

The Effectiveness of Online Flipped Learning Based on Problem-Based Learning Model in the Language Editing Course at Indonesian Language and Literature Education Program

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ABSTRACT

The learning system implemented in the research is a combination of online learning with the flipped learning, while the learning strategy based on problem based models. The preparation of learning materials adopts student learning needs using the Visual, Auditory, and Kinesthetic principles. Therefore, the problem formulation in this study consists of the integrating process of problem-based learning (PBL) with the online flipped learning, the results of integrated learning system, and the students respond to integrated learning system in the Language Editing Course. The research used a quasi-experimental method, a single group pretest-posttest model using 30 students as a sample. Learning scenario is the key to integrating the combination model. The final competency of language editing skills from PBSI student has exceed the target of learning outcomes. The results of the final competency test with average value of 83 (good). Based on the results of student tests, it indicated that the combination of learning systems is able to meet the learning needs of students so that student competency scores can exceed the set standards. The combination learning method used in lectures can help students practice through quizzes or assignments that match the student's learning style. Even so, there are some obstacles, namely the internet which is sometimes difficult to access and the limitation of internet quotas owned by students.

Keywords: Online, Flipped learning, Problem-based learning, Language editing

1. INTRODUCTION

The occurrence of the covid-19 pandemic prompted affected countries to implement health protocols to prevent and control the spread of the covid-19 virus. Measures to maintain distance and prohibit the gathering of many people in one place, especially in closed rooms, forcing educational institutions to be closed and only conducting distance learning from their own places. The school implements network-based distance learning which is held for each study group and is guided by the teacher in each lesson at the same time. The learning implementation is supported by an online platform as a home or a forum for face-to-face network-based activities. Learning models like this are known as massive online learning models.

Home learning combined with network-based teaching is a key element in implementing massive open online courses (MOOCs). The advantages of MOOCs

include equal distribution of higher education, providing an alternative choice for formal education, providing a more adaptive learning schedule according to user needs, and providing collaboration opportunities with various experts across the region through a network [1]. As an online platform, MOOCs are able to reach all regions that have internet network access. This is supported by the advancement of sophisticated communication tools so that almost all network-based applications can be opened, processed, stored, or sent via cellphones which are owned almost evenly in all levels of society. Therefore, MOOCs can be used by every community so that quality education can be achieved and enjoyed by those people.

When implementing Home Learning, students are still accompanied by lecturers by utilizing various online platforms such as the Learning Management System (LMS), Zoom, Google Classroom, and others. Thus, during social distance, students still get material

from lecturers in related subjects. One platform that is attractive and has a practical operation is Zoom. Zoom is one of the applications in video communication that uses modern technology, by taking advantage of user friendly, free access with limited time, and has a reliable online means based on network for video, chat, and audio webinars [2].

Various platforms or applications in online learning provide online learning content that can be accessed free of charge by teachers, parents, and students. Each content can be adjusted to a Visual, Auditory, and Kinesthetic (VAK) based learning style. Learning can be focused on direct experiences according to the learning style of each student. The use of the VAK learning model is an opportunity for students to learn directly according to their learning styles so that they can increase understanding and learning to run effectively [3].

One of the courses taught at the Indonesian Language and Literature Department is the Language Editing course. The Language Editing course is one of the core courses of the study program which aims to enable students to explain the nature and scope of editing. The first topic describes the meaning of editing, the purpose of editing, and the benefits of editing. The second topic describes editing of print media and editing of non-printed media. In this course, students are honed in their skills in editing various texts or manuscripts by paying attention to linguistic aspects. Therefore, one of the appropriate learning methods to be applied to this academic eye is Problem Based Learning.

The use of problem-based learning approaches in the MOOCs learning model can facilitate the implementation of multidisciplinary projects, the application of learning schedules that suit user needs, and the use of assessment tools that are appropriate to the characteristics of distance learning. Problem based learning provides instructors with creative freedom to design learning scenarios that can be adapted to learning outcomes, user learning styles, materials, and learning materials. The flexibility of the internet network makes it easy for instructors or teachers to find interesting and useful materials via the internet that can be used as inspiration in the preparation of teaching materials. The application of problem based learning in MOOCs is able to change the learning paradigm, enrich learning scenarios, as well as being able to act as a substitute, complement, or supporter of conventional learning models [4].

Based on the explanation above, researchers are interested in knowing the effectiveness of online flipped learning based on Problem Based Learning (PBL) in the Language Editing Course of Indonesian Language and Literature Education Program. The learning system applied is a combination of online learning systems with the Flipped Learning model, while the learning strategy implemented is based on Problem Based Learning (PBL). The preparation of teaching materials or materials adopts student learning needs based on the V-A-K model (Visual, Auditory, and Kinesthetic). Therefore, the problem formulation in this study consists of 1) How is the process of implementing problem-based learning (PBL) online learning in the Language Editing course? 2) How are the results of online learning based on problem based learning (PBL) in the Language Editing course?

1.1. Related Work

1.1.1. Problem-based Learning

In the application of Problem Based Learning, the problem is a reference to draw a cause and effect point of view. Based on this point of view, there are two solutions found, namely: reducing the possibility of a problem occurring and minimizing the impact caused by a problem. In terms of causes, solution steps or methods of handling the components that cause problems are anticipatory steps. Meanwhile, in terms of consequences, the solution steps or how to handle the components of the resulting impact are countermeasures for problems that have occurred. During the problem analysis process, the teacher or lecturer acts as a facilitator who guides and directs the problem-solving discussion to find concluding steps. The source of the problem can be found from the daily experiences faced by teachers or students [5]. Problem Based Learning is a learning strategy whose results and teaching-learning process are directed towards knowledge and problem solving. The characteristics of PBL are: student-centered, learning is focused on authentic or factual problem solving, new information comes from conditioned independent learning, learning in small groups, and lecturers acting as facilitators [6].

Problem Based Learning case studies, including: 1) presentation of the problem; 2) driving inquiry; 3) Problem Based Model steps, namely initial analysis, raising learning issues; iteration of independence and collaboration in problem solving, integration of new knowledge, presentation of solutions and evaluation [7].

Strengths and Weaknesses of Problem Based Learning [8], are as follows:

- (1) The advantages of problem-based learning are:
 - (a) Challenging students to find new knowledge for students;
 - (b) Helping students transferring knowledge from the self-experience or experience that is screened about real life problems;
 - (c) Developing students' ability to think critically.
- (2) The weaknesses of problem-based learning are:
 - (a) When students do not have that interest or do not have that belief;
 - (b) the studied problem is difficult to solve so they will feel reluctant to try it;
 - (c) Requires sufficient time for learning preparation.

1.1.2. Flipped Learning

Learning pedagogy develops rapidly as technology advances, and new methods of learning activities are developed according to the needs of students. "Flipping" the classroom by using user-friendly and accessible technology are the right step to break free from the routine of conventional learning models. This is able to optimize the role of the teacher or lecturer as a facilitator in the learning class. Teachers can create more interactive and innovative learning scenarios that aim to increase students' active participation in learning activities. Teachers can carry out mentoring activities effectively, collaborate by involving other teachers from one field or across fields. In addition, the teacher able to explore further in the process to get more detailed conclusions during the synchronous learning stage. Students take advantage of class time to solve problems, develop concepts, and engage in collaborative learning [9].

1.1.3. KDITT (MOOCs)

This study uses an online lecture model or is conducted via the internet network. This online lecture system was developed by the Ministry of Education and Culture of the Republic of Indonesia through the Open and Integrated Indonesian Online Lecture Program (KDITT). KDITT is a government program in reaching national scale students [10]. The objectives of the Integrated Open Indonesian Online Lecture Program are as follows:

- (1) Increase the distribution of education services.
- (2) Increase the affordability of education services.
- (3) Increase the quality and relevance of education services.
- (4) Increase equality in obtaining quality education services, and
- (5) Increase the security of getting good quality education services.

There are three things related to the development of online lectures, namely content, channels, infrastructure or information technology (TI). In connection with the pre-requirements for online learning, there are three things that need to be completed, namely: (a) the teaching and learning process is carried out through an internet connection, (b) the availability of facilities for students in its services, such as printing, and (c) providing tutors in case of difficulties in the process learning.

1.1.4. State of the Art

The following is a comparison table with previous research, it can be seen in the Table 1 that this study has differences in terms of: research themes, learning media, learning models, and evaluation instruments. While the equation is only found at the educational level of the research subject. Therefore, this research can be stated as original and different from previous studies.

Table 1. Research comparison

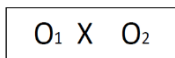
Publish Time	Title / Theme	Subject	Method	Instrument	Goals
2020	Should the PBL tutor be present? A cross sectional study of group effectiveness	Advanced Nursing Student	Experiment	Tutorial Group Effectiveness Instrument (TGEI)	To explore group effectiveness in synchronous and asynchronous learning and to validate the tool for

	in synchronous and asynchronous settings [11]				assessing the effectiveness of tutorial group
2020	The Effectiveness of Problem Based Learning and Aptitude Treatment Interaction in Improving Mathematical Creative Thinking Skills on Curriculum 2013 [12]	Student	Quasi experiment	Test	To find out the effect of applying the ATI and PBL models in the classroom on improving mathematical creative thinking skills based on the 2013 curriculum
2020	The effectiveness of value clarification technique (VCT) and problem-based learning (PBL) models on social problem-solving skills viewed from emotional intelligence [13]	Grade V of Elementary School Students	Quasi experiment	Essay test & questionnaire	To find the effect of implementing VCT, PBL, Direct Learning models in the classroom on social problem solving skills and emotional intelligence
2020	Effectiveness of Online Flipped Learning based on Problem Based Models in The Language Editing Courses of Indonesia Language and Literature Education Program	JBSI Unesa students	Research and Development	Test, Questionnaire, and online interview	The integrating process of problem-based learning (PBL) with the online flipped learning, the results of integrated learning system, and the students respond to integrated learning system in the Language Editing Course

2. METHOD

The research method is a method of solving research problems carried out in a planned and careful manner with the intention of getting facts and conclusions in order to understand, explain, predict and control the situation. The research used a quasi-experimental method. From the above understanding, the researcher uses a quantitative research approach in the implementation of this research.

The design of pretest-posttest group are:



- O_1 = Pretest value (before being given treatment)
- X = Treatment
- O_2 = Post-test value (after being given treatment)

The paradigm of this research design is that there is a pretest before being treated so that the treatment results can be known to be more accurate, because it can compare with the situation before being treated.

In this study, 3 (three) learning models were applied, namely flipped learning, online learning, and Problem Based Learning (PBL). Data collection was carried out manually and online. The research data was collected using the following techniques, namely observation and test.

The observation technique was carried out to determine the activeness of students in the online flipped learning process based on Problem Based Learning (PBL). This is carried out using the observation guideline instrument. In online learning, activity can be assessed from the frequency of chat, frequency of questions, and frequency of answering. The learning process targeted in this study is that the average student activeness in participating in online learning is in the good category (score 70).

Next, the test technique is used to determine the ability of students in the Language Editing Course. This ability is the result of PBL-based online flipped learning. Therefore, the test technique is carried out 2 (two) times. First, a test before students get treatment (pre-test). Second, a test after students get online lectures based on Problem Based Learning (PBL) (posttest). The learning process targeted in this study is that the average student competency is in the good category (score 70). It achieved from the mean score of the class. The mean scores of students at the pretest and posttest were statistically processed using the T test.

Moreover, Population is used to name all elements or members of an area that is the target of research or is the whole object of research [14]. While, sample is a part of the population and had possessed the characteristics of the population [15].

The population of all students who took the Language Editing Courses was four classes with a total of 171 students. The sample used was the Class C Indonesian Language and Literature Education Study Program students who were taking Language Editing Course, totaling 30 students.

3. RESULTS AND DISCUSSION

3.1. Combination of Learning System

The combination structure of learning system consist of online, flipped learning, and problem based learning which are described in a formulation as follows:

- (1) Finding Problems → Problem Analysis → Finding and Reporting → Integration and Evaluation.
- (2) Finding Problems → Inquiry Problems → Raising Learning Issues → Peer Teaching Findings → Presenting Solutions → Review.
- (3) Finding Problems → Analysis → Research and Fieldwork → Reporting and Peer Teaching → Presenting Findings → Reflection and Evaluation.

In the flipped learning model, each meeting is divided into 3 (three) activity stages, namely asynchronous activities, synchronous activities, and ending with asynchronous activities. Each activity stage is separated by a different timeline, but arranged in an integrated learning scenario. The learning scenario is the key to integrating the 3 formulas above with the activity stages in flipped learning. Each formula above is integrated into the learning scenario. In the learning scenario, the material, media, instruments, and learning flow are arranged into a series of activities that must be carried out or chosen by students.

3.2. Competency Test

The competency value comes from a competency test filled out by research subjects, who have participated in Class C of Language Editing Course. The results are shown in the following tables.

Table 2. Competency test

STUDENT CODE	PRETEST	POSTEST
C1	40	70
C2	80	80
C3	70	80
C4	80	80
C5	60	80
C6	80	80
C7	50	80
C8	60	80
C9	40	80
C10	90	90
C11	60	80
C12	60	80
C13	90	90
C14	40	90
C15	50	90
C16	40	80
C17	40	80
C18	40	80
C19	50	90
C20	70	90
C21	40	80
C22	70	90
C23	80	90
C24	50	80
C25	40	80
C26	80	80
C27	40	80
C28	70	90
C29	60	80
C30	60	80
RATA-RATA	60	83

Paired T test is used as a comparative or difference test if the data scale of the two variables is quantitative (Interval or Ratio). This test is intended for different tests or comparative tests. This means that you will compare whether there is a difference in MEAN or the paired mean of the two groups. Paired means that the data source comes from the same subject. The number of samples is 30 students. The results of the T test are shown as follows.

Table 3. Interpretation of paired T-test with SPSS

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRETEST	59.33	30	16.802	3.068
	POSTES	82.67	30	5.208	.951

The mean is the independent mean of each measurement. *N* is the number of samples. Std. Deviation is the standard deviation. Std. Errors are standard errors.

Table 4. Paired samples correlation

		N	Correlation	Sig.
Pair 1	PRETEST & POSTES	30	.376	.041

Correlation (*r*) is the relationship between pair members, Sig is the level of significance.

- If Sig > 0.05 there is no effect
- If Sig < 0.05 there is an effect

If *r* is squared it will show the contribution of the PBL model to language editing abilities. It can be seen that the contribution of the application of the PBL model to the language editing skills of PBSI 2017C students is $0.3762 = 0.14$ (14%).

Table 5. Paired samples test

	Mean	Std. Deviation	Paired Differences				t	df	Sig. (2-tailed)	
			Std. Error Mean	95% Confidence Interval of the Difference		Mean				Std. Deviation
				Lower	Upper					
Pair 1 PRETEST - POSTES	23.333	15.610	2.850	-29.162	-17.504	-8.187	29	.000		

- (a) Mean: Difference in average. Obtained from the average ability to edit before-after = -23.33
- (b) Std. Deviation: Standard deviation of the difference between before and after. Std. E = 15.610
- (c) Confidential Interval: The interval that shows the regions where there is a difference in independence at the 95% confidence level
- (d) T-Test Rule:

- Sig: $p \leq 0.05$ → there is an effect at the 5% sig level
- Sig: $p \leq 0.01$ → there is an effect at the sig level 1
- Sig: $p > 0.05$ → there is no effect on the sig level 5 %

(e) T value: T count = 8.187; T table = 2.045

(f) Conclusion: T count > T table then H_a is accepted.

So, there is a significant effect of the application of Online Flipped PBL model on the language editing skills of PBSI students.

The final competency of language editing skills from PBSI student has exceed the target of learning outcomes. The target of learning outcomes are 70 as a class average value and the average result from initial competency test of the students are 60 (enough). While, the results of the final competency test with average value of 83 (good). Based on the results of student tests, it indicated that the combination of learning systems is able to meet the learning needs of students so that student competency scores can exceed the set standards. The combination learning method used in lectures can help students practice through quizzes or assignments that match the student's learning style. Even so, there are some obstacles, namely the internet which is sometimes difficult to access and the limitation of internet quotas owned by students.

4. CONCLUSION

The combination structure of learning system consist of Online, Flipped Learning, and Problem Based Learning is described in a formulation like the following: (1) Finding Problems → Problem Analysis → Finding and Reporting → Integration and Evaluation. (2) Finding Problems → Inquiry Problems → Raising Learning Issues → Peer Teaching Findings → Presenting Solutions → Review. (3) Finding Problems → Analysis → Research and Fieldwork → Reporting and Peer Teaching → Presenting Findings → Reflection and Evaluation.

The final competency of language editing skills from PBSI student has exceed the target of learning outcomes. The results of the final competency test with average value of 83 (good). Based on the results of student tests, it indicated that the combination of learning systems is able to meet the learning needs of students so that student competency scores can exceed the set standards. The combination learning method used in lectures can help students practice through

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REFERENCES

- [1] U. Zakharova and K. Tanasenko, "MOOCs in higher education: advantages and pitfalls for instructors," *Educational Studies Moscow*, no. 3, pp. 176-202, 2019.
- [2] Zoom Video Communications, "Zoom," April 21, 2011. [Online]. Available: <https://zoom.us/>. [Accessed June. 26, 2020].
- [3] B. DePorter and M. Hernacki, *Quantum Learning: Membiasakan Belajar Nyaman dan Menyenangkan*. Bandung: Kaifa Learning, 2013.
- [4] J. Cheaney and T. S. Ingebritsen, "Problem-based learning in an online course: a case study," *International Review of Research in Open and Distance Learning*, vol. 6, no. 3, pp. 1-18, 2005.
- [5] A. Nata, *Perspektif Islam tentang Strategi Pembelajaran*. Jakarta: Kencana Prenada Media Group, 2009.
- [6] H. S. Barrows and R. M. Tamblyn, *Problem-Based Learning: An Approach to Medical Education*. New York: Springer Publishing Company, Inc., 1980.
- [7] Rusman, *Model-Model Pembelajaran: Mengembangkan Profesionalisme Dosen*. Jakarta: PT. Raja Grafindo Persada, 2011.
- [8] Sanjaya, *Perencanaan dan Desain Sistem Pembelajaran*. Jakarta: Kencana Prenadamedia Group, 2008.
- [9] A. Roehl, S. L. Reddy and G. J. Shannon, "The flipped classroom: an opportunity to engage millennial students through active learning strategies," *Journal of Family and Consumer Sciences*, vol. 105, no. 2, pp. 44-49, 2013.
- [10] Kemendikbud, *Panduan Pengembangan dan Penyelenggaraan KDITT*. Jakarta: Kemendikbud, 2014.
- [11] S. Edelbring, S. Alehagen, E. Mörelius, A. Johansson and P. Rytterström, "Should the PBL tutor be present? a cross-sectional study of group effectiveness in synchronous and asynchronous

- settings,” *BMC Medical Education*, vol. 20, no. 103, pp. 1-6, 2020.
- [12] R. Maskur, S. Y. Rahmawati, K. Pradana, M. Syazali, A. Septian and E. K. Palupi, “The effectiveness of problem based learning and aptitude treatment interaction in improving mathematical creative thinking skills on curriculum 2013,” *European Journal of Educational Research*, vol. 9, no. 1, pp. 375-383, 2020.
- [13] A. R. Nisa’, Asrowi and T. Murwaningsih, “the effectiveness of value clarification technique (VCT) and problem-based learning (PBL) models on social problem-solving skills viewed from emotional intelligence,” *Ilkogretim Online - Elementary Education Online*, vol. 19, no. 3, pp. 1751-1767, 2020.
- [14] J. Noor, *Metodologi Penelitian: Skripsi, Tesis, Disertasi, dan Karya Ilmiah*. Jakarta: Kencana, 2011.
- [15] Sugiyono, *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, R & D*. Bandung: Alfabeta, 2015.