



Effectiveness of *Problem Base Learning* (Pbl) Assisted By Pocket Book to Reading Literacy Skill of Students

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Abstract

This research aimed to analyze the use of *Problem Based Learning* (PBL) assisted by pocket book to reading literacy skill. This *quasi experimental* research had quantitative method. The population of this research consisted of IV grade of Karangayu 02 in academic 2018/2019. It consisted of 60 students grouped into two classes: IV A and IV B. The sampling technique was *nonprobability sampling* with *saturated sampling*. The data was obtained from *pretest – posttest*. The data analysis consisted of normality test, homogeneity test, independent sample t-test, and N – gain test. The findings showed that reading mathematics literacy skill of experimental group classically reached 93.1% with average 84.13. Meanwhile, the control group classically reached 73.3% with average score 76.6. The t-test result showed that *Problem Based Learning* (PBL) assisted by pocket book was effective to reading literacy skill of primary school students. It could be concluded that *Problem Based Learning* assisted by pocket book was effective to improve reading literacy skill of students. It is suggested to develop further investigation.

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INTRODUCTION

Reading literacy is an ability that underlies other literacy abilities. Progress in International Reading Literacy Study (PIRLS) is an international study of literacy reading for fourth grade elementary school students. The results of the 2006 PIRLS on fourth grade reading literacy achievement scores showed that Indonesia obtained a score of 405 and it was below the international average score of 500. Indonesia was also in position 41 of the 45 participating countries (states). These results illustrate that children in Indonesia lack good reading habits so that reading comprehension is too long. Many factors have caused Suyono as quoted by (Setiawati 2013). The low reading ability of students is also the same as Bergbauer's (2018) research entitled Social Interaction Determinants of South African Reading Literacy Achievement: Evidence from prePIRLS 2011 Research shows that 41% of the variance in student reading achievement and provide evidence for the important role of teachers and parents in predicting an increase in literacy scores.

According to Harsiati (2017) Literacy is a person's ability to understand, use and reflect written literature to achieve goals as needed, develop knowledge and potential, and participate in society. Literacy can be interpreted as the ability to read, write, look at, and design a thing with the ability to think critically that causes a person to communicate effectively and efficiently so as to create meaning for his world. (Kharizmi: 2015)

Suryaman (2015) shows that (1) the average reading achievement of Indonesian students is at a low level below the international median. (2) the ability to solve problems is influenced by: (a) the tendency to answer questions based on guesses, (b) the stem construction and item choice is not good, (c) the discourse quality is not good, (d) the reading competence development is not optimal, (e) the reading habits development is inadequate, (f) literary theories are taught incorrectly, (g) the size of the answers in the perception of teachers

and students is very varied, and (h) items that do not normally appear in national exam questions

As quoted by Nel Carisma (2014) given the profile of reading strengths and needs of the foundation phase of pre-service teachers, it is important that teacher educators be prepared to teach these students reading skills and strategies in each of the reading component areas.

Efforts to improve student literacy reading require a learning model that can facilitate students to find out information actively so students are trained to use students' abilities to find and understand information to solve problems and are contextual in nature. Reading literacy can be trained by using problem solving methods, in problem solving requires students to find their own answers without special assistance. In line with the opinion of Lestari (2018) there is an effort so that learning can run effectively, so that learning objectives can be achieved to the maximum. One effort that can be done is to apply innovative learning models, such as problem based learning models.

The main purpose of reading literacy learning is that students gain a deep understanding, reading literacy learning is emphasized on student activities so that students are able to (1) analyze the contents of both explicit and implicit texts; (2) illustrates analytical inference over text; (3) criticizing the text through the use of correct thinking logic, and supported by complete and correct facts both inside and outside the text; and (4) creatively producing understanding through various multimodal, multigenre, multimedia and multicultural representational media (Abidin, 2018).

Efforts should be made to overcome these problems by applying strategies and methods that are more appropriate to support students' understanding of the subject matter, namely the Problem Based Learning model which is an innovative learning model that strives students to be able to solve problems. Problems can be obtained from the teacher or from students. Trianto (2010) states that Problem Based Learning is able to help students in obtaining

information and compiling their own knowledge.

Problem-based learning model a learning model that uses real world problems as a context for students to learn about critical thinking and problem solving skills, as well as to obtain essential knowledge and concepts from subjects (Hairi, 2017). Supriadi (2013) states that the Problem Based Learning (PBL) Learning Model is an innovative learning model that strives students to be able to solve problems.

Huang & Wang (2012) stated PBL aims to help students improve intrinsic motivation, build thinking skills, develop high-level knowledge, train students to become independent learners who can work together collaboratively in groups, to help students identify possible connections between evidence relevant and problematic, and to help students develop responsible and professional character. Kosasih as quoted by (Astuti, 2016) states PBL consists of five stages namely (1) observing, orienting students towards problems; (2) asking questions, formulating problems; (3) reasoning, collecting data; (4) associating, formulating answers; (5) communicating.

In learning, students are trained to be critical and creative in solving problems and focused on building students' cognitive structures. Learning with these models is also supported by the use of pocket book media. Through the learning media of students' pocket books, readings and pictures of the material being taught are displayed so that students become more interested in participating in learning. Thus the enthusiasm for learning will grow from students and then supported by the enthusiasm and efforts of the teacher so that it is expected that teaching that has not received optimal attention from students will further motivate students to learn so that learning objectives will be achieved optimally.

In the Oxford Dictionary, a book is defined as a number of sheets of paper, either printed or blank, fastened together in a cover, which is a number of sheets of paper, both printed and blank, which are bound and given leather (Prastowo Andi, 2015: 166). The same

thing is also found in the Indonesian Dictionary which defines books as bound sheets of paper, and contains information (Andi Prastowo, 2015: 166). Meanwhile, according to Hizair (2013: 108) a pocket book is a small book that can be stored in a pocket that contains important points and is easy to carry everywhere.

Asyhari (2016) stated the role of books is very large because books can act as a source of information, but currently students also have a tendency to lack of interest in reading if the book is thick and unattractive.

Jannah, et al., (2013) stated that pocket books are small books that can be put in a pocket and easily carried everywhere. This pocket book is expected to be one of the media that can be used as supporting teaching materials to attract the attention and interests of students and can develop the potential of students to become independent learners in learning.

From the various opinions above, it can be concluded that a pocket book is a small book with a number of sheets of paper bound containing important points from a material that is in the curriculum and easy to carry anywhere.

Hairi (2016) conducted research on students' abilities in finding main sentences using the PBL and NHT models. The results of this study indicated that the application of Problem Based Learning and Numbered Head Together models could increase teacher and student activities in learning activities.

Setiawati I.K et al., (2013) conducted research on the making of a science story book that integrates natural disaster material to improve literacy and character building. The results obtained in the validity test were very high categories for material dimensions and appearance, high categories for language dimensions

Retno A. T et al., (2015) researched the development of learning media for bulletins in the form of a hierarchical concept-based pocket book for learning chemistry in eleventh grade of hydrolysis material. The results showed that: (1) instructional media on salt hydrolysis material for the second semester XI high school in SMA

Negeri 1 Boyolali and SMA Negeri 1 Teras had been developed through print media bulletins in the form of a hierarchical concept-based pocket book using research and development methods,

Ultimate. R et al., (2015) conducted a study entitled Improving Reading Literacy through the Application of Problem Based Learning in Biology Learning in Class X Mia 1 Sman 1 Boyolali Academic Year 2014/2015. The results showed that there was an increase in the reading literacy of class X MIA 1 students at SMAN 1 Boyolali in the 2014/2015 academic year through the application of problem based learning models. Increased Reading Literacy was shown by increasing the average achievement percentage of aspects of reading literacy of students from 61.24% in the pre cycle to 66.72% in the first cycle, then increased to 73.50% in the second cycle Based on these results it could be concluded that there was an increase in reading literacy students in biology learning through the application of problem based learning models in class X MIA 1 of SMAN 1 Boyolali in the 2014/2015 academic year.

Astuti et al., (2016) conducted research on PBL models which showed that the application of the Problem Based Learning model could improve the Mastery of Social Sciences Knowledge Competence and critical thinking skills in fifth A grade SDN 1 Sumerta in the 2015/2016 academic year. Sariningsih Ratna et al., (2017) conducted a research study on problem based learning to improve mathematical problem solving abilities and self-efficacy of prospective teacher students.

This study aims to explain analyzing the effectiveness of problem-based learning models assisted by pocket book media influences students' literacy reading ability.

METHOD

This type of research is a quantitative study with a pre-post-test non-equivalent control group design. The study population consisted of all participants in fourth grade Karangayau 02 Elementary School in 2018/2019. The sample

was selected using Non-probability sampling with saturated sampling technique, which was a sampling technique when all members of the population are used as samples.

The instrument used in this study was a test item in the form of a description item. The issue of reading literacy skills was used to collect data about students' literacy reading abilities.

Data were analyzed using simple statistical formulas for prerequisite tests consisting of data normality tests and data homogeneity tests. It also used the classical completeness test, the average difference test (Independent Sample t-test), and the N-Gain test.

FINDINGS AND DISCUSSION

The findings in this section consist of: mathematics literacy skill of the fourth graders by using PBL model assisted by pocket book medium. The findings were data of requirement test analysis and research data result.

Requirement Test of Reading Literacy Skill

Normality Test

This test was used to find out score of posttest data of the experimental and control groups whether they were normally distributed or not. The test was done by using *liliefors* SPSS version 23.

Table 1. Result of Data Normality

Normality Test	Kolmogorov Smirnov		
	Statistics Value	df	Sign
Experiment	0,124	29	0,200
Control	0,157	30	0,057

The score of normality test of reading literacy skill of group taught by *Problem Based Learning* assisted by pocket book and the group taught by only *Problem Based Learning* was higher than $\alpha = 0,05$ (sign >0.05). Thus, it could be concluded that the data was normally distributed. After it was known so, it could be

proceeded by classical completeness test, variance average test, and N gain score test.

Homogeneity Test

This test was done after knowing that data was normally distributed. When the data was not normally distributed, then this test would not be done. The homogeneity test was done by using *Levene's* test with SPSS version 23.

Table 2. Homogeneity Test Result

levene Statistic	df1	df2	sig
.562	1	57	.457

Whether the data was homogeneous or not, it could be done by comparing significance of F test score which was outlined on table with significant level 0.05. By looking up the value of F test significance on *equal variance assumed* score column, when the significance score ≥ 0.05 , the data would be considered homogeneous. Based on the test by using SPSS version 23, the F test significant value was 0.457 in which $0.457 \geq 0.05$. The data of both group *posttests* were homogeneous.

The Hypothesis Test

Analysis of Reading Literacy Skill Data

The data of reading literacy skill was gained from *pretest* and *posttest* scores. The *posttest* data of both groups is shown on the table below.

Table 3. Result of Reading Literacy Skill

Groups	Min Score	Max Score	Average	Sd
Experiment	70	100	84,13	8,98
Control	65	100	76,6	7,50

Reading literacy skill of experimental group taught by *PBL* assisted by pocket book was better than the control group taught only by *PBL*. The experimental group gained average score 84.13 while the control group gained

average score 76.6. After knowing the score of literacy skill, normality test, classical completeness test, *independent test*, *sample t test*, and N gain score test were done.

Classical Completeness Test

The classical completeness test was done to find out each student's completeness classically dealing with problem solving skill for both groups.

Table 4. Classical Completeness Test Result

Classical Completeness Test	N	Mean	sd	P (%)
Experiment	29	84,13	8,98	93,1
Control	30	76,6	7,50	73,3

The result of the test dealing with problem solving skill of experimental group taught by *Problem Based Learning* assisted by pocket book was 93.1% while the control group taught by *Problem Based Learning* was 73.3%. It could be concluded that classical completeness of experimental group was better. After the data was known classically, then variance average test and N gain score test could be done.

Independent Sample t-test

This test was done to analyze variance average difference for both groups. The statistics test was *independent sample t-test*.

Table 5. Independent Sample t-test of Experimental and Control Groups

Independent Sample t-test	t	Sig (2tailed)	Mean Difference
Experimental and Control Groups' Posttests	3,321	0,002	7,13793

The variance average difference test could be seen on *t-test* column for *Equality of Means*. On the column, the sig score = $0.002 < 0.005$ with $t_{count} = 3.321 > 1.699 = t_{table}$. Thus, H_a was accepted or the average of variance of problem

solving skill by problem based learning assisted by pocket book was better than only using *Problem Based Learning* only. It could be concluded that *Problem Based Learning* assisted by pocket book was effective to implement.

Then, from the table, it is known that "*Mean Difference*" 7.1379. The score shows difference between reading literacy skill of experimental group and control group is $84.1379 - 77.000 = 7.1379$ and the difference is 11.4422 until 2.8336 (95% of *Confidence Interval of the Difference Lower Upper*).

N-gain Score Hypothesis Test of Problem Solving Skill

The result of N-gain score of experimental group was 0.64 and N-gain of the control group was 0.44. The N-gain of both groups were categorized moderate. It could be concluded N – gain of experimental group was higher than control group.

CONCLUSION

Mathematics literacy skill level by using *Problem Based Learning* assisted by pocket book showed pretest result of both groups to have significant differences. It showed that both groups initially having equal skills but later the experimental group's learning process was intervened by *Problem Based Learning* assisted by pocket book while the control group was only intervened by *Problem Based Learning* assisted by pictures. It is suggested to develop further investigation.

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