

Increasing Activities and Mathematics Learning Outcomes Using the Cogan Model in Elementary School Students



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ABSTRACT: The problems in this study are the lack of understanding of students, low interest in Mathematics, and teacher-centered learning. The purpose of carrying out this research is to describe the activities of educators and students and to increase learning outcomes. Using Classroom Action Research, with a qualitative approach, results from observation sheets and learning achievement tests. These results indicate that the teacher's activities at each meeting have increased to become "Very Good". The activity of students also increased at meeting 1 to get "Quite Active" and increased at meeting 4 to become the criteria of "Very Active". The classical completeness of student learning outcomes at meeting 1 obtained 44% and increased at meeting 4 obtained 94%. Based on the results of these studies it can be concluded that there is an increase in activity and learning outcomes with the use of the COGAN model.

KEYWORDS: Activities, Learning Outcomes, COGAN

INTRODUCTION

Along with the times, the world of education also continues to experience changes, commonly known as the era of disruption. Disruption in question is a condition when something is required to continue to innovate to keep up with developments. According to Wibawa (2018) dalam Risdianto (2019: 3) the world of education is demanded to be able to equip students with 21st-century skills, where in this century higher order thinking skills (HOTS) are needed. Students are required to have three crucial abilities in thinking, namely: critical thinking, creative thinking, and thinking in solving problems (Jannah, Sari, Hartini, Amelia, & Fahlevi, 2022). The world of education is required to develop 4C abilities in students which include: *creativity, critical thinking, communication dan collaboration* (Jannah, Radiansyah, et al., 2022). In addition, the skills to find, manage and convey information as well as skills in using information and technology are also needed in the current era.

Learning in Schools is currently implementing the 2013 curriculum, which is designed to carry out learning by involving several disciplines so that it can provide a broad learning experience to students and is able to direct students to adapt themselves to the environment Jannah, Sari, Hartini, Amelia, & Fahlevi (2022). The 2013 curriculum emphasizes a holistic educational process so that it touches on a wider scope, namely the cognitive, affective, and psychomotor domains (Setiadi, 2016).

One of the subjects in the 2013 curriculum that must be mastered by students at the elementary school level is mathematics which is a very important and core science in various disciplines. Rasyid (2017: 178); Somawati (2018) say that mathematics can be a very important subject in learning from the elementary school level to higher education which is able to create control of thinking within the framework of students' basic thinking abilities.

In fact, now mathematics is always a big problem due to the low ability of students in mathematics subject matter Susanto (2015: 185). Elementary school students often have difficulty with math subjects that are interesting to students, so students feel bored with learning. Based on the results of interviews with educators in class V UPTD SDN 1 Liang Anggang and documents in the form of students' values in achieving mathematics learning outcomes, it turns out that they have not been fully achieved, especially in mathematics learning. Constraints that occur in learning, students have difficulty remembering learning concepts, students are less active, and learning is carried out using lecture and question and answer methods, and assignments. This resulted in students often getting unsatisfactory scores from the KKM that had been set, which was 65.

Based on the results of observations, it can be seen from the results of the achievement of learning mathematics in Class V students of UPTD SDN 1 Liang Anggang, Tanah Laut Regency, for the 2020/2021 academic year, they obtained low scores which were still below the $KKM \geq 65$, out of 18 students only 7 (39%) were successful and 11 people (61%) had not reached the KKM. Meanwhile, in the 2021/2022 academic year, they obtained low scores who had not reached $KKM \geq 65$, out of 16 students only 7 (44%) were successful and 9 (56%) had not reached KKM. If this problem is allowed to drag on, students will have

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difficulty learning and have difficulty understanding mathematical concepts in subsequent lessons. Apart from having an impact on daily learning outcomes, students will also find it difficult to answer questions on general tests, because mathematical concepts are systematically arranged from the simplest to the most complex.

Based on the problems described above, one of the efforts that can be made to overcome these problems is to combine meaningful learning models for students, namely by applying the COGAN learning model, which is a combination of learning models. Connecting, Organizing, Reflecting, Extending (CORE). Group Investigation (GI) and Team Game Tournament (TGT).

The model CORE is a model that emphasizes students' thinking skills or higher-order thinking to connect, organize, explore, manage, and develop the information obtained (Shoimin, 2014: 39). This GI model can be a small gathering event to direct and empower students to be involved in learning. This strategy requires students to have good skills in communication and the ability to handle groups. This often happens because of a sense of harmony in the group, so that they can communicate effectively and work together in an easier language, when examining students' working memory, students become dynamic, more enthusiastic, and draw the right conclusions, learning is fun. Besides that, it can increase students' difficult work. more dynamic and driven (Fathurrohman, 2015). Team Game Tournament (TGT) is a model that emphasizes academic games and tournaments. (Shoimin, 2014: 207) explains things that can be improved by using the existing TGT model, namely growing a sense of fellowship and sharing appreciation for individuals to collect individuals. Combining these three models means incorporating elements of cooperation into the learning process, namely in the model step that is implemented (Jannah dan Fahlevi, 2019: 77).

This study aims to describe the activities of educators, analyze the increase in student activities, and increase learning outcomes in learning Mathematics material "Properties of Constructing Space" using the model COGAN. to students in class V UPTD SDN 1 Liang Anggang.

METHOD

The research method used is qualitative, with the type of Classroom Action Research (CAR). PTK is an examination of activities that are deliberately raised in a learning process whose aim is to improve the quality of classroom learning (Radiansyah, Jannah, & Sari, 2021). This research was conducted in 4 meetings. The research location setting was carried out in class V UPTD SDN 1 Liang Anggang. With the subject of class V students totaling 16 people consisting of 8 boys and 8 girls. The factors studied were activities in activities carried out by educators and students, and learning outcomes obtained by students. Observe the activities of educators and students for qualitative data collection. The results of learning to collect quantitative data. The techniques used in data analysis are descriptive and cross-tabulation techniques. With indicators of the success of educator activities, it can be said to be successful if educator activities achieve a score of ≥ 30 in the "very good" category. Student activity is said to increase if the acquisition of student activity in the classical percentage of the teaching and learning process reaches $\geq 82\%$ with the criteria of "very active". The learning outcomes of students in this learning activity are if individual completeness is achieved ≥ 65 whereas classical perfection when $\geq 80\%$.

RESULT AND DISCUSSION

Based on the observations obtained, the activities carried out by educators, the activities carried out by students, and the learning outcomes obtained from meeting 1 to 4th, there was an increase in the implementation of learning activities carried out by educators at each meeting. Recapitulation of educator activities at meetings 1 to 4 is shown in the table below.

Table 1. Recapitulation of Educator Activities

Meeting	Score	Criteria
1	24	Good
2	26	Good
3	30	Very Good
4	35	Very Good

Based on the table above, it is known that the quality of learning carried out by educators in each meeting always shows an increase. Learning was carried out well because each meeting experienced an increase from meeting 1 with a score of 24 "good" criteria, meeting 2 with a score of 26 "good" categories, meeting 3 with a score of 30 criteria of "very good" and meeting 4 with a score of 35 with "very good" criteria. This increase is because educators are careful in choosing models to grow the quality of learning to be more optimal and educators always reflect in each meeting assisted by observers so that it supports improving the quality of learning from meetings 1 to 4. In line with Radiansyah et al. (2022) that educators must carry out updates and be careful in selecting learning models so that learning activities are more meaningful.

The impact of increasing teacher activity can make students interested and enthusiastic in participating in lessons using the COGAN model so that students play an active role in learning activities. In line Amberansyah (2017: 41) that the learning

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process is the main activity in school education because in the teaching and learning process at school students are expected to be able to play an active role and improve their abilities both new abilities in terms of knowledge, attitudes, and skills.

Based on the descriptions above, the researcher concluded that learning activities using the COGAN learning model can increase the activities of educators in carrying out learning activities which have an impact on increasing activity and learning outcomes for students. This happens because this model has the virtue of being able to provide opportunities for educators to make students participate actively in learning.

Relevant previous research can strengthen the results of research that using the COGAN learning model can improve learning outcomes such as research conducted by Mustikasari (2018); Esse (2021) which shows that the CORE model is able to make activity increase gradually with very active categories. Research by Maryani (2019); Sari (2019) shows the results that the use of the GI model can increase student activity in the "very active" category. Research Moh. Muchlissudin (2013) shows that the use of the TGT model can increase activity in the "very active" category. Based on the description above, it can be concluded that learning activities use the COGAN model able to increase the activity of educators in teaching and learning activities. The summary of student activities at meetings 1 to 4 can be seen in the following table.

Table 2. Recapitulation of Student Activities

Meeting	Score	Criteria
1	44%	Modarately Active
2	63%	Active
3	81%	Active
4	94%	Very Active

Based on the table above, it can be seen that there was an increase in the activities carried out by students from meeting 1 with 44% classical completeness increasing until meeting 4 to 94% classically. This increase occurred due to improvements in educator activities which had an impact on student activities in learning. According to Suriansyah, Aslamiah, Sulaiman, Noorhafizah (2014: 41) that the application of accurate teaching strategies is very important, therefore the strategies used should generate high attractiveness when delivering subject matter so as to cause serious interest and attention of students to study learning material. The strategy carried out by educators can increase student activity in participating in a lesson that is in accordance with the characteristics of elementary school-aged children and provides a comfortable and pleasant environment for learning in class.

Increased student activity at each meeting because educators are trying to correct deficiencies in learning activities so that further learning is much better and students are interested in participating in each lesson. In this way, it has been shown that educators are able to carry out learning preparations to the fullest and are able to advance their implementation as expected.

Success in improving student activities does not escape from the role of educators who have a great influence on student activities that occur in the classroom. If an educator is not able to master the class well, it will result in the inactivity of the students in the learning process and even result in incomplete learning. Educators as instructors should be able to master the class in order to activate the students and make the students enthusiastic in learning so that they can increase the learning results to the maximum. In line with Radiansyah (2013) that the increase in student activity cannot be separated from the strategies used by educators to make students more active in learning.

The conclusion from the description above is that the COGAN model used in this study is a combination of various models that have been tested which can improve students' learning activities in learning so that they are more focused and able to make students easier to accept and understand the learning carried out so as to improve learning outcomes. The recapitulation of student learning outcomes at meetings 1 to 4 can be seen in the following table.

Table 3. Recapitulation of Learning Outcomes Student Activities

Ability	Meeting			
	1	2	3	4
Cognitive	44%	62%	88%	94%
Affective	38%	44%	75%	94%
Psychomotor	44%	56%	75%	87%

Based on the table above, it can be seen that the use of the COGAN model can make students understand more and know more about the problems faced by educators in carrying out school assignments in class V UPTD SDN 1 Liang Anggang, Mathematics content. The results in the cognitive abilities of the first meeting of students reached 44%, at the second meeting it reached 62%, at the third meeting it reached 88%, at the fourth meeting it reached 94%. The affective aspect at meeting 1 of students who completed reached 38%, meeting 2 with a percentage of 44%, meeting 3 with a percentage of 75%, and meeting 4 reached a percentage of 75%. Psychomotor aspects at meeting 1 reached 44%, meeting 2 increased significantly to 56%, meeting 3 reached 75%, and at meeting 4 reached 87%.

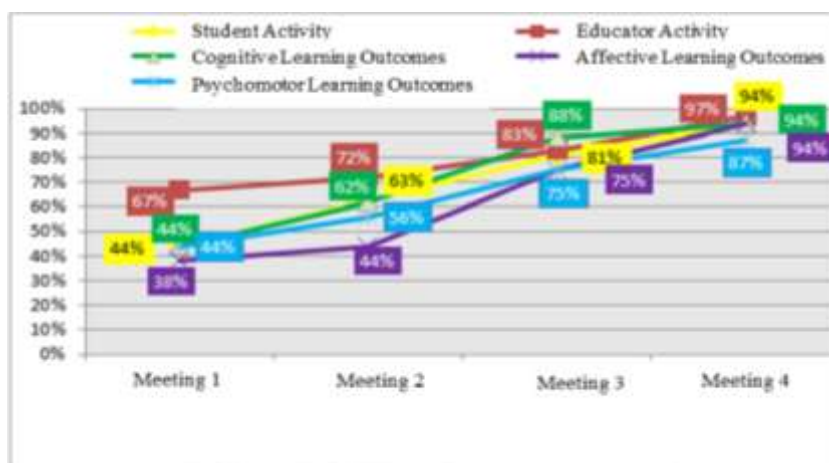
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The increase that occurs at each meeting is caused by educators always seeking improvements to the deficiencies in the method of delivering material that occurs in learning activities that are carried out and corrected at the next meeting so that there is always an increase in student learning outcomes at the next meeting. This increase proves that the application of an innovative learning model by combining the steps and concepts used has a better impact than learning that is not given innovation or can be said to use a monotonous method in learning.

Research using the COGAN model can improve student learning outcomes because the activities of educators and students increase so that it has a good impact on learning outcomes. This observation of student learning outcomes was reinforced by several other researchers including Jannah, et al (2022) showing that the GI model can improve student learning outcomes and the results of research conducted by Mustikasari (2018); Esse (2021) which show that the use of the CORE model is able to make activity increase gradually so as to get a very active category.

Learning outcomes based on targets are divided into two groups, namely information and certain abilities. Information on learning outcomes is divided into four types, namely actuality information, method information, concept information, and related talents. This learning outcome is influenced by the involvement of students as a result of interaction with the physical world and its environment. A person's learning outcomes depend on what has been known in learning so far, as well as concepts, goals, and inspiration that influence intuition with the material studied by Suprihatiningrum (2017). It is very important to carry out an assessment or assessment for each lesson. Evaluation is carried out by the teacher on learning outcomes to measure the level of achievement of student competence, and is used as material for planning learning progress reports, and learning preparation progress.

Based on this description it can be concluded that learning is carried out by educators using learning models COGAN in mathematics subjects can improve student learning outcomes. From all the research results that have been carried out, the increased activity of educators and students as well as learning outcomes can be seen in the graph below.



Picture 1. All Aspect Trend Graph

From the picture above it is known that there is a tendency to increase the activity of educators, students, and learning outcomes in meetings 1 to 4. The significant increase in student activity is due to an increase in the quality of learning carried out by educators. The increase in the activity of educators occurs because of the results of the exercises and the progress of the reflections given by the observers. Reflection activities are very important to be carried out in every teaching and learning process if the teacher wants the learning to be of "good" or even "very good" quality. In line with Jannah, et al (2022) that good learning activities greatly influence optimal learning outcomes.

CONCLUSIONS

Based on the results of classroom action research conducted on fifth-grade students of UPTD SDN 1 Liang Anggang using the COGAN model in mathematics learning the implementation of educator activities was "very good" and could increase all student activities, as well as increased the results obtained from student learning. So it is suggested to school principals, this research can be input in coaching educators in schools they lead and developing school programs in terms of learning innovation, namely developing approaches, strategies, and learning innovations so as to improve the quality of learning processes and outcomes. To educators, this research can provide educators with confidence that the COGAN learning model can increase the capacity of educators to improve learning so that students can be effectively involved in learning. Suggestions in this research, it is hoped that this research can become a reference for educators as an effective and efficient learning model that can also foster student motivation in attitude, knowledge, and skills. and to other researchers, it can be applied and developed as a reference to bring up

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innovations in other learning models in order to improve the quality of education in elementary schools and the learning outcomes of students, especially in learning Mathematics.

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