



The Effectiveness of the Application of Batik Jumputan Skill to Improve Fine Motor Skill of Mild Intellectually Disabled Children in Special Schools throughout Semarang City

Ratna Martyana [✉], Diana

Department of Early Childhood Teacher Education, Faculty of Education, Universitas Negeri Semarang, Indonesia

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Abstract

The aim of the study is to determine the effectiveness of the application of Batik Jumputan skill as an activity in improving the fine motor skill of mild intellectually disabled children in special schools throughout Semarang City. The research approach used is quantitative with the type of quasi-experimental research approach. The research design used is one group pre-test post-test. The subjects of this study are mild intellectually disabled children in special schools throughout Semarang City, in total 27 children. The data collection technique used is scale of fine motor skill with a number of 36 valid items that had previously been tested so that they could be used in the research, while the methods of data analysis are descriptive and hypothesis testing by using Paired Sample T Test. The results of the study showed that the level of fine motor skill of mild intellectually disabled children before being given the Batik Jumputan skill activities is included in the enough category with a percentage of 51.58% and after being given the Batik Jumputan skill activities included in the good category with a percentage of 48, 15%. Based on the results of the Paired Sample T Test obtained the value of t is $(-12,724 < -2,056)$ with a significant value of 0,000, so H_0 is rejected and H_a is accepted proving that there is significant difference in fine motor skill of mild intellectually disabled children after applied Batik Jumputan skills. The significant difference can be seen from the value of sig 2 tailed < 0.05 is 0,000. It means that the use of Batik Jumputan in this study can improve the fine motor skill of mild intellectually disabled children.

INTRODUCTION

Education is an effort to mature and change the behavior and attitudes of students or human beings that are carried out with conscious teaching and training. Children aged 0-8 years are those who are needed educational efforts to achieve physical and psychological development aspects including intellectual, linguistic, motor, and socio-emotional (Rahayu and Edi Waluyo, 2015: 43) Constitution of the Republic of Indonesia No. 20 of 2003 Article 5 Verse 2 also stated that "Citizens who have physical, emotional, mental, intellectual and or social disorders have the rights to receive special education". In line, Article 32 of the National Education System mentions "Special education is education for students who have difficulty in following the learning process because of physical, emotional, mental, social, and or potential intelligence and special talents". Students who have been listed in the constitutions are children with special needs or mentally retarded children. According to Ki Hajar Dewantara in Diana (Lestari, 2017: 132) said that education not only maintains intellectual intelligence, but also includes other intelligence, such as motor skills. Motor skills in children consist of gross and fine motor skills (Safitri and Agustinus, 2017: 40). Intellectually disabled or mentally retarded children are expected to have good fine motor skills to sustain their lives. Improving the fine motor skills of intellectually disabled children in the school environment can be done by batik. Nisa (2014: 140) stated that batik is a culture that has several human and environmental values that are carried out using *canting*. In addition to developing fine motor skills, children can also learn about Indonesian culture through batik activities at school.

Apriyanto (2014: 21) stated that children who are mentally retarded or intellectually disabled are children who have far-reaching intelligence or abilities with children in general or under the average followed by delays in their adaptability to the environment. Good education for intellectually disabled children is not merely about prioritizing academics, but the most important thing is the giving provision of skills so that later on after graduating children can be useful in society. According to Soetjiningsih (2012: 302) fine motor skills are skills which show hand movements that can be arranged smoothly such as writing, buttoning clothes, holding toys and other activities that require hand skills. Hurlock (1978: 154) also argued that fine motor skills are the expertise or ability where small muscles play the greater role.

These skills are based on maturity, for example when the maturity of the hand muscles produces the ability to hold objects and grasps, the child is ready to learn the skill of using his own spoon when eating.

Fine motor skills in schools can be improved by doing batik, stringing, painting, cutting, writing, sewing, folding, weaving and playing blocks (Jovanka et al., 2016: 83). Fine motor skills possessed by the children are certainly not the same, especially the intellectually disabled children. All this time, teachers in schools often provide drawing, stringing, coloring and writing activities in developing fine motor skills, while other skills such as sewing, batik, and weaving are fewer given to the children. Teachers often used learning methods by giving assignments that are less attractive to the children's interest in learning, thus making the development of children's fine motor skills less than optimal.

According to the reality in the field, researcher found a problem that occurred in mild intellectually disabled children in one of the special schools in Semarang city. According to the observation that have been carried out on mild intellectually disabled children in fine motor is still not optimal. It can be seen from the abilities shown in daily activities during the teaching and learning process. They are still having difficulty in holding objects around them that make them lack of readiness to carry out activities using the objects such as during pre-writing activities when the child is asked by the teacher to thicken the letters and trace shapes or lines, the child still looks stiff and has difficulty in holding the pencil that makes the results of tracing and coloring which still in the form of scribbles. Children are still having difficulties when wearing clothes and buttons also children are still having difficulties when wearing their shoes.

Learning that given to train the fine motor in special schools in Semarang city has not varied. Teachers less in planning the learning process, media selection and activities that are less appropriate, as Sofyan (2016: 30) argued, so the children's motor development cannot be optimally developed. The learning given is in the form of coloring, sticking paper, writing, and stringing. When learning coloring students are given illustrated paper and asked to color the picture. Children also still seem less enthusiastic and spirited in participating the learning. This can be seen from the child who does not immediately do the assignment given by the teacher, disturbs his friend, puts his head on the table, does other activities such as ask his friend to play and the

child often complains when asked to do the assignment.

Related to this, as a teacher or educator must be able to choose and make the learning activities that can attract children's fondness, especially the mild intellectually disabled children, so they can realize the desires to be achieved. Like Na'im's opinion (2015: 47) that teachers are required to be serious in developing all aspects of development through activities. Batik skills are one of the activities that can improve children's fine motor development. In addition to stimulating children's motor development, by learning batik children are given the opportunity to express their artistic creativity. Learning batik will train the children to be consistent, be patient in exercising, and continuously do it repeatedly so that they can appreciate the process rather than the instant things. Indra Tjahjani (Sari, 2013: 73), from the Mbatikyuk community, said that besides being an introduction to culture, batik activities for children can also help train the children's concentration.

Batik activities that are suitable for stimulating the fine motor development of mild intellectually disabled children, namely *Batik Jumputan*. *Batik Jumputan* is batik that does not use the paraffin as a material in manufacturing process of batik, so it is safe to do for mild intellectually disabled children. According to Murtono (2007: 11) *Batik Jumputan* is one of the batik which has a different manufacturing process with printed batik and hand-painted batik, the way is that dipped some parts of the fabric until form a motif. Doing the *batik jumputan* is a dipped process that is carried out by tightly binding parts of the fabric in accordance with the pattern before being dipped in coloring substances (Herni, 2007: 3).

Doing batik by *jumputan* on children can improve and stimulate the development of children's fine motor skills because in the activities of doing *batik jumputan* children can coordinate their fingers and eye movements in doing activities of folding fabric, fetching or tying fabric, doing the coloring process using spoon or brush. This is similar to the results of research conducted by Hapsari (2014) which stated that doing *batik jumputan* give influences toward the development of children's fine motor. The results showed that there was a significant increase in fine motor skills. It can be seen by the results of the average fine motor development of children after being treated using *batik jumputan*, proved by the results of the analysis of the average value before and after treatment of *batik jumputan* skills.

Windri, et al. (2016) suggested from the

results of their research that children who participated in doing *batik jumputan* activities, the fine motor skill of the children classically classified as good qualifications, but individually most of the children in the pre-cycle belong to qualifications developed enough to develop well. This increase was obtained from the application of doing *batik jumputan* activities with themes, water, air, fire, namely doing *batik jumputan* using 3 basic colors (blue, red and yellow). Based on the above it shows that there is an increase in fine motor skills in children.

The problems above show that the skills of doing *batik jumputan* are efforts of activities that can be used to improve the fine motor skills of mild intellectually disabled children. So this is important to do a research on "The Effectiveness of the Application of *Batik Jumputan* Skill to Improve Fine Motor Skill of Intellectually Disabled Children in Special Schools throughout Semarang City". The aim of this study is to improve the fine motor skill of mild intellectually disabled children by applying the skills of *batik jumputan* in special schools throughout Semarang city. The advantage of this research is the readers could know that in improving the fine motor skill of mild intellectually disabled children can be done by *batik jumputan* skill activities. The research on *batik jumputan* to improve the fine motor skill of mild intellectually disabled children is still rarely done.

RESEARCH METHOD

The method in this study used a quantitative research approach with the type of experimental research approach. This study used the design of one group pre-test post-test design. The one group pre-test post-test research was conducted in a group without comparison group (Arikunto, 2010: 212). The dependent variable in this study is the fine motor skills of mild intellectually disabled children, while the independent variable in this study is *batik jumputan* skills. The population in this study is mild intellectually disabled children in special schools throughout Semarang city. The researcher took samples of mild intellectually disabled children in Swadaya SLB, Pelita Ilmu SLB, SLB C YPAC, and MILB YKTM Budi Asih in total 27 children.

This research was conducted in Swadaya SLB, Pelita Ilmu SLB, SLB C YPAC, and MILB YKTM Budi Asih, Semarang city Central Java from 16 July 2018 to 24 August 2018. Data collection techniques in this study used scale of fine motor skill of mild intellectually disabled children

with the number of 36 valid items that have previously been tested so that they can be used in the research, while the data analysis techniques used are descriptive and hypothesis testing with Paired Sample T Test.

RESULTS AND DISCUSSIONS

This section is an explanation of the results of research relating to the application of *batik jumputan* skills in improving the fine motor skills of mild intellectually disabled children. The pre-test data can be seen as follows:

Table 1. Pretest Results Data

Interval Class	Number	Percentage	Category
52 – 66	4	14,81%	Very Less
67 – 81	8	29,63%	Less
82 – 96	14	51,86%	Enough
97 – 111	1	3,70%	Good

The table above shows the results of the pretest about the fine motor skills of intellectually disabled children and the percentage level of the number of children in the interval class with a certain score. The pretest results showed that the number of children in the very less category is 4 children with a percentage of 14.81%, 8 children with a percentage of 29.83% in the less category, the number of children in the enough category is 14 children with a percentage of 51.86%, the number of children in the category good as many as 1 child with a percentage of 3.70%.

The value of posttest can be seen as follows:

Table 2. Posttest Results Data

Interval Class	Number	Percentage	Category
52 – 66	0	0%	Very Less
67 – 81	3	11,11%	Less
82 – 96	11	40,74%	Enough
97 – 111	13	48,15%	Good

The table above shows the posttest data after the treatment being held. Based on the table above, it can be seen that there are 3 children with less categories with a percentage of 11.11%, 11 children with enough categories with a percentage of 40.74%, 13 children in the good category with a percentage of 48.15%, while for the very less category has a percentage of 0% which means that no child gets a score according to these

criteria. This shows that there is an increase in the number of fine motor skill of mild intellectually disabled children before and after the treatment of *batik jumputan*.

From the data above, it can be concluded that the results of this study is that the skills of *batik jumputan* can improve the fine motor skill of mild intellectually disabled children in SLB throughout Semarang city. It is proven by the calculation of Paired Sample t Test as follows.

Table 3. Paired Sample t Test's Test Results

	Paired Samples Test		
	T	df	Sig. (2-tailed)
Pair 1 pretest – posttest	-12.724	26	.000

Based on the table above obtained -12,724 with a sig value (2-tailed) 0,000 <0,05. Therefore < (-12,724 <-2,056) and the significance (0,000 <0,05) then Ho is rejected and Ha is accepted, it means that there is a significant difference in the level of fine motor skill of mild intellectually disabled children after applying *batik jumputan* skills.

Children with special needs or intellectually disabled children are children who have different individual needs with normal children (Ria, 2016: 46). According to the research problem and the purpose of the study, the researcher determined that fine motor skill of mild intellectually disabled children could be improved through *batik jumputan* skills. This is as said by Rosyidah et al. (2017: 64) that *batik jumputan* is a batik that is made by means of a tie-dipping method, the fabric is tied with a rope and then put into the coloring substance by dipping it. Ningsih (2001: 1) also argued that *batik jumputan* comes from the word of “*jumputan*” which comes from the Javanese language. *Batik jumputan* is made by means of fetching the fabric filled with seeds in accordance with the desired motif, followed by binding, and finally dipping into the coloring substance. Fine motor activities are usually given through activities related to the use of smooth muscles and fingers (Hania & Rina, 2016: 63). Giving treatment of *batik jumputan* activities helps mild intellectually disabled children to train their small muscles, coordinate their eyes and fingers so that they can be used correctly and maximally so that the fine motor skill of mild intellectually disabled children increase. The researcher gave the treatment in the form of *batik jumputan* activities.

Before being given the treatment, the researcher previously conducted a pretest to determine the first level of the fine motor skills of the respondents. Data that has been obtained at the pretest, before being given the treatment, there are 4 children in the very less category with a percentage of 14.81%, 8 children in the less category with a percentage of 29.83%, the number of children in the enough category is 14 children with a percentage of 51.86 % and the number of children in the good category as many as 1 child with a percentage of 3.70%. In general, the fine motor skill of mild intellectually disabled children is still in enough criteria, that is 51.86%. This is in accordance with the opinion of Uwardjani Martasuta in Somantri (2006: 108) that motor development of intellectually disabled children is not as fast as normal children development so that at the pretest there are children who are still in enough criteria.

After being given the pretest activity, the researcher gave a treatment in the form of a *batik jumputan* activity, then, the researcher gave the posttest activity which was carried out using the same method with the pretest. The data showed the results of 13 children with fine motor skills on the good criteria of 48.15%, 11 children on enough criteria of 40.74%, and 3 children on the criteria of less is 11.11%. It shows that the fine motor skill of mild intellectually disabled children after being given *batik jumputan* activities can increase which before being given the generally treatment are in the very less criteria become good criteria after given the treatment. It means that the treatment carried out by the researcher produce increase results of the first criteria which very less after being given the treatment the criteria increased become good. It can be said that the treatment given by researchers can improve the fine motor skill of mild intellectually disabled. This is as said by Dinna & Khamidun (2017: 9) that fine motor skills can be stimulated and enhanced by various methods, media and activities.

In practice, mild intellectually disabled children need clear direction and examples so that the fine motor skill of mild intellectually disabled children can increase optimally. According to Aisyah, et al (Putri, 2017: 6) there are several ways to develop fine motor skills there are trial and error, imitation, and training. In the beginning intellectually disabled children were still having difficulty in carrying out the stages of *batik jumputan* skill activities such as folding, grasping and binding the fabric, coloring with spoons, open the coloring results and drying the fabric. After repeatedly and gradually treatment,

mild intellectually disabled children can do it quite well.

Movements that carried out through the *batik jumputan* activities are needed for children when working on the given tests of fine motor skills. When connecting dots and coloring, mild intellectually disabled children need the power to hold and use the stationery. In addition, children also need the ability to move their fingers, hands and wrists. This activity can be trained through batik coloring's movements with a spoon, holding and binding the fabric and the coordination of hand and eye. Through the coloring's movement with a spoon and grasping and binding the fabric of mild intellectually disabled children trained the strength of his fingers when using the stationery both pencils and colored pencils, besides, through the movement of folding and binding the fabric children are trained to move the fingers of the wrists when using the stationery to write and coloring the picture.

When cutting the paper, mild intellectually disabled children need strength when holding and using the scissors, in addition the children also need the flexibility of their hand when moving the scissors according to the pattern that provided. Mild intellectually disabled children are trained through coloring's movements with a spoon and holding and binding the fabric and when moving the scissors according to the pattern can be trained through the movement of folding the fabric and pouring the color. When folding the fabric and pouring the color, the mild intellectually disabled children is lightly trained to move the fingers of the wrists. Exercise to improve fine motor skills, the coordination of eyes, hand, and fingers are also needed for mild intellectually disabled children in daily activities such as eating, bathing, wearing clothes, buttoning clothes and wearing shoes so that mild intellectually disabled children do not depend on the others' help.

Some studies about the application of *batik jumputan* skills to improve the fine motor skill of mild intellectually disabled children are research conducted by Riana Fitri Agustina Putri in 2017 entitled "The Application of Tie-Batik Skills to Increase Fine Motor Skill of Mild Intellectually Disabled Children Young Class in Special School". The results of the study showed that there was a significant increase after the mild intellectually disabled children were given the tie-batik skill. The increase can be seen from the results of the previous average value of 34.45 become 73 so that the difference obtained is 36.55. Data analysis of $Z_h = 2.04$ is greater than Z_{table} , the fact that the value of Z table in the count is

2.04 greater than the value of the crisis bilai of Z table of 5% using two-sided testing of 1.96 ($Z_h > Z_t$) so that H_0 is rejected and H_a is accepted. It means that there is a significant increase.

Then, the research conducted by Warsinah in 2014 entitled "Improving the Fine Motor Skill of Children through the Art of Batik Group B in Masaran 1 Kindergarten, Masaran Sub-District, Sragen Regency in 2013/2014". From the results of observations obtained the results before the learning (Pre Cycle) as many as 5 children (25%) included in the complete category. After Cycle I learning from 20 children there were 10 children (50%) who were categorized as complete. After Cycle II learning, there were 18 children (80%) who were categorized as complete. So that from the pre-cycle results until Cycle II learning can be concluded that the fine motor of children in group B in Masaran 1 Kindergarten, Masaran Sub-District, Sragen Regency, Academic Year 2013/2014 can be improved through batik art activities.

Based on the description of the results of the relevant research, it can be concluded that the fine motor skill of intellectually disabled children increase after being given the treatment in the form of applying *batik jumputan* skills.

CONCLUSION

Based on the results of the study "The Effectiveness of the Application of *Batik Jumputan* Skill to Improve Fine Motor Skill of Intellectually Disabled Children in Special Schools throughout Semarang City", so the conclusion is the level of fine motor skills of mild intellectually disabled children after given *batik jumputan* activities increased and there are significant differences, then it can be said that giving *batik jumputan* activities is effective to improve the fine motor skills of mild intellectually disabled children in special schools throughout Semarang city. It is showed by the fine motor skill of mild intellectually disabled children before given *batik jumputan* activities is showing the children in enough categories with a percentage of 51.86%. Fine motor skill of mild intellectually disabled children after given *batik jumputan* activities is showing children in good categories with a percentage of 48.15%. Based on the results of calculation of Paired Sample t Test obtained $t < t_{table}$ that is (-12,724 < -2,056) with a significance value (2 tailed) of 0,000. Then H_0 is rejected and H_a is accepted, it means that there is a significant difference in the level of fine motor skill of mild intellectually disabled children after applying *batik jumputan* activities. The significant

differences can be seen from the value of sig 2 tailed <0.05 which is 0,000.

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