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Increasing Student Activeness Through Differentiated Learning

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ABSTRACT

This research was initiated by the teacher's reflection on the students' activeness in junior high school. During the learning process, it can be seen that the students' activeness of SMP Negeri 3 Jember was low. This research aimed at collecting data and information about students' activeness of the eighth grade students at SMP Negeri 3 Jember by implementing differentiation learning. Classroom action research with a qualitative approach was implemented in this study. The subject of the research was the eighth-grade students at SMP Negeri 3 Jember as many as 31 students. This research was carried out in two cycles. The design of the research consisted of (1) planning, (2) implementing, (3) acting and observing, (4) reflecting. The data were collected through observation techniques. The data were analyzed using the percentage technique. The results of the research showed that there was an increase in students' activeness by 24%. Therefore, the differentiation learning could improve the eighth-grade students' activeness at SMP Negeri 3 Jember.

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INTRODUCTION

Indonesia is a country that is very rich in diversity (Mukrimaa et al., 2016). In the field of education, we are also aware of the large diversity of students. The diversity of students includes economics, beliefs, religion, race, ethnicity, language, physical appearance, gender, family background, hopes, abilities and motivation to learn. The diversity of students occurs because they come from different environments and cultures according to the geographical conditions where they live. With the diversity of students, educators should be able to facilitate this diversity because every student has the right to receive quality learning.

Diversity (Banks, 2005) is a natural type of students in general who are always different from one another in certain ways. There are several theories related to student diversity. Based on ecological systems theory, Urie Bronfenbrenner

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(1986) explains that individual development in its interaction with the environment outside itself continuously influences all aspects of development.

Individual student interactions can also be observed in classroom activities during the learning process. The learning trend currently used is still centered on the teacher by telling stories or lecturing and then students taking notes on what the teacher has explained. Student interaction in the classroom tends to be less or inactive. This can result in students' low understanding of the lesson material presented so that learning objectives are difficult to achieve.

One aspect that influences the success of achieving competency in a subject is how a teacher can manage learning. A teacher is required to be able to facilitate a wide variety of students and consider learning approaches that can increase students' activeness in learning.

Several characteristics of active learning as stated in the ALIS (Active Learning In School) model learning guide which was explained again by Hamzah B. Uno et al. (2011:75-76) include (1) Student-centered learning, (2) Learning related to real life, (3) Supporting students to think at a higher level, (4) Serving students' different learning styles , (5) Encourage multidirectional interaction between students and students, students with teachers, and teachers with students (6) Using the environment as a medium or learning resource, (7) Arranging the learning environment makes it easier for students to carry out learning activities, (8) The teacher acts as a facilitator by always monitoring the students' learning process, (9) The teacher provides feedback on the students' work results.

The implementation of the independent curriculum is an effort to improve the quality of formal education in Indonesia, in its implementation the independent curriculum is a learning development process and one of them is passive learning patterns becoming learning and individual learning patterns becoming group (team-based) learning.

In choosing learning methods, teachers should always pay attention to the factors of students who are the subject of learning, because each student basically has various abilities and ways of learning. This diversity can lead to different needs for each individual student. However, this does not mean that learning must be changed to individual learning, but rather an alternative learning is needed that allows the needs of all individual students to be met.

The Independent Learning Curriculum is a solution to the problem of student diversity. In this curriculum, educators can facilitate this diversity by implementing differentiated learning that provides flexibility and is able to facilitate students' needs to increase their potential in accordance with students' different learning readiness, interests and learning profiles. According to Tomlinson (2001), differentiated learning is an effort to adapt the learning process in the classroom to meet the learning needs of students as individuals. Differentiated learning has four aspects, namely content, process, product and learning environment. Differentiated learning can be used to meet the needs of students in class in accordance with the Independent Learning Curriculum which is student-centered and can make students more active in order to fulfill curriculum targets, namely achieving learning goals.

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Therefore, this research aims to explain and evaluate the application of differentiated learning in increasing the activity of class VII students with various characteristics. It is hoped that implementing this learning will be the first step in efforts to improve the quality of formal education, especially for class VII students. Apart from that, the results of this research can also provide recommendations for teachers and other educational practitioners in designing better mathematics learning.

METHOD

Subject, Time, and Place of Research

The subjects of this research were 31 students in class VII-G UPT SMP Negeri 3 Jember in the 2022/2023 academic year, consisting of 17 boys and 14 girls.

Implementation time is in the even semester of the 2022/2023 academic year. Held from April 6 2023 to June 10 2023 in class VII-G on lines and angles. This research begins with pre-cycle activities, then implements cycle I, and ends with cycle II activities.

Types of research

The research carried out is Collaborative Class Action Research (PTKK) which focuses on efforts to change current real conditions towards the expected conditions. This research is qualitative research which aims to improve and find solutions to real and practical problems in improving the quality of learning in the classroom which are experienced directly in interactions between teachers and students who are learning.

Implementation Steps

This research began with preliminary actions in the form of problem identification by carrying out pre-cycle activities, then implementing cycle I, and ending with cycle II activities. Pre-cycle is an initial observation activity of students. Data collection on diagnostic assessment results was obtained before carrying out this PTKK research.

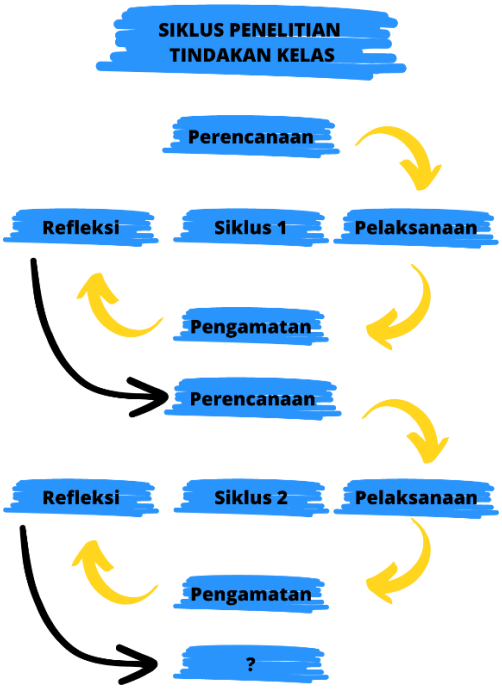

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Figure 1. Flow of PTK Kemmis and Taggart implementation

This research uses a cycle design which includes planning (*plans*), implementation (*action*), observation (*observation*), and reflection (*reflection*). The implementation of the PTKK was carried out collaboratively with the MGMPS (Subject Teachers' Conference in Schools) team to avoid subjectivity.

Pre-Cycle Implementation

At this problem identification stage, the researcher carried out a data collection process using an observation sheet instrument to obtain data on students' activity in line and angle material which still used conventional lecture or lecture learning methods. Data collection was carried out by 3 observers who were members of MGMPS. After the data collection process at the pre-cycle stage is complete, the data obtained is then immediately analyzed to obtain results which will later be used as a guide for researchers to determine the activities to be carried out in the next cycle.

Implementation of Cycle I

After the pre-cycle is carried out and the results of the reflection are obtained, the results of the reflection from the pre-cycle stage will be used as the main problem in carrying out the activities in this first cycle. Details of the activities to be carried out in this cycle are as follows:

Planning (*Plans*)

After getting the main problem, the planning stage begins, namely planning what activities will be carried out to fix the learning problem. The main thing that is done in this planning stage is to equalize the perceptions between researchers, observers and teachers of the subject concerned first, so that later during implementation, researchers and subject teachers have the same understanding in implementing the inquiry learning model with a content differentiation approach based on interests. learners.

After equalizing perceptions about the learning model and approach that will be applied, the researcher prepared several preparations as follows: (1) preparing a Learning Implementation Plan (RPP) for cycle I, cycle I is planned for 1 meeting with time3 40minutes, (2) compiling an LKPD on the sub-material of relationships between angles with 3 different contents, namely right angles, right angles and opposite angles, (3) compiling a reflection sheet, (4) dividing into study groups, (5) preparing a sheet observing student activity, (6) determining criteria for learning success. In this research, students are said to be successful if the percentage of students' activeness in learning has reached a minimum75.00%.

Implementation and Observation (*Action and Observation*)

The implementation and observation stages are the core activities of this classroom action research, because the process includes the implementation of a content differentiation learning approach based on students' interests and an inquiry learning model that has been prepared to increase the activity of students in class VII-G UPT SMP Negeri 3 Jember on line and angle material. During the learning process, observers consisting of three MGMPS members who had been deliberately asked for help in the data collection process in this research, carried out observations of the students for whom they were responsible.

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At this stage the researcher implemented research activities by applying a content differentiation learning approach based on students' interests and an inquiry learning model referring to the lesson plans that had been prepared.

Reflection (*Reflections*)

After carrying out actions and observations including the data collection process has been completed, data is obtained that must be processed immediately so that it can be decided what action will be taken next.

Implementation of Cycle II

After Cycle I is carried out and the results of the reflection are obtained, the results of the reflection are used as determinants in carrying out activities in Cycle II. At the implementation stage of activities in cycle II, the details of the activities carried out are as follows:

Revised planning (*Revised Plan*)

After getting the results from cycle I, the planning stage begins, namely planning what activities will be carried out to improve the learning problems. The main thing that is done in this planning stage is to equalize the perceptions between researchers, observers and model teachers first, so that later during implementation, researchers and subject teachers have the same understanding in implementing the discovery learning model with a process differentiation approach based on the level of participants' learning readiness. educate.

After aligning perceptions about the learning model and approach that will be applied, the researcher prepared several preparations as follows: (1) preparing a Learning Implementation Plan (RPP) for cycle II, cycle II is planned for 1 meeting with time2 40minutes, (2) compiling LKPD on triangle and quadrilateral material with 3 different levels of learning readiness, (3) compiling reflection sheets, (4) dividing study groups based on diagnostic tests of learning readiness, (5) preparing observation sheets for student activity, (6) determine the criteria for learning success. In this research, students are said to be successful if the average activity of students in learning has reached a minimum75.00.

Implementation and Observation (Action and Observation)

The implementation and observation stages are the core activities of this classroom action research, because the process includes the implementation of a process differentiation learning approach based on the level of students' learning readiness and a discovery learning model that has been prepared to increase the activity of students in class VII-G UPT SMP Negeri 3 Jember on triangles and quadrilaterals. During the learning process, observers consisting of three MGMPS members who had been deliberately asked for help in the data collection process in this research, carried out observations of the students for whom they were responsible. At this stage the researcher implemented research activities by applying a process differentiation learning approach based on the level of students' learning readiness and the discovery learning model referring to the RPP that had been prepared.

Reflection (*Reflections*)

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After carrying out actions and observations including the data collection process has been completed, data is obtained that must be processed immediately so that it can be decided what action will be taken next.

Data collection technique

Observation

Observations were made on students' activities when the differentiated learning process was implemented. Observation functions to complete quantitative data collection, which is carried out using observation sheets.

The observation sheet contains the observer's notes in the form of*check list*open with a Likert scale (Sugiyono, 2019) score1 − 4.To guide filling in the observation sheet, guidelines have been developed based on Nana Sudjana's (2010) indicators of student activity.

Table 1. Indicators of Student Activeness

NO	INDICATOR
1	Actively participate in carrying out their learning assignments
2	Engage in problem solving
3	Ask other students or the teacher if you don't understand the problem at hand
4	Try to find various information to solve the problem
5	Carrying out group discussions
6	Assess his abilities and the results obtained
7	Train yourself in solving problems
8	The opportunity to use or apply what he has obtained

Meanwhile, to determine the category of student activity in learning, researchers made references as in table 2.

Table 2. Predicates of Student Activeness

Activity Level	Category
85% < P ≤ 100%	Very High (ST)
75% < P ≤ 85%	Height (T)
65% < P ≤ 75%	Medium (S)
55% < P ≤ 65%	Low (R)
≤ 55%	Very Low (SR)

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Documentation

Documentation is notes and data that have been obtained.

Data analysis

The data analysis technique used was qualitative, obtained from observation sheets of student activity. The qualitative analysis technique used is Miles and Huberman's (1984) analysis model which is carried out in three components, namely data reduction, data presentation, and drawing conclusions. The data collected in this PTKK consists of the results of observations and documentation studies. This data is realized in the form of a numerical score, therefore analysis is carried out using a descriptive approach using percentages. The success indicators used refer to Nana Sudjana's (2009) which states that at least a percentage of 75.00% of students are actively involved, both physically, mentally and socially in the learning process as well as showing high enthusiasm for learning, great enthusiasm for learning, and a sense of self-confident. The percentage results are obtained from calculating the scores from the eight existing indicators and then dividing them by the maximum score that can be achieved, namely 32. In this context, the profit formula for calculating the percentage of student activity according to Djamarah (2008) is as follows:

$$= \frac{h}{} \quad 100\%$$

Criteria refer to the standards used to assess the success of an activity. In this PTK, success can be seen from the activeness of students. Evaluate the success of action research by comparing the results before the action with the results after the action from the pre-cycle, cycle I, cycle II, and so on, then stop when the target has been achieved. Comparisons are made to assess achievements after taking action. The success criteria in this PTKK can be declared achieved if the level of student activity in learning increases from the initial condition to 75.00%. If the results of the actions do not meet these criteria, then the next step is to carry out the next cycle.

RESULTS AND DISCUSSION

Results

Pre Cycle

Based on the results of observations of students' activeness in pre-cycle activities, there were still many students who were not active during learning. The data obtained in the pre-cycle activities are presented in table 3 below:

Table 3. Results of Pre-Cycle Activity Observation Data

NO	INDICATOR	PERCENTAGE	CATEGORY
1	Actively participate in carrying out their learning assignments	50.05%	SR
2	Engage in problem solving	55.7%	R
3	Ask other students or the teacher if you don't understand the problem at hand	49.6%	SR

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NO	INDICATOR	PERCENTAGE	CATEGORY
4	Try to find various information to solve the problem	71.06%	S
5	Carrying out group discussions	57.15%	R
6	Assess his abilities and the results obtained	53.43%	SR
7	Train yourself in solving problems	33.7%	SR
8	The opportunity to use or apply what he has obtained	41%	SR
Pre-Cycle average percentage		51.46%	SR

Cycle I

In the results of observations of student activity in cycle I activities, there has been an increase in student activity from pre-cycle by20.17%.The data obtained in cycle I activities are presented in table 4 below:

Table 4. Results of Cycle I Activity Observation Data

NO	INDICATOR	PERCENTAGE	CATEGORY
1	Participate active in carry out task learn it	66.5%	S
2	Engage in problem solving	72.42%	S
3	Ask other students or the teacher if you don't understand the problem at hand	79%	Q
4	Try to find various information to solve the problem	78.9%	Q
5	Carrying out group discussions	75.6%	Q
6	Assess his abilities and the results obtained	74.05%	S
7	Train yourself in solving problems	58.2%	R
8	The opportunity to use or apply what he has obtained	68.4%	S
Average percentage of Cycle I		71.63%	S

Cycle II

In the results of observations of student activity in cycle II activities, student activity increased by as much as from cycle I9.43%.The data obtained in cycle II activities are presented in table 5 below:

Table 5. Results of Cycle II Activity Observation Data

NO	INDICATOR	PERCENTAGE	CATEGORY
1	Participate active in carry out task learn it	75.58%	Q
2	Engage in problem solving	88.3%	ST
3	Ask other students or the teacher if you don't understand the problem at hand	83.8%	Q
4	Try to find various information to solve the problem	81%	Q
5	Carrying out group discussions	86.74%	ST
6	Assess his abilities and the results obtained	79.11%	Q
7	Train yourself in solving problems	75.7%	Q
8	The opportunity to use or apply what he has obtained	77.62%	Q
Average percentage of Cycle II		80.06%	Q

Discussion

This research was conducted to analyze the effect of implementing a learning differentiation approach based on students' learning interests and readiness. The findings of this research indicate that the application of the learning differentiation approach has a significant influence on students' activeness in learning mathematics.

Planning

In pre-cycle activities, based on observation results, student activity was still very low. This problem arosedue to the use of less varied learning models and less active involvement of students. The learning process causes a lack of student active learning in mathematics subjects, resulting in students tending to be passive in learning, lacking respect for teachers and friends, and lacking understanding of the material presented.

One effort to increase students' active learning in class is to make improvements in the learning process. Teachers as educators are required to facilitate the various characteristics of students so that students' active learning can increase. The learning differentiation approach is an approach that can facilitate students optimally. Not individual learning, but grouping students based on their interests and readiness to learn. This can increase student activity because students do not feel that they are too far apart from friends in one group, so that students in one group can actively discuss and complete their assignments. After identifying the problem, mapping is carried out at the planning stage based on students' interests and level of learning readiness and preparing learning instruments.

Implementation and Observation

In cycle I the teacher has given special action to students, namely differentiating content based on their learning interests, however, the results of active observations

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students have not yet reached 75.00% but have experienced a significant increase, namely 20.17%.

In cycle II, process differentiation was carried out based on the level of students' learning readiness. The data obtained showed a percentage change of 9.43% from cycle I so that the percentage of student activity achieved was 81.06% or an increase of 29.6% from pre-cycle activities.

Based on observations of student activity from cycle I and cycle II, the application of differentiated learning is influenced by internal and external factors. Internal factors come from students themselves, namely readiness to learn, interest in learning and motivation to be active in learning. External factors include the teacher's role in identifying student problems in cycle I and cycle II. Apart from that, the learning environment and facilities also influence students' activeness in learning.

Reflection

The results of the reflection show that there are still some students who are less active in learning cycle I, this was the reason why in cycle II the researchers changed the learning model from an inquiry learning model to discovery learning.

CONCLUSION

The application of differentiated learning in mathematics subjects in class VII-G UPT SMP Negeri 3 Jember can increase students' activeness in learning in each cycle.

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CONFLICT OF INTEREST

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