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The Use of Modules and Game "Code" On The Padlock as a Media to Improve Motivation of XI Accounting Class in the Material of Combinatorial Analysis in SMK Putra Tama Bantul

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Abstract. The purpose of this research is determine whether or not differences in student motivation between the students' learning with modules and game "code" on the padlock and the conventional learning on the material of combinatorial analysis with basic competencies describe the filling slot, permutations, and combinations of Accounting XI. The type of this research is descriptive quantitative-qualitative research. Students' motivation to learn the data obtained from the questionnaire and interviews. Data analysis conducted students' motivation is a qualitative analysis based on interviews and questionnaire analysis using the Mann - Whitney test. There are differences between the students' motivation to use modules and the method in the game code padlock with conventional teaching methods in the subject odds with the basic competencies describe the filling slot , permutations and combinations in class XI Accounting with the previous year at SMK Putra Tama Bantul . This can be seen on the t-test that prices Sig. (2 - tailed) = 0.000 < 0.05 .

1. Introduction

The conventional method is a method of learning that are most used by teachers. Lecture method is one example of conventional methods. In addition to conventional methods, the media used by the teacher merely stationery or Microsoft Power Point that contains a summary of the material provided. This makes students feel bored and always assumed that math is a difficult matter.

Opinion that math is a material that is difficult to understand cause the value of every student learning outcomes are unsatisfactory. Most schools said the percentage of completeness for mathematics courses less than 50%. With a fairly low percentage of mastery that causes the average value of student learning outcomes also declined.

SMK Putra tama Bantul has an accounting class in every levels. Based on observations and interviews with the teacher, the student at SMK Putra Tama have the same condition in every levels. In this school, the percentage of mastery less than 50 %.

To solve the boredom, the teacher presented a challenge to the students by using the game code on padlock. In everyday life, the padlock is familiar because it is very helpful to secure items such as suitcases, boxes, or home. Padlock consists of 2 different according to how open it is a lock with a lock and key combination. Padlocks with keys can be interpreted that way by using a key to unlock each lock has a different key sizes and while the padlock combination padlock is how open it using a combination of numbers, each consisting of 0-9.

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With the background described above, obtained by formulation of the problem as follows: is there a difference in students' motivation between the modules in the method of game code on the padlock to the conventional method material odds with the basic competencies describe the filling slot, permutations, and combinations of terms of the students' motivation of XI Accounting 2015 with the previous year at SMK Putra Tama Bantul. This study aims to determine whether there is any difference in students' motivation between the modules in the method of the game "code" on the padlock with conventional teaching methods on the topic of combinatorial analysis with the basic competencies describe the filling slot, permutations and combinations in terms of students' motivation in class XI Accounting in 2015 and previous years at SMK Putra Tama Bantul.

2. Research Method

The type of this research is descriptive quantitative-qualitative research. Quantitative descriptive research used to look at the differences in students' motivation. Qualitative descriptive research used to describe the state of students' motivation. Subject of this research is XI Accounting of SMK Putra Tama Bantul. This research was done at SMK Putra Tama Bantul in October 2015. The research is the permitting stage research, direct observation and data analysis.

In this research, student divided into 5 groups. Student work the worksheet in small groups. Then student arrange the number to make a code. Students can open the padlock by the composition of the number from the answer on a worksheet.

3. Main Result

Learning motivation questionnaire must be adjusted with indicator of learning motivation to present the instrument motivation is valid. Indicator of learning motivation show in Table 1

Tabel 1. Indicator of learning motivation

Variable	Indicator	No positive item	No negative item
Motivation	1. Encouragement to study	1, 8	14, 19
	2. desire to do task	13, 20	2, 7
	desire to improve of the learning result	3, 9, 15	21
	4.don't be give up	5, 10	16, 22
	5. don't be hopeless	17, 23	4, 11
	6. Participation in the class	6, 18	12, 24

The result of learning motivation analysis show in Table 2.

Tabel 2 Learning Motivation Analysis

No	Rated aspect	Low	Sufficient	Enough	Information
1.	The questionnaire is compatible with the research			√	
2.	The questionnaire is compatible with the indicator			√	

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3.	Grammar			√	
4.	Number of items			√	

Every statement has been represented all of indicator. Then, learning motivation questionnaire is valid and learning motivation questionnaire can be used as research instrument.

Motivation criteria of each student show in Table 3

Table 3. Motivation Criteria of each student

Range of Scores	Motivation Criteria
81% - 100%	Very High (VH)
61% - 80 %	High (H)
41% - 60%	Sufficient (S)
21% - 40%	Low (L)
≤ 20%	Very Low (VL)

Criteria overall motivation learning will be processed by the formula:

$$H = \frac{\sum f_i}{f} \times 100\%$$

Motivation criteria of all student show in Table 4.

Table 4. Motivation Criteria of All Student

VH	VH+H	VH+H+E	VH+H+E+L	VH+H+E+L+VL	Motivation Criteria
≥ 75%					Very High
< 75%	≥ 75%				High
	< 75%	≥ 65%			Sufficient
		< 65%	≥ 65%		Low
			< 65%		Very Low

The results of the questionnaire, the value of the questionnaire were grouped by the motivation criteria by Kartika Budi. The analysis show in the Table 5.

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Tabel 5. Analysis Learning Motivation

	XI Accounting (before 2015)	XI Accounting 2015
Average	65,68	82,34
Very High	0 %	60 %
High	83,3 %	40 %
Enough	16,7 %	0 %

The analysis of learning motivation for all students shows in Table 6.

Table 6. Analysis of Learning Motivation for all Students

VH		**VH+H**		**ST+T+C**			**Criteria**
XI Accounting 2015	XI Accounting (before 2015)	XI Accounting 2015	XI Accounting (before 2015)	XI Accounting 2015	XI Accounting (before 2015)		
60 %	0 %					< 75 %	
		100 %	83,3 %			> 75%	Tinggi
				-	100 %		

From the table, the value of XI Accounting 2015 is higher than the value of XI Accounting (before 2015). Learning motivation of XI Accounting 2015 and XI Accounting (before 2015) are included in high criteria. XI Accounting 2015 has 60% in very high criteria and 40 % in high criteria. XI Accounting 2015 has 83,3% in high criteria.

Mann-Whitney test uses to see the difference of learning motivation. This is the result with SPSS application,

3.1 Hypothesis

H_0 = the learning motivation at XI Accounting 2015 is the same with XI Accounting (before 2015)

H_1 = the learning motivation at XI Accounting 2015 is different with XI Accounting (before 2015)

3.2 Statistic Test : *Mann-Whitney*

3.3 $\alpha = 0,05$

3.4 The rejection area : H_0 will rejected if *Assym. Sig (2-tailed)* < α

3.5 Output SPSS in Table 5.

Table 5. Output SPSS Mann-Whitney Test

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Mann-Whitney Test

Ranks

	angkatan	N	Mean Rank	Sum of Ranks
hasil	angkatan2015	20	25.50	510.00
	angkatansblm	18	12.83	231.00
	Total	38		

Test Statistics[b]

	hasil
Mann-Whitney U	60.000
Wilcoxon W	231.000
Z	-4.060
Asymp. Sig. (2-tailed)	.000
Exact Sig. [2*(1-tailed Sig.)]	.000[a]

a. Not corrected for ties.

b. Grouping Variable: angkatan

3.6 Conclusion: *Assymp. Sig (2-tailed) = 0,00 < 0,05,* H_0 is rejected. So, the learning motivation at XI Accounting 2015 is different with XI Accounting (before 2015).

The result of interviews with teacher and students', students' said that to memorize and understand the formula in the material of combinatorial analysis is difficult. But, students and teacher feel happy with the game because it can provide the learning motivation be better to use in every lesson.

4. Conclusion

The result of this research concluded that the learning motivation at XI Accounting 2015 is different with XI Accounting (before 2015) at SMK Putra Tama Bantul. It is also obtained from the interview that students feel happy with using the learning modules and game method. Students hope that the method can be used in further learning.

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