

IMPROVING LEARNING OUTCOMES THROUGH APPLICATION OF MODEL *QUANTUM TEACHING*

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ABSTRACT

Student learning outcomes in subjects at SMPN 5 Panggarangan are still relatively low, this is because the learning model used is still *teacher centered*, lack of maximizing student potential, without giving students an active role in learning. This study aims to improve the learning outcomes of students at SMPN 5 Panggarangan by using the *quantum teaching*. This type of research is a collaborative Classroom Action Research (CAR). The research subjects were students at SMPN 5 Panggarangan, totaling 37 students. The instruments used are observation sheets and tests. Observational data were analyzed descriptively qualitatively and data from the test results were analyzed descriptively quantitatively. The results of the pre-action research showed that students' learning outcomes in were low. The average value of the new class reached 64.21 and the percentage of completeness was 40.54%. After doing the action using the *quantum teaching* that varies various learning methods in cycle I, value class average increased to 68.70 and the percentage of completeness increased to 62.16%. Likewise after the improvement of *Quantum Teaching* which is accompanied by encouragement to actively ask questions, give feedback, reinforcement, and the distribution of heterogeneous groups in the action cycle II, further enhances students' learning outcomes. The class average value increased to 76.76 and the percentage of completeness increased to 94.59%.

Keywords: learning outcomes, model *quantum teaching*

INTRODUCTION

Education is a vehicle to improve and develop the quality of human resources. Through education is expected to produce qualified human beings who will support achieving national development goals.

The success of the learning process as an educational process in a school is influenced by many factors. The factors in question are for example teachers, students, curriculum, social environment, etc. Teacher and student factors are important factors. The importance of these teacher and student factors can be demanded through an understanding of the nature of learning, namely as a conscious effort by the teacher to help students so that they can learn according to the needs of their interests.

To achieve this educational goal, the government imposed the 2013 curriculum. The 2013 curriculum is a permanent curriculum implemented by the government to replace the 2006 curriculum which is often referred to as the Education Unit Level Curriculum which has been in force for approximately 6 years. The 2013 curriculum aims to prepare Indonesian people to have the ability

to live as individuals and citizens who are faithful, productive, creative, innovative and affective and able to contribute to the life of society, nation, state and world civilization. By using the 2013 curriculum, it is hoped that students will be able to achieve certain competencies that have been determined as success criteria. In the 2013 curriculum, the teacher's role is very dominant in describing competency standards and basic competencies in the implementation of learning and the implementation of the 2013 curriculum contains content.

The role of the teacher in the teaching process, does not only appear again as a teacher (*teacher*), as its prominent function so far, but shifts as a coach (*coach*), counselor (*counselor*) and learning manager (*learning manager*). This is in accordance with the function of the role of the future teacher. The teacher as a coach, a teacher will play a role in encouraging students to master learning tools, motivating students to work hard and achieve the highest achievements.

Implementation of the process of subjects that require a wide variety of models, media, and learning resources because subjects contain material that requires direct work practice. Through practice students will gain experience and new knowledge through experimentation. The results of the initial measurements showed that the learning outcomes of students were still low compared to other subjects. The average score in the odd semester in the class was 58. Even though the KKM standard (Minimum Completeness Criteria) in that class was 65. This can be seen in the acquisition of student learning outcomes in lessons, which totaled 38 students, only 14 students (36.84 %) who passed the KKM, and 24 students (63.16%) scored below the KKM pass mark. This is a result of the learning process at SMPN 5 Panggarangan when lessons are not conducive, causing a decrease in the value of subjects, so that it can be said that the teaching and learning process is not optimal. Thus, the learning achievement of students at SMPN 5 Panggarangan needs to be improved.

The factor that causes the low achievement in learning is that researchers as teachers have so far delivered traditional material. The researcher as a teacher only transfers knowledge in teaching and still thinks the teacher is the only source of knowledge, students must copy the notes of the researcher as a teacher and just memorize them. Researchers as teachers present lessons using the lecture method, practice questions or *drills*, with little or no supporting media. Researchers as teachers tend to be authoritarian, the learning atmosphere seems stiff and serious. Only the teacher is active (speaking), while the students are passive. If students cannot catch the subject matter, mistakes tend to be assigned to students. Thus the learning process becomes ineffective, so that the learning objectives cannot be achieved optimally.

Seeing these problems the researcher has the desire to improve the pattern of learning in SMPN 5 Panggarangan. To improve learning outcomes, the creativity of researchers as teachers is needed in applying the right model and using learning media so that students are enthusiastic and understand the material being taught. Researchers as teachers also need to increase student activity, communicative interactions among students, involve students as a whole both

physically and psychologically, the relationship between students and teachers which ultimately results in student learning outcomes in subjects can be optimal.

Based on the description above, the effort to improve learning outcomes SMPN 5 Panggarangan to apply the *quantum teaching*. Learning using the *quantum teaching* can hone students' cognitive abilities to find a concept with teacher guidance. From a social perspective, students can collaborate with their group or with other groups. Students can be actively stimulated and have the motivation and interest in learning because the learning model is different from that used by the teacher.

The purpose of writing this article is as one of the solutions that can be chosen by teachers to improve learning outcomes. This research not only offers to improve learning outcomes but also offers to create a fun learning atmosphere. Improving learning outcomes and also creating a pleasant atmosphere is the hope of every teacher and this research will certainly be the right solution.

METHOD

This study aims to improve learning outcomes of students at SMPN 5 Panggarangan. The type of research used is *classroom action research*. According to Oja and Simulyan (in Suyanto, 1997: 17) the forms of classroom action research are divided into four, namely: (1) the teacher as a researcher, (2) collaborative classroom action research, (3) integrated simultaneous, and (4) experimental social administration. In this study, researchers used a form of classroom action research as a teacher researcher. In this case the researcher acts as a teacher and other teachers act as *observers*. This research was conducted in SMPN 5 Panggarangan. The subjects in this study were students at SMPN 5 Panggarangan totaled 37 students. They do experience problems related to low learning outcomes. By looking at these conditions, researchers need to make improvements, especially with the material style. Researchers try to improve student learning outcomes in subjects through the *quantum teaching*.

FINDINGS AND DISCUSSION

Findings

This research action was carried out in 2 (two) cycles. In each cycle consists of two meetings, each meeting consists of 2 hours of lessons. The research results can be described as follows.

Pre-action conditions followed by 37 students. The pre-action stage was carried out to obtain initial data regarding student achievement in subjects before the action was carried out. The data obtained in the pre-action stage was obtained through observation and *pre-test*. The pre-test results obtained data that the class average value was 64.2 with the highest score being 88 and the lowest being 44. Students who had met the minimum completeness criteria (KKM), namely ≥ 65 , there were 15 students (40.5%), this can be seen from the number of students who get a frequency of 65 and above. While those who have not reached the minimum completeness criteria (KKM), namely ≤ 65 there are 22 students (59.5%) can be

seen from the number of frequencies of students who get scores of 64 and below. Based on these data it can be seen that the level of achievement of students in mastering lessons is still lacking, therefore it is necessary to take action to improve learning achievement at SMPN 5 Panggarangan. The data obtained in the pre-action stage is used as a reference in carrying out actions on the first cycle, with the aim of obtaining an increase in student achievement in subjects.

Conditions in cycle I The teacher conducts learning by applying the concept of *quantum teaching* with the acronym TANDUR namely grow, experience, name, demonstrate, repeat, and celebrate.

The teacher carries out the concept of *quantum teaching* to grow by carrying out activities to lure students to observe, then the teacher gives questions and then gives students the opportunity to answer.

The teacher carries out the natural *quantum teaching* concept by dividing students into 6 groups which are divided based on heterogeneous abilities and characters. These groups carry out activities/practicums with materials that have been prepared according to the instructions.

The next *quantum teaching* concept activity carried out by the teacher is *namai*, that is, with the guidance of the teacher, each group holds discussions to solve these problems with the time determined by the teacher, which is 25 minutes. After the allotted time each group presents the results of their group discussion in front of the class and draws conclusions from the problem, and starts with the group that is most ready to move forward. This activity is a demonstration of the *quantum teaching* concept.

Students who are more courageous in asking and responding to questions asked by friends or teachers correctly, the teacher will reward them with praise and applause. After all groups have presented the results of their discussions in front of the class, students and the teacher match the conclusions that have been obtained. Then the teacher gives the opportunity for students to solve these problems on the blackboard and discuss them together. The teacher gives an opportunity to students who are not clear to ask questions.

At the end of the first meeting, an evaluation had not been carried out. At the end of this first meeting, it ended by doing the *quantum teaching* concept again, namely repeating the material that had been given by the teacher giving games to students in the form of a game of scramble to complete the empty columns according to the pictures. The students were enthusiastic enough to take part in the game even though there were still some students making noise.

The teacher gives praise and appreciation to students who have participated in the game, this activity is the concept of celebrating *quantum teaching*. The teacher only gives homework to students to study the material that has been taught and study the material on the force of gravity and continue to study so that students are getting smarter. In addition, the teacher also motivates students to continue studying the material so that they understand more. The teacher ended the meeting with closing greetings.

The evaluation was carried out at the end of the first cycle to determine the level of student learning achievement. Measurement of student achievement is done by giving questions to students (the questions are in the appendix). Students work on evaluation questions individually. The results of the quantitative descriptive analysis show that the class average score obtained by all students in the evaluation cycle I reached 68.7 with the highest score of 93 and the lowest score of 52.

As for the Frequency Distribution of Achievement Scores in Learning Outcomes cycle 1:

Table 1. Frequency Distribution of Achievement Scores Learning cycle 1

No.	Value	Frequency	Cumulative Frequency	Percent Cumulative
1.	93	1	1	2,7
2.	85	1	2	5,4
3.	81	3	5	13,5
4.	78	4	9	24,3
5.	74	5	14	37,8
6.	70	5	19	51,4
7.	67	4	23	62,2
8.	63	5	28	75,7
9	59	2	30	81,1
10	56	6	36	97,3
11	52	1	37	100
Total		37	-	100

Based on the table above, it can be seen that students who have met the minimum completeness criteria (KKM), namely ≥ 65 , there are 23 students (62.2%). This can be seen from the frequency of students who score 65 and above. While those who have not reached the minimum completeness criteria (KKM), namely ≤ 65 there are 14 students (37.8%) can be seen from the number of frequencies of students who score 63 and below. The following are the criteria for achieving learning achievement in SMPN 5 Panggarangan. Based on the above criteria, the description of learning achievement in Stage 1 cycle is as follows:

Table 2. Category of Achievement of Learning Outcomes Cycle 1

Class Interval	Category	Number of Students	Percentage (%)
86 – 100	Very good	1	3
71 – 85	Good	13	35
56 – 70	Enough	22	59
41 – 55	Less	1	3
≤ 40	Failed	0	0

Comparison of values between pre-action and cycle I can be seen in the following table. For complete data can be found in the attachment.

Table 3. Statistical Comparison of Learning Outcomes Pre Action and Cycle I

Observed Aspect	Pre Action	Value Cycle I
Value Highest score	88	93
Lowest score	44	52
Average value	64.2	68.7

Table 4. Comparison of Percentage of Learning Completeness Pre Action and Cycle I

Aspects Observed	Pre Action	Cycle I
Number of students who complete	15	23
Number of students who do not complete	22	14
Percentage of students who complete	40.5%	62.2%
Percentage of students who do not complete	59%	37.8%

Based on the data above, it can be concluded that, between students' scores in the pre-action which had not been subject to action and the scores of students in cycle I who had been subjected to action had increased. The class average score in the pre-action reached 64.2 while the class average value in cycle I reached 68.7. The percentage of completeness of students who have fulfilled the KKM of all students has also increased. In the pre-action the completeness of the students reached 40.5% while in the first cycle it reached 62.2%.

In cycle I, the class average score met the minimum completeness criteria (KKM), but the percentage of completeness of students who had reached KKM had not reached 75%, so the research continued to cycle II.

Based on the results of reflection in cycle I, it is necessary to carry out further action, namely cycle II, with the aim that the results obtained by students can meet the specified success criteria, namely at least 75% of the total number of students scoring ≥ 65 and the class average score reaching ≥ 65 . Implementation of learning in cycle II still uses the same steps but there are improvements based on the results of reflection in cycle I. After learning in cycle II ends the evaluation is carried out again. Student test results obtained data in the form of numbers regarding the total score obtained by each student. The results of the quantitative descriptive analysis show that the class average score obtained by all students in the second cycle evaluation reached 76.8 with the highest score being 100 and the lowest score being 63.

The results of the scores obtained by students in cycle II can be presented in the following table:

Table 5. Frequency Distribution of Achievement Scores of Learning Outcomes Cycle II

No.	Value	Frequency	Cumulative Frequency	Percent Cumulative
1.	100	1	1	2.7
2.	93	2	3	8.1
3.	87	3	6	16.2
4.	83	5	11	29.7
5.	80	5	16	43.2
6.	77	4	20	54.1
7.	73	3	23	62.2
8.	70	7	30	81.1
9.	67	5	35	94.6
10.	63	2	37	100
Total		37	-	

Based on the table above, it can be seen that there are 35 students (94.6%) who have met the minimum completeness criteria (KKM) ≥ 65 . Meanwhile, there were 2 students (5.4%) who had not reached the minimum completeness criteria (KKM) ≤ 65 . It can be seen from the number of students who scored 63 and below. The following are the categories of Learning Outcomes in Cycle II in SMPN 5 Panggarangan.

Table 6. Categories of Learning Outcomes in Cycle II

Class Interval	Category	Number of Students	Percentage (%)
86 – 100	Very good	6	16
71 – 85	Good	17	46
56 – 70	Enough	14	38
41 – 55	Less	0	0
≤ 40	Failed	0	0

Comparison of values between cycle I and cycle II can be seen in the following table. For complete data can be found in the attachment.

Table 7. Statistical Comparison of Learning Outcomes Cycle I and Cycle II

Aspects Observed	Cycle I	Value Cycle II
Value Highest value	93	100
Lowest value	52	63
Average value	68.7	76.8

Table 8. Comparison of the Percentage of Learning Completeness in Cycle I and Cycle II

Aspects Observed	Cycle I	Cycle II
Number of students who complete	23	35
Number of students who do not complete	14	2
Percentage of students who complete	62.2%	94.6%
Percentage of students who do not complete	37.8%	5.4%

From the data above it can be concluded that, between student scores in cycle I and cycle II has increased. The class average value in cycle I reached 68.7 while the class average value in cycle II reached 76.8. The percentage of completeness of students who have fulfilled the KKM of all students has also increased. In the first cycle the completeness of the students reached 62.2%, while in the second cycle it reached 94.6%. These results have fulfilled the criteria for research success, so they were not continued in the next cycle.

Discussion

Based on the results of the pre-cycle test conducted by the researcher, the data obtained was a class average value of 64.2, a maximum value of 88, a minimum value of 44 and a range of 44. Meanwhile, the percentage of students who had achieved the KKM was only 40.5% and most students fell into the category less achievement. These results illustrate that students' achievement and understanding in style material is still quite low. Therefore, there is a need for corrective action that must be carried out immediately by the teacher to improve student learning achievement which is low. At the time of observation, researchers saw that learning activities did not attract students' attention.

The teacher teaches material with lectures obtained from books and considers the teacher to be the only source of learning. Students only obtain information through listening, reading and note-taking activities. The learning resources used mostly come from teachers, books and pictures. Therefore, there are still many students who are less enthusiastic about learning abstract style material.

According to Piaget (Siti Partini, 1995: 2-6) is in the concrete operational stage, where at this stage learning activities that involve students in direct experience are very effective compared to teacher explanations in verbal form (words). This is in accordance with the statement of Samatowa (2006: 5) in learning activities students will practice conveying ideas and providing relevant responses to a problem that is raised. Therefore, it is necessary to have a model in learning to clarify the meaning of the material conveyed by the teacher, so that it is more quickly understood and understood by students.

In learning cycle I, the teacher uses the *quantum teaching* to help students understand the material presented. With the *quantum teaching* that links the material being taught with real-world situations of students, so lessons that look complicated become easier to understand. This makes students look more

enthusiastic in participating in learning and looking for answers to experiments delivered by the teacher. This statement is in accordance with what was expressed by DePorter, (1999: 34), that *quantum teaching* is a new perspective that facilitates the student learning process by composing lively learning with all the nuances that exist in and around the learning environment situation through interactions in class.

The average value of the first cycle learning class showed an increase when compared to the pre-cycle, namely from 64.2 to 68.7. The maximum score is 93 and the minimum score is 52. While the percentage of students who have achieved KKM in cycle I increased by 21.6%, from 40.5% in pre-cycle to 62.2% in cycle I. Meanwhile in the category of achievement in learning in cycle I, students who fall into the failed category 0 students, 1 student less, 22 students enough, 13 students good and 1 student very good. The increase in student learning outcomes in cycle I was due to the *quantum teaching* used by the teacher to facilitate and guide students in discovering the concepts of material. In learning, study groups were formed, so as to attract students' attention and enthusiasm in participating in learning. This is in line with the opinion of DePorter (2009: 103) that the learning environment greatly influences the success of the teaching and learning process.

Actually for cycle I the average value obtained by students has fulfilled the research success, but the percentage of success has not reached 75%. For this reason, the research continued into cycle II by looking at important notes that still needed to be reflected again for the next lesson.

The actions taken in cycle II still use the *quantum teaching*, but the teacher divides students into small heterogeneous groups based on achievement, gender, and social habits. This is in line with Slavin's opinion in Etin Solihatin (2009: 4). According to him, the division of heterogeneous groups is intended so that group members can work together and can transmit their knowledge to one another. Recalcitrant and indifferent students become more focused on studying, and student achievement increases.

In cycle II, learning outcomes increased when compared to cycle I. This was indicated by an increase in the class average score from 68.7 to 76.8. The percentage of students who achieved the KKM in cycle II also increased by 32.4%, from 62.2% in cycle I to 94.6% in cycle II. The *quantum teaching* used in cycle II is more effective than in cycle I because the teacher is more intensive in providing guidance to study groups in drawing conclusions and motivating students to make presentations so that student activity tends to increase compared to cycle I. In addition to students being given guidance and motivation, the teacher also gives awards to active groups. This can increase student motivation to be more active in group activities, including discussions on working on questions and presentations. This is in line with the opinion of Syaiful Bahri Djara & Aswan Zain (2002: 168-176) knowing the results that have been done by students and giving gifts is a form of motivation that can be used to maintain students' interest in the learning material provided. The data generated in cycle II turned out

to have fulfilled the success of the research, so that the research did not need to be continued in the next cycle.

CONCLUSION

Based on the results of the research and discussion in the previous chapter, it can be concluded as follows.

1. In the pre-action stage, it shows that the learning outcomes of fifth grade students are low. The average value of the new class reached 64.21, while the percentage of completeness was 40.54%.
2. In cycle I, learning was carried out using the *quantum teaching* and varying methods grade point average increased to 68.70, while the percentage of completeness increased to 62.16%.
3. In cycle II, with the improvement of *quantum teaching* in cycle I, which was accompanied by encouragement from the teacher and guidance in groups to actively ask questions, feedback, reinforcement, and heterogeneous group division, further improved the learning achievement of fifth grade students. -the class average increased to 76.76, while the percentage of completeness increased to 94.59%.
4. Based on the results of observations, so that the learning outcomes obtained by students can be in accordance with what is expected in using the *quantum teaching*, then in the implementation of learning activities clear teacher instructions and giving stories and various examples related to students' daily lives are needed.

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