ICONSS Proceeding Series
The 2nd International Conference on Natural & Social Sciences (ICONSS 2019)
Palopo, 13 – 14 September 2019

The Influence of Learning Model, School Accreditation and Emotional Ability on Mathematics Learning Outcomes in the Grade VIII Students of Junior High School in Gowa District

Mohammad Ardani Samad [1], Mangindara [2]

Affiliation: Sekolah Tinggi Ilmu Kesehatan Pelamonia Kesdam VII Wirabuana [1,2],

(ardani.samad@gmail.com [1]), (mangindaraakk@gmail.com [2])

Abstract

This study is a quasi-experiment to examine the difference of students' learning result by employing cooperative learning model of STAD type and problem-based learning model as well as emotional ability of students at SMPN (public junior high school) with accreditation A and accreditation B. The population was class VIII students at SMPN in Gowa district of 2018/2019 academic year. Sample was selected using random sampling method and obtained SMPN 2 Sungguminasa accredited A and SMPN 4 Sungguminasa accredited B. There were two variables in this study (1) independent variable consisted of learning model, school accreditation, and emotional ability, and (2) dependent variable, the students' learning result on Mathematics. The intended learning result in this study was cooperative learning model of STAD type and problem-based learning model; the intended school accreditation was school accreditation A and school accreditation B; whereas, the intended emotional ability was optimal emotional ability and test of Mathematics learning result. The results of the study reveal that (1) the average scores of students' learning result in school accreditation A and school accreditation B tend to be similar, (2) the students' emotional ability in school accreditation A has the average score similar with school accreditation B in optimal category, (3) there is no influence of school accreditation towards students' learning result, (4) there is an influence of learning model towards students' learning result, (5) there is an influence of emotional ability towards students' learning result, (6) there is no interaction between school accreditation and learning model toward students' learning result, (7) there is no interaction between school accreditation and emotional ability toward students' learning result, and (8) there is an influence of interaction between learning model and emotional ability toward students' learning result of class VIII students at SMPN in Gowa district.

Keywords: *learning model, accreditation, emotional ability, learning result*

1. Background

Some people think that mathematics is a very frightening specter, and most students are not happy even lazy to go to school if there are mathematics lessons. One of the main obstacles in teaching mathematics in schools now is the lack of enthusiasm for students to learn, students are more likely to accept what is told by the teacher, silent and reluctant to raise questions through opinions. Even worse, in formal learning or assessment situations,

https://doi.org/10.30605/iconss.42

within them negative feelings such as boredom, anxiety, frustration, tension and decreased motivation are formed.

The problem of learning difficulties experienced by students, can be caused by the learning model used by the teacher less precisely, so that makes students bored with what the teacher said, the activeness of students in learning activities is reduced, students sometimes tend to play around in class when teaching and learning takes place , such as: chatting with classmates, in and out of class, noisy and many other activities that can disrupt the smooth teaching and learning process and can affect the learning outcomes. Thus, wrong in choosing a learning model, means it is difficult to achieve learning objectives. The success or failure of the objectives to be achieved is influenced by the effectiveness of the learning process that they felt. This learning model has many types and each has advantages and disadvantages, so teachers are required to choose and use the right learning model. This agrees with Nurwati (2009) which states that one of the causes of students learning difficulties is the teacher applying the learning model that is less precise. In addition, regarding the success or failure of a student in a lesson can also be influenced by several factors. These factor both from within students and from outside students. Factors from outside students one of them is school management.

School accreditation is included in school management. One of the efforts made by the government in order to improve the quality of education, the government issued a decree of the Minister of National Education Number 087 / U / 2002 regarding School Accreditation. In the decree explicitly appointed all schools to be accredited, both public and private schools.

Differences in the level of school accreditation can be considered to indicate differences in the quality of teaching and learning in these schools. Differences in the quality of teaching and learning processes as well as other aspects that surround them are assumed to produce different effects for students who follow this process. An A accredited school is considered to be of higher quality than the teaching and learning process organized by an accredited B school. This means that students who study in an A accredited school will get a better teaching and learning process than those accredited B. In turn their knowledge and skills and other effects of education will also be better than students studying in accredited B schools, including its effect on the emotional ability of the student. The emotional ability of students who study in A accredited schools is assumed to be better than the emotional ability of students who study in B accredited schools, because of different influences due to different quality of teaching and learning processes in schools that have different levels of accreditation.

2. Methods

Table 1. Analysis Design of Mathematics Learning Outcomes

Factor 2 School Accreditation (A)	Factor 1 : Learning Model (P)			
	Cooperative (P_1)		Problem Based (P_2)	
	OEI	SEA	OEI	SEA
A Accreditation (A_1)	X_{AC}	X_{AC}	X_{AP}	X_{AP}
B Accreditation (A_2)	X_{BC}	X_{BC}	X_{BP}	X_{BP}

Information:

A : School accreditation
A_1 : Schools of A accreditation
A_2 : Schools of B accreditation
P : Learning model
P_1 : Cooperative learning model
P_2 : Problem based learning model
OEI : Optimal emotional ability
SEA : Susceptible emotional ability

X_{AC} : The learning outcomes of A accreditation school students who got learning by cooperative learning model
X_{AP} : The learning outcomes of A accreditation school students who got learning by problem based learning model
X_{BC} : The learning outcomes of B accreditation school students who got learning by cooperative learning model
X_{BP} : The learning outcomes of B accreditation school students who got learning by problem based learning model

Followed by analysis of multiple linear regression with the equation model:

$$Y_{ijkl} = \mu + \alpha_i + \beta_j + \delta_k + (\alpha\beta)_{ij} + (\alpha\delta_{ik}) + (\beta\delta_{jk}) + \varepsilon_{ijk}$$

Information:

Y_{ijk} : Observation value at factor 1 level i, factor 2 level j, factor 3 level k and level I repeat
μ : Average in general
α_i : The main influence of factor 1 that are the cooperative learning and problem based learning models
β_j : The main influence of factor 2 that are the level of accreditation A and B
δ_k : The main influence of factor 3 there are optimal and vulnerable emotional ability
$(\alpha\beta)_{ij}$: The influence of component interactions between factor 1 and factor 2
$(\alpha\delta_{ik})$: The influence of component interactions between factor 1 and factor 3
$(\beta\delta_{jk})$: The influence of component interactions between factor 2 and factor 3
ε_{ijk} : Residuals with normal distribution

3. Results and Discussion

Mathematics Learning Outcomes

The mathematics learning outcomes of A accreditation school students who got learning by cooperative learning model

Distribution Table and Percentage Score of Students' Mathematics Learning Outcomes of A Accreditation Schools who got learning by the Cooperative Learning Model

Score	Frequency	Percentage (%)	Category
0 – 34	0	0	Very Low
35 – 54	2	7,69	Low
55 – 64	2	7,69	Medium
65 – 84	19	73,08	High
85 – 100	3	11,04	Very High
Total	26	100	

The mathematics learning outcomes of A accreditation school students who got learning by problem based learning model

Distribution Table and Percentage Score of Students' Mathematics Learning Outcomes of A Accreditation Schools who got learning by the Problem Based Learning Model

Score	Frequency	Percentage(%)	Category
0 – 34	13	37,14	Very Low
35 – 54	20	57,14	Low
55 – 64	1	2,86	Medium
65 – 84	1	2,86	High
85 – 100	0	0	Very High
Total	35	100	

The mathematics learning outcomes of B accreditation school students who got learning by cooperative learning model

Distribution Table and Percentage Score of Students' Mathematics Learning Outcomes of B Accreditation Schools who got learning by the Cooperative Learning Model

Score	Frequency	Percentage (%)	Category
0 – 34	1	3,33	Very Low
35 – 54	1	3,33	Low
55 – 64	11	36,67	Medium
65 – 84	16	53,33	High
85 – 100	1	3,33	Very High
Total	30	100	

The mathematics learning outcomes of B accreditation school students who got learning by problem based learning model

Distribution Table and Percentage Score of Students' Mathematics Learning Outcomes of B Accreditation Schools who got learning by the Problem Based Learning Model

Score	Frequency	Percentage (%)	Category
0 – 34	20	62,50	Very Low
35 – 54	10	31,25	Low
55 – 64	2	6,25	Medium
65 – 84	0	0	High
85 – 100	0	0	Very High
Total	32	100	

Variable of Emotional Ability

The Emotional Ability Students of School A Accreditation Who Got Learning by Cooperative Learning type of STAD

Distribution Table and Percentage Score Students of School A Accreditation Who Got Learning by Cooperative Learning

Score	Frequency	Percentage (%)	Category
45 – 98,5	0	0	Alert
98,6 – 152	2	7,69	Susceptible
152,1 – 188,5	23	88,46	Special
188,6 – 225	1	3,85	Optimal
Total	26	100	

The Emotional Ability Students of School A Accreditation Who Got Learning by Problem Based Learning Model

Distribution Table and Percentage Score Students of School A Accreditation Who Got Learning by Problem Based Learning Model

Score	Frequency	Percentage (%)	Category
45 – 98,5	0	0	Alert
98,6 – 152	11	31,43	Susceptible
152,1 – 188,5	24	68,57	Special
188,6 – 225	0	0	Optimal
Total	35	100	

The Emotional Ability Students of School B Accreditation Who Got Learning by Cooperative Learning

Distribution Table and Percentage Score Students of School B Accreditation Who Got Learning by Cooperative Learning.

Score	Frequency	Percentage (%)	Category
45 – 98,5	0	0	Alert
98,6 – 152	1	3,33	Susceptible

Score	Frequency	Percentage (%)	Category
152,1 – 188,5	28	93,34	Special
188,6 – 225	1	3,33	Optimal
Total	30	100	

The Emotional Ability Students of School B Accreditation Who Got Learning by Problem Based Learning Model

Distribution Table and Percentage Score Students of School B Accreditation Who Got Learning by Problem Based Learning Model

Score	Frequency	Percentage (%)	Category
45 – 98,5	0	0	Alert
98,6 – 152	3	9,38	Susceptible
152,1 – 188,5	24	75,00	Special
188,6 – 225	5	16,62	Optimal
Total	32	100	

From the results of the study using analysis of multiple linear regression obtained the following equation:

Learning outcomes (Y) = 28.1 + 8.15 Accreditation (X1) + 19.5 Learning Model (X2) + 13.1 Emotional Ability (X3) + 0.66 X1X2 + 0.36X1X3 + 7.18 X2X3.

On the table analysis of variance was obtained value of $F_{calculate}$ is 64,28 with probability value 0,000 < α (0,05) which means statistically significant to be rejected H_0 or accepted H_1, which means the independent variables in this study significantly influence on the learning outcomes or in other words that the regression equation model obtained above is significant.

The Discussions about The Influence of School Accreditation on Mathematics Learning Outcomes Students of Junior High School in Gowa District

In A accreditation schools have an average learning outcome of 53.394 and in B accreditation schools have an average learning outcome of 48.24. Viewed from the two average schools with different accreditations, they have not shown significant differences in their learning outcomes. In the field shows that between A accreditation school and B accreditation school does not show a striking difference in learning outcomes in the learning process, especially in the means of the mathematics learning process. One of the factors that causes one of them is because the accreditation assessment is not carried out continuously. So that an A accredited school no longer has the motivation or a suitable method in terms of educational facilities to improve student learning outcomes.

The Discussions about The Influence of Learning Models on Mathematics Learning Outcomes Students of Junior High School in Gowa District

In the learning process students who used cooperative learning models have an average of 70.02, while in the learning process students who used problem-based learning have an average of 34.73. This shows that there are significant differences between the two learning models used. In this case, students who are taught the cooperative learning model are more enthusiastic and enthusiastic during the learning process, when compared to the learning process carried out with the problem-based learning model, students tend to get bored and often seem confused. So it can be concluded that there is an influence of learning models on the learning outcomes students of Junior High School in Gowa District.

The Discussions about The Influence of Emotional Ability on Mathematics Learning Outcomes Students of Junior High School in Gowa District

Based on the emotional ability questionnaire given to students to the two groups, it was found that the average value of emotional ability in A accreditation schools taught by the

cooperative learning models was 171.92, in A accreditation schools that were taught on a problem-based learning was 158.46, at B accreditation schools taught with cooperative learning models are 168.90, at B accreditation schools taught with problem-based learning models is 172.59, for accreditation schools A and accreditation B are taught with cooperative learning models and emotional ability problem-based learning models students are in the optimal category. This can be seen in the learning process students can work together and discuss each other in solving mathematical problems provided. So it can be concluded that there is an influence of emotional ability on mathematics learning outcomes students of Junior High School in Gowa District

The Discussions about The Interaction between School Accreditation and Learning Models on Mathematics Learning Outcomes Students of Junior High School in Gowa District

From the descriptive data of students learning outcomes in A accredited schools taught by the cooperative learning model the achievement of student learning outcomes in general got the mean score of student learning outcomes is 74.81 which is in the high category, in A accredited schools that are taught with problem based learning model achievement of student learning outcomes in general the average score student learning outcomes is 37.48 which is in the very low category. Whereas in B accredited schools that are taught with cooperative learning models student achievement is generally an average score student learning outcomes is 65.86 that are in the high category, in students in B accredited schools taught with problem based learning models achievement of student learning outcomes in general the average score student learning outcomes is 31.72 which is in the very low category. One factor is the state of the class in A accreditation schools and B accreditation schools the same and the facilities provided at the two schools are not optimal, especially in the process of learning mathematics. So it can be concluded that there is no interaction between school accreditation and learning models on mathematics learning outcomes in the grade VIII students of Junior High School in Gowa District.

The Discussions about The Interaction between School Accreditation and Emotional Ability on Mathematics Learning Outcomes Students of Junior High School in Gowa District

Viewed from emotional ability, it has a positive influence on learning outcomes, but if it is interacted with school accreditation, it has not shown differences in learning outcomes. Factors that cause because the school programs used in A accreditation school and B accreditation schools are the same. This can also be seen from school supervisors from A accreditation and B accreditation school not different. This is in accordance with research conducted by Eurike in 2013 that there was no influence between school accreditation on increasing emotional ability. So it can be concluded that there is no interaction between school accreditation and emotional ability on mathematics learning outcomes in the grade VIII Students of Junior High School in Gowa District.

The Discussions about The Interaction between Learning Models and Emotional Ability on Mathematics Learning Outcomes Students of Junior High School in Gowa District

Meanwhile, seen from the emotional ability of students who are in the optimal category and taught with cooperative learning models have an average of learning outcomes that are in the high category, and emotional ability of students who are susceptible and taught also with cooperative learning models have an average of learning outcomes in the low category. While the emotional ability of students who are in the optimal category and taught with problem-based learning models have an average learning outcome in the low category, and emotional ability of susceptible students has an average learning outcome that is in the very low category.

Viewed from emotional ability has a positive influence on learning outcomes, and learning models also have a positive influence on learning outcomes, and if interacted with learning models and emotional ability shows differences in learning outcomes.

4. Conclusion

1. There is no influence of school accreditation on mathematics learning outcomes students of junior high school students in Gowa District.
2. There is influence of learning model on mathematics learning outcomes students of junior high school students in Gowa District.
3. There is influence of emotional ability on mathematics learning outcomes students of junior high school students in Gowa District.
4. There is no interaction between school accreditation and learning model on mathematics learning outcomes students of junior high school students in Gowa District.
5. There is no interaction between school accreditation and emotional ability on mathematics learning outcomes students of junior high school students in Gowa District.
6. There is interaction between learning model and emotional ability on mathematics learning outcomes students of junior high school students in Gowa District.

5. Citation and References

Ari, A. A., & Katrancı, Y. (2014). The opinions of primary mathematics student-teachers on problem-based learning method. *Procedia-Social and Behavioral Sciences*, *116*, 1826-1831.

Awaludin, A. A. R. (2017). Akreditasi Sekolah sebagai Suatu Upaya Penjaminan Mutu Pendidikan di Indonesia. *SAP (Susunan Artikel Pendidikan)*, *2*(1), 12-21.

Anurrahman. (2003). *Belajar dan Pembelajaran*. Bandung : Alfabeta Bandung

Cooper, R.K. and Sawaf, A. (2001). *Executive EQ : Kecerdasan Emosional dalam Kepemimpinan dan Organisasi.* Jakarta: PT Gramedia Pustaka Utama.

Goleman, D. (2009). *Kecerdasan Emosional: Mengapa EI lebih penting daripada IQ.* Jakarta: PT. Gramedia Pustaka Utama.

Muslimin, I. (2000). Pembelajaran Kooperatif. *Surabaya. Unesa*.

Nurwati. (2009). *Studi tentang pembelajaran koperatif tipe STAD, Jigsaw pada materi Sistem Persamaan Linear Dua Variabel di kelas VIII MTsN Model Makassar*. Unpublished Thesis. Makassar:PPs UNM.