

Role Play Method for Numeracy Ability of Students with Intellectual Disability

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Abstract: Intellectual disability children who have the below intelligence average hamper their academic intelligence such as numeracy learning especially adding and subtracting. Children with intellectual disability in SLB experience difficulty to do adding and subtracting operation. The role play method require the students to be active in learning. The purpose of this study is to describe the ability of addition and subtraction of the intellectual disability students before and after using the role play method. The research is Pre-Experimental Design with One Group Pre-test Post-test Form. The instruments are written and oral test for pre-test and post-test. The analysis technique used is Wilcoxon Test with manual calculation.

Keywords: Intellectual Disability, Role Play Method, Numeracy Ability

INTRODUCTION

Every human being experiences the process of developing skills, reasoning power and morality which is called education. An education can be said to be successful if humans who have learned to get meaning in every learning. Democratic education, which means there is no discrimination for children with special needs.

Children with special needs who need educational services have the uniqueness that distinguishes them from the average children. The uniqueness of those who can make it difficult for teachers in the implementation of learning because between a child and another there is no equal in educational services. So, the provision of educational services must be in accordance with the child's character.

One of the various children with disabilities is intellectual disability, Somantri (2012) intellectual disability is a term used to refer to children who have intellectual abilities below average. In the literature of foreign languages used the terms mental retardation, mental deficiency, mental defective, and others. Meanwhile, according to Apriyanto (2012) disability is a condition in which intelligence development has many obstacles, so they are difficult to reach the stages of development optimally. As a result of intellectual disabilities, the children more often have difficulties in academic learning such as mathematics learning, for example in learning to calculate the sum and deduction of the value of rupiah currency.

Learning mathematics is very important for daily life such as in school, at home and in the community. The child can understand if learning material has to be modified more modestly and to adjust the child's needs, besides that the teacher must choose an appropriate learning method to teach mathematics, so that, the child is easier to understand the material that has been delivered.

A role play can be interpreted as one of the effective learning methods in efforts to solve problems related to human relationships (interpersonal relationships). Playing this role is very useful for daily life (for example: buying and selling, communicating with others, and so on.

METHOD

This study uses a Pre Experimental Design with One Group Pretest-Posttest. The design of this study uses only one group, it does not require a control group. This study aims to examine whether the presence or absence of differences in the method of role play on the numeracy ability of intellectual disability students in the grade VIII at SLB Aisiyah, Kab. Sidoarjo.

The subjects in this study were all grade VIII students of SMPLB Aisiyah Krian which consisted of seven students including one woman and six men.

The research instrument used in the form of oral and written tests. before the test, the validation of the instrument was used through the validation of material experts.

Data collection was carried out for one month at SLB Aisiyah Krian. The data is the result of students' learning abilities measured through 3 stages: the pre-test, the treatment and the post-test stage. (a) A pre-test is held 1 time to find out the level of intellectual disability knowledge about addition and reduction of the nominal value of rupiah currency in the classroom in the first week before being treated with the role play method. The pre-test data used oral and written questions consisting of 18 essay questions, (b) Treatment by providing learning using the role play method which was conducted during 3 meetings in the second week. The treatment data was observation sheets in the form of a role play skill questionnaire,

Table 1. Pre-test results for numeracy before using the role playing method

No.	Name	Value
1.	AB	61
2.	DA	72
3.	FN	72
4.	MD	56
5.	MR	56
6.	RD	56
7.	RS	67
Sum		440

Table 2 Results of Post-Test Ability to Calculate Addition and Reduction in Rupiah currency after Performing Treatment

No.	Name	Value
1.	AB	89
2.	DA	100
3.	FN	94
4.	MD	78
5.	MR	89
6.	RD	83
7.	RS	89
Sum		622
Average		88,9

Table 3 Results Comparison of Pre-test and Post-test Values

No.	Name	Value	
		<i>Pre-test</i>	<i>Post-test</i>
1.	AB	61	89
2.	DA	72	100
3.	FN	72	94
4.	MD	56	78
5.	MR	56	89
6.	RD	56	83
7.	RS	67	89
Sum		440	622
Average		62,9	88,9

(c) Post-test conducted 1 meeting in the third week of the study. The students were tested after treatment using the role playe method about counting the addition and reduction of the nominal value of the rupiah in their daily lives. Post-test data were using oral and written questions consisting of 18 essay questions.

Data analysis is an activity after the data from all respondents or all other data sources. The data that has been collected is used to answer the problem formulation. The data obtained is non parametric

collected in quantitative form can be trusted and correct. Hypothesis testing in data analysis was using the Wilcoxon Test. The Signed Test value $\alpha=0.05$.

FINDING AND DISCUSSION

Findings

At the time of the pre-test, the students were given little explanation about the various operations of the addition and subtraction calculations. The pre-test students still do not understand about the addition of coins and paper currencies, plus the reduction in the value of paper and metal coins. The students' pre-test results of addition and subtraction arranged downward is still not quite right. The pre-test data that has been done before getting treatment show in table 1.

Based on table 1, it can be known the pre-test results of the students' the beginning ability to calculate the addition and reduction of the value of paper and metal currencies before treatment of a role play method. The highest value obtained in grade VIII is 72 and the lowest is 56.

After taking care of the role play method on Thursday, April 6-8, 2017, the next step was to provide a post-test in the form of giving a written test instrument to students. When giving treatments, the students become active to participate in learning and feel very happy. Some students match the money picture correctly, tell stories about the dialogue to be played, and are also busy calculating the money they want to pay when playing roles.

The questions given at the post-test stage are the same as at the pre-test in order to make comparison between pre-test and post-test score, and because they have different levels of difficulty.

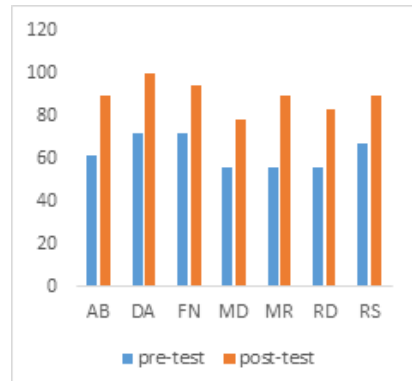
Post-test is given when students have received treatment in learning to count the value of paper and metal fractions. At the time of the post-test, the students actually do the questions given by researchers without assistance, no students are allowed to ask questions about the questions at the time of the post-test. They only answer according to the abilities and memories of each student. If they have difficulty adding or subtracting they must remain confident in their abilities. The following are data on the results of students' post-test questions in calculating ability after treatment.

Based on table 2, it can be seen the post-test learning outcomes of intellectual disability students of grade VIII of Aisyah SMPLB in calculating the addition and reduction of the value of paper and metal currency ruptures has increased the value of the results, because the child has treated the method of learning the role play.

Table 4. Wilcoxon test

No.	Value		(Y-X)	Rank (Y-X)	Signal	
	Pre-Test (X)	Post-Test (Y)			Positive	Negative
1.	61	89	28	5,5	+5,5	0
2.	72	100	28	5,5	+5,5	0
3.	72	94	22	2	+2	0
4.	56	78	22	2	+2	0
5.	56	89	33	7	+7	0
6.	56	83	27	4	+4	0
7.	67	89	22	2	+2	0
Sum					28	0

Figure 1. Recapitulation of Pre-test and Post-test Results for Grade VIII SLB Aisyiyah Krian



Based on Figure 2, the results of the post-test can be seen the ability to calculate the addition and reduction of the value of the rupiah is already above the average post-test value of students as a whole.

The recapitulation of the pre-test and post-test scores is carried out to know whether there is an increase or not in learning outcomes after treatment in table 3.

Based on the data from the table 3, data from 7 students of grade VIII Aisyiyah High School has increased, so that, there are differences in the value of the students' learning outcomes. The difference in value obtained can be presented in tabular form by comparing the red and blue bars, while the bar in figure 1, can be presented. From the explanation of the recapitulation data of the pre-test and post-test values, it can be concluded that the average pre-test are lower than the post-test. The difference in mean values can be made a reference to differences in the ability to calculate the addition and reduction of currency rapture values before and after treatment.

Based on the Wilcoxon test as in table 4, the value of learning outcomes shows an average increase, which is the average pre-test score of 62.9 and the average post-test of 88.9. All students did not experience a decrease

in grades, so that, the pre-test and post-test scores did not have a negative difference (-), but all students got positive signs (+). Then the positive and negative ranks are added together, then the smallest sum results are made into T_{count} . Based on the calculation, the value of $T_{count}=0$ is obtained, which is the lowest absolute value. The critical value for the Wilcoxon test $\alpha=0.05$ and $n=7$ from the Wilcoxon test list obtained $T_{table} = 4$.

DISCUSSION

The initial condition before being given treatment is that students are not able to add and subtract the value of fraction currency, so that, at the time of the pretest it can be said to be very low because the acquisition value is below the KKM (Minimum Criteria of Achievement).

According to Pratiwi (2015), the cause of the low mastery of calculating the addition and subtraction numbers allegedly because the teacher is not right in the selection of ways and methods of learning students. Lack of teacher creativity in modifying learning have an impact on children's understanding. Meanwhile, according to Fatimah (2009), the most useful knowledge in human life is mathematics. Mathematics basically teaches logic thinking based on reason, but keep in mind that mathematics has a general nature that is abstract or not real because it consists of symbols. Intellectual disability children who cannot read symbols cause a low understanding of the addition and reduction of the rupiah value.

In this study, there are still many students who are still unable to mention the value of the rupiah fraction that has been designated by researchers to be mentioned by students, besides that students still do not understand how to add up and reduce the value of currency denominations in order to get the correct result. When the students want to add and subtract at least they should be able to say the value of the rupiah currency correctly. The seven students who were the subject of this study were not only difficult to mention but also difficulties in adding and reducing the value of the currency. According to Hastuti (2015), difficulties in learning mathematics are usually experienced by children related to difficulties in understanding the relationship between facts, concepts and principles. We know that the intellectual disability child also has difficulty in turning that fact into a concept, the child understands the Rp. 500, but it becomes difficult when the child writes the Rp.500 figure. Researchers use learning classically because in addition to the seven students occupying the same level also has almost the same level of intelligence.

Based on an explanation of the students' initial conditions prior to treatment, what causes students to be less able to add up and reduce is the lack of modification of the learning method that is done during

learning. Therefore, when given a pretest to determine the students' initial abilities before treatment, the average grade obtained was 62.9 far from KKM (minimum criteria of achievement) of the seven mild intellectual disability students in grade VIII SLB Aisiyah. When conducting a pretest, the students do not understand how to add and subtract correctly, they also do not really know the value of the rupiah currency.

Conditions after treatment, the ability of students with intellectual disability in the grade VIII SLB Aisiyah in adding and reducing the value of currency fractions has increased. According to Suarni (2015), Knowledge is not something that has become ready, but a process that must be practiced, thought and constructed by students. It cannot be transferred for those who only accept it passively. Like the opinion of Gunadi (2011), debil can play with other children. Based on an increase in pre-test and post-test scores, the student scores can increase due to role playe treatment. In the learning process, the students are more active in learning because of learning according to direct experience, so that, they can remember the learning material more .

Huda (2015) stated that the success of learning is not only influenced by the teachers' activities but also the students' activities in learning activity. Learning will succeed if students are able to be active in learning. The learning method used affects the activeness of students in learning. This can be proven by looking at the results of the post-test scores of children who have an increase in the score results.

The ability to learn and remember debil as a child with an ability to lack abstract thinking requires concrete things. Debil can not connect the concept with the real world. The selection of learning methods to carry out learning must also be in accordance with debil, so researchers use the role playe learning method to attract intellectual disability children in a learning state by applying it to the real world.

Based on the above explanation, it can be concluded that the results of learning reduction and addition can be influenced by direct learning using the role playe method, with evidence of the results of the post-test scores of 7 students with an average of 88.9. Compared to the value of the pre-test, the post-test value has increased.

The obstacle that is possessed by intellectual disability which is very visible is the IQ below the average for that intellectual disability students maximize their learning abilities by learning to use direct experience because they cannot hone their abilities with abstract abilities. The suitable method to facilitate them in learning, besides they can learn based on what they feel they can also remember something that happened in their learning is the role playing method.

According to Pratiwi (2015), mathematics learning requires attention from students, so that, mathematics material is easily understood. Meanwhile intellectual disability children in general have attention that is easily distracted, so that, intellectual disability children find it difficult to concentrate fully on learning material.

The students who do the role play method are not easily bored and will be able to concentrate fully on the role to be played because of the conditions that are being studied they can learn with classmates and play around. The roles that will be played with each other are different, so they will be challenged to do their own role as well as possible. In this method, the students are required to complete the dialogue that has been given by researchers. In addition to memorizing the dialogue they must also learn to calculate the value of the rupiah denominations they have. In this case, the students get more direct experience to spend the money they already have. Sulthoni (2015) explains that mathematics has a very important role in everyday life especially in intellectual development, the development of social interaction, and in the life of buying and selling in the family and community.

The role play method affects the value of learning outcomes for students with intellectual disabilities of grade VIII SLB Aisiyah Krian. The results of the pre-test and post-test data analysis shows the differences in learning outcomes towards the use of the playing role method on the ability to count the addition and subtraction of intellectual disability students in grade VIII. According to Fauzy (2015), the better the learning process and the activeness of students in participating in the learning process, the better learning outcomes

CONCLUSIONS

Ability to count reduction and addition of 7 mild intellectual disability students of class VIII SLB Aisiyah Krian before treatment received 62.9 an average pre-test score. Before treatment, students have not been able to mention, add up and reduce the value of the rupiah denomination. The ability to count addition and subtraction of 7 mild intellectual disability students of class VIII SLB Aisiyah Krian after treatment was performed 3 times by using the role play method subject experiencing an increase in the value of the results. This can be seen through the average post-test conducted which was 88.9. From the results obtained, there is an influence of the role playing method towards the ability to count for mild intellectual disability students. It is proved that there is an influence of the role play method on the ability to count mild intellectual disability in the grade VIII SLB Aisiyah Krian.

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