LEARNING MATHEMATICS FOR SOCIAL PROGRAM STUDENTS OF SENIOR HIGH SCHOOL

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Abstract

This study aims to know the level of social program high school students' motivation and learning outcomes after the implementation of role playing model in learning mathematics. The study was descriptive-quantitative. The subjects were 117 students grade XI social program in SMA N 16 Palembang. The data were collected through questionnaire and test. Questionnaire is used to determine the level of students' motivation, while the test is used to determine students' learning outcomes. The results show that the role playing model can improve level of students' motivation and learning outcomes.

Key words: Motivation, learning outcomes, Mathematics for social program, role playing model.

INTRODUCTION

Learning mathematics is important for all students because it can train students' thinking particularly in logical, analytical, systematic, critical, and creative as well as the ability to teamwork (Depdiknas, 2006;4). In addition, it can support to organize the way of thinking, for instance, develop ability of analyze, create syntheses, perform evaluations, and solve the problem.

The purpose of learning mathematics is not only for learning outcomes but also for increasing some abilities: 1) mathematical communication; 2) mathematical reasoning; 3) mathematical problem solving; 4) mathematical connections; 5) mathematical representations which are standard competences in learning mathematics according to NCTM (NCTM,200)

Another importance of learning mathematics is to develop character of students in making decisions. Therefore, mathematics is also learned for social program students of senior high school. Indeed, mathematics is one of subject in National Exam for them. However, most of social program students have a low score and less motivation in learning mathematics, Moreover, most of teacher does not support them optimally in learning mathematics.

Based on interview with the teacher who teach for social program students of senior high school stated that it is very difficult to teach them because most of students less motivation in learning mathematics. Consequently, students get low score in mathematics examination. To solve this problem, teacher needs change the way of learning mathematics in the class so the motivation of students will be generated. One of the solutions is implemented role playing model in learning mathematics. Through role playing model, students will explore the relationship among students in their role and discuss together to explore their sense, attitude, behavior, and various strategies to solve the problems. Role playing model can stimulate students to learn actively such mathematical concept.

Role playing model is meaningful in learning mathematics because students can involve in learning activity and construct mathematical consepts. Learning process involve students through

This paper has been presented at Sriwijaya University Learning and Education-International Conference 2014. Faculty of Teacher Training and Education, Sriwijaya University, Palembang, May 16—18, 2014.

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some learning approach or learning model such as Contextual learning (CTL), Realistic Mathematics Education In Indonesia (PMRI), cooperative learning model and others.

METHODOLOGY

This research is descriptive-quantitative that is aimed to know the level of students' motivation and learning outcomes after implementing role playing model in learning mathematics. Variable of the research is motivation and learning outcomes after implementing role playing model. Motivation of students will be measured through 25 statements in questionnaire with Likert scale. Learning outcomes will be measured through giving a test consisting of 5 questions. Subjects were 117 social program students of SMA N 16 Palembang.

The procedures of the research are: 1) *preparation* through designing a lesson plan and learning material by using role playing model, 2) *Implementation* through implementing the learning activity based on role playing model, 3) *Closing* through guiding students to conclude the learning process in learning mathematics.

The data collections were questionnaire and test. Questionnaire is used to know the level of students' motivation in learning process. The questionnaire will be presented in likert scale. The statements consist of positive and negative statements. Test is a tool for measuring the knowledge of students regarding mathematical content. The result of test can be used to find out the learning outcomes of students after implementing role playing model in learning mathematics.

The statements of questionnaire are filled by respondent (students) even positive or negative statements which is valued by always, sometimes, seldom and never. Table 1 shows the score for each question on questionnaire.

Table 1. Score of Students' Motivation

Statement	Always	Sometimes	Seldom	Never
Positive Statement	4	3	2	1
Negative Statement	1	2	3	4

Note :

Maximum score = 4 x total statements

Minimum score = 1 x total statements

Then, percentage of score is extended by using quartil

25	43,75	62,5	81,25	100

Table 2. Level of students' motivation

Percentage score	Level
81,26 – 100	Very high
62,51 - 81,25	High
43,76 - 62,5	Low
25 - 43,75	Very low

The data of learning outcome is generated by test. Steps to do analysis of test are:

1. Write a key answer and score of the answer.
2. Check the answer of students.
3. Scoring the answer based on the rubric scoring.

The formula for scoring the answer is :

$$Final\ Score = \left(\frac{Exercise\ 1 + Exercise\ 2}{2}\right) \times 40\% + (test) \times 60\%$$

Then, the classification of learning outcomes can be seen on Table 3:

Tabel 3. Level of students' learning outcomes

Score	Level
85-100	Excellent
70-84	Good
55-69	Average
40-54	Fair
25-39	Poor

(Modification from Arikunto, 2010: 272)

RESULT AND DISCUSSION

The study aims to describe the motivation and learning outcome of social program students in senior high school after implementation role playing model in learning mathematics. Table 4 and Table 5 shows results of the study as follow:

Table 4. Level of students' motivation

Score	Frequency		Level
81,26 – 100	33	28,21%	Very high
62,51 - 81,25	60	51,28%	High
43,76 - 62,5	23	19,66%	Low
25 - 43,75	1	0,85%	Very low
Jumlah	39	100%	-

According to Table 4, it indicates that from 117 students as subjects, there are 32 students that have very high level motivation, 60 students have high level motivation, 23 students have low level motivation, and only 4 students have very low level motivation.

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Tabel 5. Level of students' learning outcomes

Score	Frequency		Level
85-100	32	27,35%	Excellent
70-84	63	53,85%	Good
55-69	18	15,38%	Average
40-54	4	3,42%	Fair
25-39	-	-	Poor
Jumlah	117	100%	-

Based on Table 5, it shows that from 117 students as subjects, there are 32 excellent students, 63 good students, 18 average students, 4 fair students and none poor students.

Discussion

The results show that role playing model can improve motivation and learning outcome of social program students in senior high school. After implementation of role playing model, the level motivation increased because students involve actively in learning process to construct mathematical concepts. Figure 1, 2, and 3 show students' activity in learning process.

Figure 1. Learning Activity

Figure 2. Students' discussion

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Figure 3. Students' presentation

Motivation of social program students can generate pleasure feeling because students are involved even individual or group work in learning mathematics through role playing model. The high motivation of student influences learning outcomes. Similarly, Dimyati (2010:109) stated that motivation is important to achieve maximum learning outcomes.

In the beginning, most social program students of senior high school have less interest in learning mathematics, but after implementationof role playing model, students are active in learning process. It indicated that students are pleased in learning mathematics. Therefore, high motivation of students to learn mathematics can influence good learning outcomes.

CONCLUSION AND SUGGESTION

According to the result and discussion, we can conclude that implementation of role playing model for social program students of senior high school can improve students' motivation and learning outcomes. Since motivation and learning outcome can be improved through role playing model in learning mathematics, so we suggest for mathematics teacher especially social program teacher to involve students in constructing mathematical concepts.

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