

## Student Problems In The Implementation Of The 2013 Curriculum With A Scientific Approach To Mathematics At MTs N 4 Cirebon

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### ABSTRACT

This study aimed to explore student problems in implementing the 2013 curriculum with a scientific approach. This study uses a qualitative approach. Based on the results of the discussion, it can be concluded that the factors behind the VIII C grade students of MTs N 4 Cirebon related to the problem of not being able to respond to learning objectives with a scientific approach are: including internal factors, including; (1) lack of readiness to learn for each student, (2) at the stage of asking students are still shy and confused to ask questions related to material that has not been understood, and (3) at the stage of seeking information students feel confused to complete the questions/tasks given. Problems with external factors faced by students, including; (1) the way the teacher teaches that is felt to be in a hurry when delivering the material, (2) the lack of use of learning media by the teacher, and (3) the limitations of school facilities and infrastructure that are less supportive.

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## 1. INTRODUCTION

Of the many educational resources, the curriculum is one element that contributes significantly to realizing the process of developing the potential quality of students. So, it is undeniable that a curriculum that is developed based on competence is needed as an instrument to direct students to become individuals: (1) Quality humans who are capable and proactive in responding to the challenges of an ever-changing era; and (2) educated human beings who believe and fear God Almighty, have a noble character, are healthy, knowledgeable, capable, creative, independent; and (3) Citizens who are democratic, responsible [1].

Implementing the curriculum is inseparable from the direction of the development of a society [2]–[4]. The curriculum development in Indonesia in the post-independence era continues to change according to the demands of the times and will continue to experience improvements in content, implementation, and evaluation. Changes and developments in the curriculum are considered imperatives that oblige each component to carry out a renewal to implement a national education goal. The Minister of Education at the time, Muhammad Nuh, said that some fundamental changes from the 2006 curriculum to the 2013 curriculum included structuring mindsets, deepening and expanding materials, and strengthening processes and burdens. However, the change elements include graduate competency standards, content standards, and process and assessment standards. The 2013 curriculum emphasizes the modern pedagogic dimension in learning using a scientific approach [5]–[8].

Talking about the curriculum, of course it is very closely related to the use of approaches in learning, from the perspective of the approach, there are three approaches put forward, namely: (1) Approaches related to materials (Subject matter-oriented) curriculum with this approach tends to emphasize the importance of achieving targets - target subject matter and tend to ignore changes and development of behavior as a whole towards positive behavior change, (2) Goal-oriented approach (Objective Oriented) this approach emphasizes the importance of goals in the implementation of education, this goal-oriented approach in practice often ignores process, so that the quality of the learning process is untouched, (3) a competency-based approach (Competencies based curriculum) this approach emphasizes mastery of learner competencies, in practice it is not justified to make a competitive leap before essential competencies are mastered by learners at a certain level, besides this approach ignores the process because the process is understood as part of the competencies to be achieved in learning [9].

The 2013 curriculum directs students to be required to have competencies, including attitudes, knowledge, and skills. Competence is more than just knowledge and skills. Competence includes the ability to meet complex needs by drawing on and mobilizing psychosocial resources (including skills and attitudes) in specific contexts. For example, communicating effectively is a competency that can build an individual's knowledge of languages, practical skills in information technology, and attitudes toward people when communicating [10].

The offer of various approaches and learning strategies that are expected to be able to implement the 2013 curriculum are of many kinds, including contextual teaching and learning (CTL) approach, constructivism approach, deductive approach, inductive approach, concept approach, process approach, open-ended approach, approach scientific, realistic approach, and others. The following types of learning strategies include Expository Learning Strategy, problem-based learning strategy, thinking skills learning strategy, cooperative learning strategy, and contextual learning strategy, affective learning strategy [2].

The approach has a narrow meaning as a starting point or point of view of an educator on the learning process, including methods, media, techniques, and learning strategies [11]–[16]. Undeniably, one of the successes in the learning process is the use of

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an approach that follows the criteria of students. One of them is the scientific approach, considered to have the meaning of a learning process that is considered very suitable for implementing the 2013 curriculum. However, it is not a compulsion for a teacher to use a scientific approach in every learning process.

Even so, this was also felt at the Madrasah Tsanawiyah Negeri level in one of the villages in Cirebon Regency, one of the mathematics teachers at the school said a little about the implementation of the 2013 curriculum using a scientific approach, especially in learning mathematics, the essence of his narrative: "curriculum 2013 is outstanding to be implemented on the characteristics and competencies of students at every school level but must be in a balanced dose and level, not only because to fulfill educational administrative obligations, the 2013 curriculum is in line with the times and is a challenge for every teacher to be able to implement in every learning process, teachers may apply this approach, only with good processes and combinations to be implemented to students during the learning process.

A learning process's success depends on a teacher's success in delivering the material that can be applied in everyday life and the future [17]–[19]. Not all teachers can apply the 2013 curriculum with a scientific approach, especially in learning mathematics at the junior high school level. The students also seem to have difficulty in accepting the implementation of the 2013 curriculum learning using a scientific approach; they indeed cannot understand the meaning of the scientific approach theoretically, but what they can feel is the difficulty in understanding the learning material using a scientific approach which requires them to think critically and discover a problem with what they find.

One of the other mathematics teachers at the school also said that the teachers were still comfortable using the lecture method. Usually, the students were just good listeners, were quiet, and sat quietly. This seems to have become a culture in our country; various curriculum renewals have been carried out. Teachers cannot force students to be able to carry out Curriculum 2013 learning with a scientific approach; little by little, the intake of a learning system with a scientific approach continues to be carried out. All of that returns to the readiness of educators and students during the learning process and is supported by supporting school facilities and infrastructure. In most teachers' minds, learning using a scientific approach must be done in groups or small groups. This can also be modified as a learning process that is fun, not stressful.

In this study, researchers found problems when a teacher had designed and implemented a 2013 curriculum-based learning process with a scientific approach to Mathematics, but the students could not respond according to the results of learning objectives using a scientific approach. Based on the background of the problems that have been described a little, the researcher intends to find out and then describe the problems and obstacles experienced by students when receiving mathematics learning with a scientific approach, as well as what efforts will be made by the teacher when addressing these problems. Researchers are interested in researching this problem because they consider the curriculum necessary in the implementation system for implementing national education goals.

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## **2. METHOD**

This study uses a descriptive qualitative research method. The setting of this research is a case study with a single class design, and the subjects in this study were class VIII C students and three mathematics teachers at MTs N 4 Cirebon. The data collection techniques used in this study were observation, interviews, questionnaires, and documentation.

This observation will focus on teacher observations during the learning process and student activities. Observations during the learning process were carried out to obtain data related to the mathematics learning process based on the 2013 curriculum using a scientific approach in the classroom. This data collection will be assisted with research instruments that have been provided. Using a scientific approach, observation of student activities was carried out to obtain field data related to student activities in the classroom during the learning process. This observational data collection will be assisted by research instruments that have been validated. The data sought focuses more on the difficulties experienced by students during the mathematics learning process using a scientific approach.

The second method used in this research is the interview. In this study, interview data were collected by interviewing teachers and students. Data collection by conducting teacher interviews aims to dig deeper into the data from the questionnaire that has been given. The form of data presented is in the form of teacher interview transcripts. Meanwhile, data collection by conducting student interviews aims to dig deeper into data from student questionnaires. In this student interview, 5 to 10 students will be selected to be interviewed at random about the problems faced by students so that they have not been able to respond to the objectives of learning mathematics using a scientific approach. The data obtained is in the form of student interview transcripts.

The second method used in this research is a questionnaire. Collecting data with this questionnaire will be given to teachers and students. Data collection with this teacher questionnaire aims to obtain personal data related to the efforts made by teachers with problems experienced by students during the mathematics learning process using a scientific approach [20]–[22]. Collecting data with student questionnaires aims to obtain data for each student related to the problems experienced by students so that they can respond to the objectives of learning mathematics using a scientific approach [23]–[25].

Furthermore, the last method used is documentation. It is a record of past events. Documents can be in writing, pictures, or monumental works of someone [26]–[28]. This method is used because documentation is used because the data source is stable, prosperous, and encouraging, functional as evidence for a test, not reactive, so it is not difficult to find with content review techniques. The data that has been collected will then be analyzed descriptively - qualitatively. The steps are taken in analyzing the data consist of reduction, data display, and conclusion drawing/verification.

## **3. RESULTS AND DISCUSSION**

Based on the results of observations during learning, recording the results of interviews with students and teachers, giving questionnaires to students and teachers, data

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reduction, and data triangulation, then there will be a discussion about the factors behind students so that they have not been able to accept learning objectives with a scientific approach, and efforts or the efforts that will be made by the teacher when solving the problem.

The ideal learning process is undoubtedly coveted by every educator, with the readiness to carry out a method [29]–[31]. The purpose of this readiness is so that students involved can follow the process and experience the learning process without experiencing difficulties. An educator has a role as a facilitator whose task is to assist students in carrying out the learning process, deal with students' internal problems professionally, bring the learning process professionally, to develop students so that the output produces an ideal personality (including skills, knowledge, and attitudes). However, the role of the teacher as a whole cannot be blamed because the problems in students are also so complex to handle. This is a benchmark for researchers to discuss further, the same as problems with students who have learning difficulties when following the learning process with a scientific approach brought by the teacher.

### **3.1. Causes of difficulties experienced by students**

After further analysis of the results of the research instrument, the researchers found the cause of the difficulties experienced by students. The following are some of the factors behind students who have not been able to respond to the objectives of learning mathematics with a scientific approach:

#### **1. Internal factors**

The internal factors referred to at this time include student interests and the difficulties that each individual feels when the learning process uses a scientific approach. Based on the research results analyzed through observation, questionnaires, and interviews with students. Internal factors faced by students when experiencing difficulties during the scientific learning process start from the observation in class. Some students were noisy and did not focus on learning. This proves that the first problem experienced by students is the lack of readiness to take part in learning, and is supported by the statement "I am happy when mathematics lessons are in the first hour" as many as 65.13% because, at that time, mathematics lessons were at the end of school learning hours. Thus, making students a little too lazy to take part in learning mathematics is scary. Based on the questionnaire, there was an average percentage of 86.84% who liked mathematics, supported by interviews with seven students, three of whom chose to like mathematics.

The second thing is related to the indicators of learning stages using a scientific approach. At the observing stage, students do not feel there are very confusing difficulties. Some say difficulties when giving practice questions to work on, even though teachers do it to assess aspects of student knowledge. At the questioning stage, students are still not able to explore their ability to ask questions due to shy reasons to ask; even though asking is one of the keys to success in learning, there is an average percentage of 46.05% agree with the statement "When there is the material that I do not understand, I choosing to ask friends," this was supported during observations and

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interviews, that on average, they felt embarrassed to ask questions related to the material being taught, for reasons of fear of being wrong and preferring to ask friends. At the stage of finding information, students are still confused about finding solutions to the questions/tasks given, and the article is that the teacher does not use the student handbook during learning, so the average percentage of students agrees with the statement "I am still confused when the teacher orders me to find the information in the student handbook."

Based on the results of interviews with teachers, one of the things that cause students not to be able to respond to learning objectives with a scientific approach is because they are too comfortable with the lecture method that the teacher teaches, thus making them not creative and innovative to find and observe the tasks given to be completed.

So, based on the research that has been done, the internal factors behind students finding it difficult to respond to learning objectives with a scientific approach are the lack of readiness to learn in each student at the questioning stage, students are still shy and confused to ask questions related to material that has not been understood, and at the stage of seeking information students feel confused to complete the questions/assignments given because the teacher does not use the student handbook during learning, students are too comfortable with the use of the lecture method carried out by the teacher.

## 2. External Factors

Based on the results of research conducted, indicators that lead to external factors, the reasons students have not been able to respond to learning objectives with a scientific approach are related to the way teachers teach and students' interest in the use of learning methods and media.

From the results of interviews conducted and the questionnaire given, students agreed with the statement "Teachers are always in a hurry when delivering learning material" as much as 66.44% because the average percentage is above 50%; this proves that there are still many students who find it difficult the way the teacher teaches.

In interviews conducted with teachers and questionnaires that have been given, teachers are too comfortable with how to teach with the lecture method; even though the level of student interest in the use of learning methods and media are all very high and enthusiastic, many of them agree with the statement "I am happy when the learning process takes place. Mathematics learning is served using media in the form of pictures/videos" with a score of 86.18%, as well as the statement "Student handbooks make it easier for me to solve the problems or questions given" as much as 75.65%.

In the results of interviews with students, some expectations of them want learning that is not as usual (learning in the open), and when learning in the classroom, it should be with supporting facilities and infrastructure. Most of them feel uncomfortable with the unsupportive classroom atmosphere, such as: stifling heat in the classroom, limited use of learning media, and uncomfortable air circulation.

Based on the results of research conducted, external factors behind students who have not been able to respond to learning objectives with a scientific approach are related to the way teachers teach who are felt to be in a hurry when delivering material, the lack

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of use of learning media by teachers, and the limitations of school facilities and infrastructure.

### **3.2. The factors that support and inhibit the occurrence of learning problems using a scientific approach**

Observational data on the learning process, questionnaires, and interviews have been analyzed based on research conducted with the three teachers. First, the researchers wrote down the supporting and inhibiting factors for the occurrence of learning problems using a scientific approach, according to the three mathematics teachers at the school.

The inhibiting factors for the learning process with a scientific approach include: (1) the ability of students who are not the same (heterogeneous), the teacher does not want to force students to carry out learning with a scientific approach, (2) the use of techniques, media, and less supportive methods, (3) school facilities and infrastructure that are less supportive.

Factors supporting the occurrence of the mathematics learning process using a scientific approach include (1) personal readiness of teachers (covering: techniques, media, and methods to be used), (2) school facilities and infrastructure, and (3) student readiness to take part in learning science.

Based on our knowledge of the problems teachers face, students certainly do not want to know and are not allowed to know because it is a matter of a teacher's professionalism. Likewise, with the problems faced by students, teachers are also required to know, although not as a whole, students (the teacher's limitations). In this case, it is related to the problem of students who have not been able to respond to the objectives of learning mathematics by using a scientific approach. The following are some of the efforts/efforts made by the teacher to handle and help solve these problems, including: (1) will change learning techniques, (2) making close contact with individuals, asking questions related to the problems encountered, (3) will use learning techniques through tutors /peers, (4) changing the learning system to be fun, and (5) providing motivation and guided direction.

## **4. CONCLUSION**

Based on the results of the discussion, it can be concluded that the factors behind the VIII C grade students of MTs N 4 Cirebon related to the problem of not being able to respond to learning objectives with a scientific approach are: including internal factors, including; (1) lack of readiness to learn for each student, (2) at the stage of asking students are still shy and confused to ask questions related to material that has not been understood, and (3) at the stage of seeking information students feel confused to complete the questions/tasks given. Problems with external factors faced by students, including; (1) the way the teacher teaches that is felt to be in a hurry when delivering the material, (2) the lack of use of learning media by the teacher, and (3) the limitations of school facilities and infrastructure that are less supportive.

When there is a learning problem, of course, the teacher is one of the people who are responsible for handling it. The following are some of the efforts/efforts made by

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teachers to handle and help solve these problems, including: (1) will change learning techniques, (2) make close contact with individuals, ask questions related to the problems encountered, (3) will use learning techniques through tutors/peers, (4) changing the learning system to be fun, and (5) providing motivation and guided direction.

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