre-test and post-test to identify whether there was an increase in students' overall score. The lowest achiever appeared to improve by 5 points ($Min_1=26, Min_2=31$). Meanwhile the highest achiever increased by 4 points ($Max_1=54, Max_2=58$). Based on both findings of paired samples t-test and descriptive statistics, it could be said that PBL on TOEFL preparation course for Unkhair's students effectively improves students' reading score.

4. Discussion

4.1 Problem Based Learning Implementation and Effect

PBL is characterized as an approach to learning in which students are given more control over their learning than a traditional approach (Walker, Leary & Lefler, 2017), which in the context of this study students are guided by tutor to identify each problem that often appears in a TOEFL ITP test and how to solve them. The implementation of this approach has been believed to play a role in students' learning outcomes. Students' learning outcomes in this study are reflected in their pre-test and post-test scores for all three sections tested in TOEFL ITP. The results showed a significant difference between students' mean scores from the pre-test to post-test across all three sections. All the differences are found to be an increase on their average score.

Assessing the implementation of PBL in the TOEFL preparation course is appropriate as the principles in PBL assessment is rule-based or more emergent but in general they rely on some sort of an underlying probabilistic model to define the associations between concepts (Walker, Leary & Lefler, 2017). Measuring students' ability to answer the same problems posed earlier before the treatment is on the same line as assessing learners' ability to correctly invoke principle and concept knowledge obtained during the course to achieve their goal or targeted score. Another point that is important to pay attention in studying the implications of PBL is to ensure that all problems are equal. As this course uses one module specifically designed to discuss the problems that commonly appear in a TOEFL ITP test, both pre-test and post-test questions were also taken from the module. The module has also specified the question numbers with the problems, or termed as skills, explained in the book so it is ensured that all questions in both tests derived from the same level of difficulty and complexity. Jonassen and Hung (2017) argue that in using PBL as the instructional model the problems being taught and assessed should be equal. The equality of problem includes difficulty, structure, and complexity. In this study, although the pre-test and post-test questions were structured randomly not based on the organization of the skills in the book, each of the questions could be mapped to match which skill that it relates to. Therefore, it could be concluded that the TOEFL preparation course has a significant effect to assist students in solving problems that commonly appear in a TOEFL test.

Although all three sections generally showed the same results of a significant difference between their pre-test and post-test, it should be noted that the significance level is different from one another. In listening and structure and written expressions sections, the t value is around -5, hence the t value in reading section is -9. This means a bigger difference in mean score between pre-test and post-test in the reading section than in the former two sections. Such distinction could

be explained by looking at the aspect of tutors handling each section in the course. Leary, Walker, Shelton and Fitt (2017) have investigated tutors' role and the implications of their relevant background and experience in using PBL in classrooms. They believed that content expertise is not necessarily central in implementing PBL because that could intervene students' process of thinking and discovering. Instead, tutors' experiences, both in training and teaching, are more impactful in guiding students to reach their learning goals successfully. These practice experiences that tutors had would provide deep understanding on how their role as a tutor should be applied when dealing with problems that their students should solve. One example of how tutors could grasp such experience is by co-designing the course learning model and had a great familiarity with the course content. From the three tutors involved in this study, the reading tutor is the one who has more experience in planning and executing TOEFL preparation course not only for Unkhair students but also for other groups of learners. Thus, it is not a surprise if the tutor could optimize his role as a teacher in PBL.

Apart from the tutors' expertise in this field, the PBL model itself has been found to have a major benefit in assisting students for self-directed learning. Self-directed learning is important especially when students have set their own targets before joining the course because the lessons given by the tutor needs to be processed by them to match their needs. In other words, they should recognize their strengths and weaknesses in handling TOEFL questions and how the course could help them address their limitations. Sungur and Cekkaya (2016) compared PBL with traditional instruction learning in terms of learners' ability to do self-regulated learning found that PBL students had more tendency to participate in a task for reasons such as challenge, curiosity, and mastery. PBL also enhanced students' elaboration, strategies, critical thinking, effort regulation, and peer learning. This finding also resonates with Hmelo-Silver's (2016) and Capon and Kuhn's (2016) studies where students reflected that PBL helps them relate their new knowledge with prior understanding and assist them in understanding how their learning and problem-solving strategies could be reapplied. All these intrinsic drives that students could employ through the course, surely, in turn would boost the success of the course and achieving their goals.

4.2 TOEFL Preparation and Effect

Based on the quantitative results above, it was found that the TOEFL preparation course for Unkhair's students has a large effect on students' score improvement. This finding is in line with many previous research before that also investigated the effectiveness of a TOEFL preparation course (Dewi, Darna & Suprato, 2015; Maharani & Putro, 2021; Muslimin, 2014). Before elaborating the TOEFL preparation course in detail, it should be noted that this course is a type of targeted test preparations that mainly consist of test-coaching activities, including instruction focused on the test-taking practice to upgrade students' score to some extent. The study by Farnsworth (2014) explored participants' scores in oral English proficiency test and assigned in two different treatments of 12-hour intensive classes and test format coaching in 6 weeks. He found that participants' score increased in both groups, however, a bigger score gain was reported in the coaching participants compared to the participants in the regular English classes. Such evidence could help explain why there were students from English majors but achieve lower scores in an English test than students from non-English majors. One rationale for this is that familiarity with the test format and content is important in helping students solve the test problems.

A TOEFL preparation course is a common practice, especially in EFL countries where not all formal education could supply students with enough knowledge to tackle the test. Matingfan (2018) specifically studied English students' problem when taking a TOEFL test. She found that one of the most affecting factors in students' ability to achieve high score is their study habits. Study habits in this case relate to individual goal setting, practicing the lessons, and trying to make correlation between new materials with prior knowledge. These constraints were indirectly overcome once students were situated in a test-coaching class. Students were given lots of opportunities to practice answering the test questions based on the lessons taught by tutors, while also using their whole knowledge to achieve their targeted score.

In this study, the course has a large effect size which means it is very effective in helping students to improve their scores in a TOEFL test for all the three sections. Overall, students' ability to improve their scores could be explained by their vocabulary mastery of what the test commonly asks and some keywords that would help them. This has been explained by Muslimin (2014) where in the intensive TOEFL coaching class, students' scores increased and even achieved a higher score that no one achieved in the pre-tests. It should also be noted that the increase of score of participants in this study happens not only to the low achievers in the pre-test but also to the high achievers. This is reflected from the maximum scores in all three sections increase from pre-test to post-test. This finding is in line with Dewi, Darna and Suprato's (2015) finding that an increase of TOEFL scores after a period of time studying happened to all participants including the high achievers.

To look closer at each section, there are various opinions regarding teaching listening, structure, and reading in a TOEFL coaching class. Alderson and Hamp-Lyons (2014) argue that tutoring reading and listening are very similar to teaching them in regular classes, unless these skills are not integrated in the TOEFL course. On the other hand, teaching structure and written expression has a bigger challenge as the grammatical rules are seemed to be patent and cannot be contextualized with daily communication. They concluded that TOEFL alone does not cause washback on the way tutors teach in a TOEFL preparation class, but it very much depends on the way tutors decide what best methods to be used to assist students in facing the test. Reading and listening skills have also been viewed as easier to improve. Maharani and Putro (2021) explained that their participants admitted on how they felt that reading and listening skills improved significantly through a TOEFL course even though their score did not increase. Our finding, however, refutes what Simanjuntak (2018) found that there was no effect on reading section when students after students participate in a TOEFL preparation class. This contradiction could be explained by what Nguyen (2007) had previously mentioned that combining different task types under one section would decrease the test method effect on the test performance. In our practice, each section was taught in their own time slots and not overlapping one section to another so the results could show a specific result on the treatment effect in each section.

5. Conclusion

To conclude this study, there was a significant difference between students' pre-test and post-test scores across all the three sections: Listening, Structure and Written Expressions, and Reading Comprehension. This shows that Unkhair's students who joined TOEFL preparation overall had improvement on their scores. The section with the largest difference was the reading section compared to the other two former sections. This is assumed to be affected by the tutor's experience in planning and teaching the course. the reading section has a higher difference, one point that is important to be noted is that students' maximum scores improve in the post-test across all three sections which means that there was an increase of score achieved in that class. In addition to that, there were large effect sizes in all three sections which indicates that the TOEFL Preparation Course for Unkhair's students could significantly improve students' scores. The effectiveness of this program is strongly supported by the learning model implemented which is PBL. The implementation of PBL in this program is very suitable as students were guided to identify problems that usually appear in TOEFL questions and how to solve them. Therefore, students were situated in a test-targeted class with the main goal is upgrading their scores. This, in turn, allows students to set their own goals in that course and work throughout the course to optimize their learning by combining their knowledge with new materials instructed in the class.

References

- Bruce, R. (2001). *Peterson's TOEFL Practice Test*. New Jersey : Peterson's Thomson Learning.
- Capon, N., & Kuhn, D. (2004). What's so Good about Problem-Based Learning? *Cognition and Instruction*, 22(1), 61–79.
- Dewi, I. I., Darna, & Suprato, D. (2015). The Changes of Students' TOEFL Score After One Year Learning. *HUMANIORA*, 6(4), 507–519.
- Farnsworth, T. (2013). Effect of Targeted Test Preparation on Scores of Two Tests of Oral English as a Second Language. *TESOL Quarterly*, 47(1), 148–156.
- Hmelo-Silver, C. E. (2016). Problem-Based Learning: What and How Do Students Learn? *Educational Psychology Review*, 16(3), 235–266.
- Jonassen, D. H., & Hung, W. (2015). All Problems Are Not Equal: Implications for Problem-Based Learning. In *Essential Readings in Problem-Based Learning* (pp. 17–41). Purdue University Press.
- Leary, H., Walker, A., Shelton, B. E., & Fitt, M. H. (2015). Exploring The Relationships between Tutor Background, Tutor Training, and Student Learning: A Problem-Based Learning Meta-Analysis. In *Essential Readings in Problem-Based Learning* (pp. 331–353). Purdue University Press.
- Maharani, M. S., & Putro, N. H. P. S. (2021). Evaluation of TOEFL Preparation Course rogram to Improve Students' Test Score. *Jurnal Penelitian Dan Evaluasi Pendidikan*, 25(1), 63–76.
- Matingfan, E. C. (2018). *English Students' Problem of Taking TOEFL Test (A Case Study of English Department Students at Mataram University Academic Year 2017-2018)*. Universitas Mataram.
- Murcia, M.C. 1992. *Teaching English as a Second or Foreign Language*. Thomson Learning.

- Muslimin, A. I. (2014). Improving Students' TOEFL Scores Using TOEFL iBT Practice Android Application. *The 61st TEFLIN International Conference*, 906–910.
- Nguyen, T. N. H. (2007). Effects of Test Preparation on Test Performance—The case of the IELTS and TOEFL iBT Listening Tests. *Melbourne Papers in Language Testing*, 12(1), 1–24.
- Ningrum, Epon. (2014). *Penelitian Tindakan Kelas : Panduan Praktis dan Contoh*. Yogyakarta : Ombak.
- Phillips, D. (2004). *Introductory Course for the TOEFL Test*. New York : Longman.
- Roever, C., & Phakiti, A. (2018). *Quantitative methods for second language research: A problem-solving approach*. <http://www.myilibrary.com?id=1022552>
- Rost, M. (2002). *Teaching and Researching Listening*. Hongkong : Longman
- Sharpe, P.J. (2002). *Barron's How to Prepare for the TOEFL Test*. Jakarta : Binarupa Aksara.
- Simanjuntak, A. E. (2018). The Effect of Test Preparation TOEFL Reading Tests. *Globish: An English-Indonesian Journal for English, Education and Culture*, 7(2), 82–91.
- Sungur, S., & Tekkaya, C. (2006). Effects of Problem-Based Learning and Traditional Instruction on Self-Regulated Learning. *The Journal of Educational Research*, 99(5), 307–317.
- Walker, A., Leary, H., & Lefler, M. (2015). A Meta-Analysis of Problem-Based Learning: Examination of Education Levels, Disciplines, Assessment Levels, Problem Types, Implementation Types, and Reasoning Strategies. In *Essential Readings in Problem-Based Learning* (pp. 303–329). Purdue University Press.