Implementation of Mathematics Learning For Mentally Retarded Children at 6th Grade of Pelita Hati Special School Pekanbaru

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Abstract: This research aimed to describe the implementation of learning math for students mental retardation in 6th grade of Pelita Hati special school Pekanbaru. This research includes (1) organizing subject matter of mathematics, (2) instructional strategies of mathematics, (3) obstacles experienced during implementation of the learning, (4) student response during the execution of the instruction. This research uses qualitative research methods, descriptive of the types of case studies. Subjects in this research are two of the student's mental retardation residing in grade 6. Data collection using observation, field notes, interviews and documents. Technique of data analysis consists of reducing data, presenting data, and concluded. An examination of the validity of the data using triangulation techniques and sources. Results of the study concluded that the implementation of learning math for students mental retardation consists of: (1) most of the aspects of math learning material to organizing children's mental retardation associated with programs that are individually have not done, only a few aspects that are to be implemented, namely mental retardation students participated in the implementation of learning and the given material useful for everyday life; (2) all aspects in mathematics learning strategies on child mental retardation which includes the granting of reinforcement, punishment, and the granting of material classified according child development have yet to be implemented; (3) the barriers experienced by teachers for learning such as: the large number of children in need of special that is in a class with specificity, so that the material provided is still common (4) mental retardation student response during positive learning.

Keywords: learning mathematics, student mental retardation

1. Introduction

Education is the right of every citizen, regardless of social and economic status. Likewise, children with special needs, are entitled to get education like other normal children, so that they can live well in society, can live independently, and become the successor to the nation and state as expected. One of the classifications of children with special needs is mentally retarded children. Mental retardation is a certain condition with a decrease in intelligence and adaptive function (Delphie, Bondan 2012). According to Mumpuniarti (2003) Mental retardation is a child who has mental barriers. Academic ability of children with mental retardation is below average so that its development is late compared to normal children. Therefore we need special attention to mentally retarded children from teachers or mentors so that the development of mentally retarded children can be achieved according to their abilities. The learning process applied to mentally retarded children cannot be compared to normal children in general. In determining effective strategies, teachers must pay attention to the objectives of implementing learning, the characteristics of mentally retarded children, and the availability of facilities and infrastructure. The strategies used in learning in mentally retarded children are individualized, cooperative, and behavioral modification strategies.

One of school that organizes learning for mentally retarded children is Pelita Hati Special School Pekanbaru. In this study, researchers focused on the mathematics learning process carried out by the Pelita Hati Special School Pekanbaru teacher for mild retarded students. Mild retardation are those who belong to groups whose intelligence and social adaptation are inhibited, but they have the ability to develop in academic learning, social adjustment, and work ability (Putri, 2012). Mild retarded children can still learn to read, write and simple counting (Sunaryo., 2009). Mild mental retardation children have physical growth characteristics such as normal children but their physical health and motor maturity are weaker compared to normal children of the same age (peers); many can speak fluently but lack vocabulary, have difficulty thinking abstractly but they are able to learn things that are academic in a limited way. Mental limitations of mental retardation students also result in cognitive abilities (Astati et al., 2003)

Mathematics is subject matter that requires high concentration, requires logic, and the ability to think abstractly. The low ability of intelligence and the inability in abstract thinking of retarded students results in a slow learning process. Afnita Usti (2013) stated that mathematical knowledge is important for lives of mentally retarded children so they can integrate to adjust in environment. Based on the results of observations made by researchers in February 2019 on mental retardation students of Pelita Hati Special School Pekanbaru, researchers found several problems related to mathematics learning for mentally retarded children at the school. These problems include the difficulty of teachers to provide special assistance to every child with special needs in solving mathematical problems. Almost every student needs guidance. The learning process is carried out by the teacher with the lecture method in the order of explaining, giving examples, practice exercises, and homework. This causes retarded students to lag behind in terms of understanding and mastery of the material. Students also have difficulty in understanding the material and are easily forgotten about the learning material that has been delivered. The learning process for mentally disabled students for elementary, middle and high school students is combined in 1 class. The number of mentally retarded male students consists of 7 people, consisting of 4 elementary students, 2 junior high school students (grades VII and VIII) and one grade X student.

In Learning, the teacher provides the same material for every retarded student. When researchers observe the material numbers taught by the teacher, The difference is only in the exercises done by students in the classroom and homework assignments.

During the accreditation of Mathematics Education study program of the Riau University in 2018, one of the alumni who taught at an extraordinary high school in Pekanbaru shared his experience with researchers that the knowledge gained during lectures with teaching experience at extraordinary high school after completing lectures is very different, the language of mathematics which used to be full of abstract symbols is not used here, what is needed is how to convey mathematics concretely and easily accepted by students. To convey mathematics concretely, we must choose material that can be actualized with concrete objects. We also learn sign language and must be patient, ma'am. The same experience was also expressed by one of the teachers participating in the PPG Pre-Position 1st Wave at the Mathematics Education Study Program FKIP UNRI. This PPG teacher also has experience teaching in extraordinary elementary schools in West Java, teaching deaf and visually impaired students. This PPG teacher stated that in order to teach mathematics about numbers, he had to learn the sign language of numerical symbols using fingers. Similarly, to introduce numbers and letters to blind students, he also learned about Braille letters first. To introduce space construction to students with visual impairments we have to differentiate between the ribs and the sides by making the elements in the building with different shapes, surfaces, namely smooth and rough surfaces.

Based on observations made by researchers at Pelita Hati Pekanbaru special schol and some information about the teaching experience of the alumni of students and PPG participants in the

Mathematics Education Study Program FKIP UNRI, researchers interested in studying more about how the implementation of mathematics learning for extraordinary elementary school and what obstacles are found in the learning process as well as efforts to overcome these obstacles. As far as researchers know, there has never been a lecturer of mathematics education FKIP Riau University who studied the learning process that teachers do for mental retardation students.

The problems of this study are: (1) How does the organization of mathematics subject material for sixth grade mentally retarded students of Pelita Hati Special School Pekanbaru in the implementation of learning?, (2). How is the implementation of mathematics learning strategies for sixth grade mentally retarded students at Pelita Hati Special School Pekanbaru?, (3). How are the obstacles experienced by teachers in implementing mathematics learning for mentally retarded students of Pelita Hati Special School Pekanbaru?, (4). How do students respond to mathematics learning that has been carried out by teachers at Pelita Hati Special School Pekanbaru?. This study aims to determine and describe the mathematics learning implemented by teachers for sixth grade mentally retarded students in Pelita Hati Special School Pekanbaru.

2. Methodology

2.1 Place and Time of Research

This research was conducted at Pelita Hati Special School Pekanbaru. The study was conducted in odd semester of the 2019/2020 school year.

2.2 Types of Research

The type of research used in this research is descriptive qualitative. According to Ronny Kountour (2004) descriptive research is a type of research that provides a description or description of a situation as clear as possible without any treatment of the object under study. More specifically, this research is included in case studies. Case research according to Trianto (2010) basically is to intensively study an individual or group that is seen as having a particular case. Researchers study it in depth and in a long period of time.

2.3 Research Subject

Subjects in this study are two sixth grade students of mental retardation in Pelita Hati Special School Pekanbaru (initial MHA and EAS) and classroom teachers.

2.4 Research Instrument

According to Sugiyono (2009) in qualitative research, the instrument is the researcher himself who serves to determine the focus of research, select informants as data sources, conduct data collection, assess data quality, analyze data, interpret data and make conclusions on his findings. To facilitate the research process, researchers create research instruments as follows: Observation Guidelines, Interview Guidelines, Interview guidelines for mentally disabled students. The researcher makes observational guidelines to facilitate the conduct of research and to observe mentally retarded students and classroom teachers.

Table 1. Lattice Guideline Observation of Mental Retardation Mathematics Learning

Number	The Observed Aspect	Sub Aspects Observed
1.	Components of implementing learning for mentally retarded	Organizing the material given to mentally retarded student
2.	Learning strategies for mentally retarded student.	Specific learning strategies for mentally retarded student.
3.	Teacher barriers in teaching mentally retarded student.	Obstacle factors and supporting factors
4.	Student response	Student responses during the implementation of mathematics learning

Interview guidelines are arranged to get the information needed from mentally retarded students and classroom teachers. Interviews were conducted to obtain more in-depth information about the implementation of mathematics learning for mentally retared children in Pelita Hati Pekanbaru. The interview guide grid for classroom teachers can be seen in the following Table 2.

Table 2. Laticce Guidline of Interview for Classroom Teachers

Number	Indicator
1.	Organizing material for mentally retarded students
2.	Implementation of specific strategies in the learning process of mathematics for mentally retarded student
3.	Obstacles experienced by teachers in implementing mathematics learning for mentally retarded student
4.	Student responses during the learning process

Interviews were also conducted on mentally retarded student to find out how the students' response to the implementation of mathematics learning for mentally retarded studen at Pelita Hati Special School Pekanbaru.

Table 3. Laticce Guidline of Interview for Mentally Retarded Student

Number	Indicator
1.	Student responses to the implementation of mathematics learning for mentally retarded student

2.5 Data Collection Techniques

Data collection techniques are: Observation, Interview, and Documentation. In this study, researchers used participant observation. Sugiyono (2009) states that in participant observation, researchers are involved in the daily activities of people who are being observed or used as sources of research.

Interviews are a way to get information by asking questions directly to respondents. The purpose of the interviews conducted in this study is to obtain information related to the implementation of mathematics learning for mentally retarded student, namely: material taught for mentally retarded student, the application of the principles of learning, barriers experienced by teachers, and the responses of students in learning.

The documentation done by researchers in this study is by attaching photos of learning activities, the work of mentally retarded students during the research process. Documentation is done with the aim of supporting the credibility of research results obtained from observations and interviews.

2.6 Data Analysis Techniques

Analysis of the data used in this qualitative study is the analysis of Miles and Huberman's model data which includes three activities, namely: data reduction, data display, and verification**.** Data reduction is select the data that is necessary and discard unnecessary data. Presentation of data is done in the form of a brief description of the results of research on mathematics learning process for mentally retarded students. Presentation of data is done to facilitate researchers to understand what happened and to plan further work. Conclusion is expected to be a description or picture of an object that has been investigated. To test the validity of the data in qualitative research according to Sugiyono (2009) includes the test of credibility (internal validity), transferability (external validity), dependability (reliability), and confirmability (objectivity). In this study, using a triangulation data credibility test. In this study, researchers used source triangulation and triangulation technique.

3. Results and Discussion

3.1 Organizing mathematics subject matter in the implementation of learning

There are nine aspects of organizing mathematics subject matter for mental retardation in the implementation of learning.

3.1.1 Providing material from easy to difficult

The implementation of learning for all mentally retarded male students at SLB Pelita Hati Pekanbaru is carried out in one class. In one class there are 7 students from several levels consisting of 1 student from second grade of elementary school, 2 student from third grade of elementary school, 2 student from sixth, 1 student from eighth grade , 1 student from tenth grade and 1 student from eleventh grade. During the mathematics learning activities in sixth grade classroomat Pelita Hati Special School Pekanbaru, the material provided by the teacher was general and classically given, the material provided was not arranged individually. Each meeting, the teacher gives the same material, but at the time the questioning is adjusted based on the grade level of the student. According to Abdurrachman (Maria J Wantah, 2007) The main characteristic of mentally retarded children is weakness in thinking or reasoning. By looking at the learning characteristics of mentally retarded student, the material given should be individualized and based on students' initial abilities.

3.1.2 Participate in the learning process

During the research activities the subjects of the MHA and EAS always participated in learning. MHA subjects followed the learning in an orderly and active during 1 hour of learning. EAS students are unable to stay in the learning process of mathematics for 1 hour. EAS students often interfere with their peers in learning. During Learning activities, the teacher provides the same learning material to all students in the class even though in one class there are several students from different grade levels.

3.1.3 Giving positive reinforcement

According to Mumpuniarti (2007: 140) positive reinforcement must be immediately given in the mathematics learning approach for mentally retarded student to follow the right responses. This

applies as an extrinsic amplifier, for example: gifts, praise, and rewards. During the research activities, teachers give positive reinforcement for students who can solve problems. Positive reinforcement given by the teacher in the form of praise, thumbs up, and high five.

3.1.4 Individual programs

The teacher does not provide individualized programs for mentally retarded students. Each student receives the same (general) learning material and is given classically. By looking at the learning characteristics of mentally retarded children, the material given should be individualized and based on the student's initial ability. This is in accordance with the opinion of Mumpuniarti (2007) that in the mathematics learning approach for mild retarded students the program must provide individualized learning so that students can follow according to their abilities.

3.1.5 Implementation of evaluation

According to Mumpuniarti (2007) that in the approach to learning mathematics for mentally retarded children evaluation needs to be done to determine how students learn on each teaching material to be more effective. Learning will be more effective for mentally retarded children if the material provided is arranged based on the results of the assessment and refers to the students' initial abilities. During the implementation of mathematics learning for mentally retarded children in sixth grade Pelita Hati Special School Pekanbaru, the evaluation was only an assignment to do the questions and final semester exams.

3.1.6 The material presented support the achievement of predetermined objectives

From the results of interviews with class teachers, it is known that the program delivered does not support the achievement of pre-determined goals, because there is no specific program for mentally retarded students.

3.1.7. The material adapted to the students ability

The material presented for mentally retarded students is general because there are no special programs that are individualized for mentally retarded students. The material presented is not adapted to the students ability and the material presented is general.

3.1.8. The material presented is useful for daily life

Based on observations during six meetings, the researchers did not see the teacher gives examples of questions that relate to daily life or story problem. Problem is given its calculations. However, when students have difficulty in completing the calculation, the student is guided by the examples of daily life. For example: 39 -21 = ... The teacher points 9 students fingers, then the teacher says there are 9 candy you eat one while bending one student's fingers, so how much do you have left? Then students will count their fingers. Similarly, the number 3 minus 2. Until students write the results.

3.1.9 The material is designed from easy to difficult, from the concrete to the abstract

Based on interviews with classroom teachers, it is known that the material presented for mentally retarded students is not designed from the easy to the hard, from the concrete to the abstract because there are no special programs that are individualized for mentally retarded students.

3.2 Mathematical learning strategies for mentally retarded children

3.2.1 Giving reinforcement (both positive and negative reinforcement)

According to Muljono (in Mumpuniarti, 2007) strategies that can be developed in mentally retarded children's learning include giving reinforcement, which consists of two kinds, namely positive reinforcements and negative reinforcements. Positive reinforcements are events that cause an increase in expected behavior, while negative reinforcements are the loss of unpleasant events after the expected things appear.

During the research activities, the teacher gives positive reinforcement to students who can solve the problem well in the form of praise, thumbs up and high five, and gives a warning to students who interfere in the learning process.

3.2.2 Giving punishment

According to Muljono (in Mumpuniarti, 2007) strategies that can be developed in mentally retarded children's learning include giving punishment. But during the research activities, there was no visible punishment by subject teachers on both subjects. What is seen is only giving a warning that applies to all students in the class if there are students who interfere with learning activities in class such as shouting, the teacher only reprimands with the words "shhh, silence do not disturb your friends".

3.2.3. Classification / grouping (according to the child's cognitive development, children's mental age, concrete stages to semi-concrete then abstract)

According to Muljono (in Mumpuniarti, 2007) material equalization must also consider the needs of children by organizing material by classification / grouping, according to the child's cognitive development, children's mental age, concrete stages to semi-concrete and then abstract. But during the mathematics learning activities for mentally retarded children sixth grade Pelita Hati Special School Pekanbaru, the material given by the teacher was general and classically given. The material provided is not arranged individually.

3.3 Barriers and supporting factors for the implementation of mathematics learning in mentally retarded children

The obstacles that were found during mathematics learning activities in mentally retarded children in 6th grade Pelita Hati Special School Pekanbaru are mentally retarded students in one class had varying specificities and different grade levels, and the material provided is general because of the lack of competent teachers. The lack of mentoring time which is only twice a week causes less than optimal guidance provided by class teachers. Because, the guidance provided by the companion teacher is not only in the academic field, but other aspects such as social behavior. The supporting factors are the existence of children with special needs in the class can be well received by retarded students from different classes. There is no different treatment from classroom teachers on retarded students, even though the grade levels are different.

3.4. Student responses during the implementation of learning

Student responses during the implementation of learning showed that the subject of the MHA could follow the mathematics learning given for 1 hour, while the EAS subject could not concentrate in the learning process. EAS subjects were only able to concentrate on learning for 30 minutes. After 30 minutes, EAS students like to disturb their friends in studying, climbing windows, walking in the

classroom. MHA subjects can do the assignments well. If he has difficulty in solving problems the MHA student wants to ask the teacher about the difficulties he faces. EAS students often work on problems that do not match the one given by the teacher.

4. Conclusion

Based on the results of research and discussion, it can be concluded that: the implementation of mathematics learning for mentally retarded students in 6th grade Pelita Hati Special School Pekanbaru can be seen from several aspects, namely: (1) most of the aspects of organizing mathematics learning materials for mentally retarded students related to individual programs are not yet available, only a few aspects have been implemented, which are mentally disabled students participating in the implementation of learning and the material provided is useful for daily life; (2) all aspects of mathematical learning strategies for mentally retarded children which include the provision of reinforcement, punishment, have been implemented; (3) the obstacles experienced by teachers during learning include: there are many children with special needs in one class with varying specificities, so that the material provided is still general; (4) mentally retardation students' responses in learning are positive.

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