Improving Fine Motor Skills of Children With Autism through Shibori Training

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***Abstract*—This paper discusses about the improvement of fine motor skills of autistic children through shibori skills. Shibori is included in the fabric coloring technique that produces attractive motifs using techniques of folding, sewing, pulling, pinning or twisting. Shibori's skills are expected to train the fine motoric of children with autism in carrying out daily activi with collaboration with teachers. Implementation of Shibori includes lectures, demonstrations and training, as well as guidance and monitoring and evaluation. The results showed that children were able to make shibori correctly and independently and improve fine motor skills in children with autism.**

Keywords*—*shibori skill, fine motor, autism

I. INTRODUCTION

Children with autism are children who experience obstacles in their development. Children with autism experience complex developmental obstacles and it has seen before they are three years old so that the child experiences obstacles in communication and social interaction [1]. Autism is a developmental disorder in the brain which characterized by the emergence of stereotypical, repetitive, obsessive, and restrictive behaviours that have not been found what gentle way to heal it [2]. Behaviour in children with autism seems to originate from themselves, and this causes children with autism experience obstacles in interacting with their environment [3]. They prefer to be alone and avoid contact with other people.

Education given by the teacher should be able to make the young generation have more good ability, both academic and non-academic skills that can assist in carrying out daily activities [4]. Children with autism also have the same needs and rights as typical children in terms of education. However, with challenges such as physically, mentally, socially and intellectually, they also need different education and adjusted to their circumstances. Children with autism need to get an education to develop their talents and interests, both formal (at school) and informal (at home and in the community). Instructional that given to children with autism is generally carried out based on several principles, namely: structured, patterned, programmed, consistent, continuous, concrete, learning by doing, face and voice direction, specialization and ability, principles and emotions, social and behavioural [5].

Motor development is a change in the ability of movement from the time of birth to adulthood, which involves a variety of motion abilities and behavioural aspects [6]. [7] Fine motor development is one of the supports that are very important in carrying out daily activities because it is associated with the movement of small muscles that have good coordination between the hands and eyes. Good fine motor skills, will help a person to activities in his life, such as writing, tie shoelaces, combing hair and cutting. In developing the fine motor skills of children, teachers need to know how the development stages, so there is no mistake in giving stimulation to children [8]. If children had a lack of stimulus during childhood, it would affect their ability later.

Shibori skills are techniques originating from Japan, and commonly called Japanese batik is a variety of ways to decorate fabrics with various techniques of folding, binding, and other things such as tie-dye in English or tie-dye in Indonesian [9]. In making shibori some skills will be taught to the child, namely squeezing, tying, pinching, folding, cutting, and pulling so that they can practice the child's fine motor skills

Based on a preliminary study that researchers did at SLB Autis (Special school for children with autism) YPPA, two children with autism of grade seven with the initials AI and HV found that it was challenging to carry out activities in the classroom, such as writing, cutting, tie shoelaces and others. It is seen in AI and HV who have stiff hands. If HV likes to grasp something hard, for example, when writing, he presses the pen so hard. While AI can holding something but when writing, the pen sometimes falls, also when cutting, the cutting is not straight. When they told to stringing, connecting the dots and colouring, the child also experienced difficulties. The hand and eye coordination of HV and AI is also weak. The

results of observations conducted by the author and from the results of interviews with the classroom teacher, children experience obstacles in fine motor skills.

Based on the problems the researchers collaborated with teachers to improve the fine motor skills of children with autism by using shibori skills. [7] shibori is a way to decorate the fabric by sewing, binding, folding, and clamping the fabric then dipping it into the dye. This shibori skill is exciting, which has the flexibility of the muscles of the child's fingers that trained and to avoid the feeling of boredom that makes the child more enthusiastic in participating in making shibori learning. In making shibori, some skills will be taught to children, namely squeezing, binding, cutting and cutting, folding and pulling so that they can train the flexibility of the child's finger muscles.

II. RESEARCH METHODOLOGY

Based on the problems, this research applied classroom action research. [10] classroom action research is a research activity carried out in a class that can solve the problems faced by teachers, improve the quality of learning and try new things in teaching and learning. [11] the purpose of classroom action research is to improve and encourage teachers to think hard about how the learning quality becomes good. This research was conducted in grade seven of SLB Autis YPPA Padang. This study is related to the process of improving fine motor skills for children with autism. The implementation of this study uses two cycles, which are carried out four times per cycle. This study used action tests, observation and documentation as data collection techniques.

III. RESEARCH RESULT

The implementation of this research activity was carried out in two cycles for eight meetings. In the first cycle, four meetings were held. Similarly to the second cycle, which was also held for four meetings. The stages of activities in each cycle, namely planning, action, observation and reflection. The results of the data in the first cycle can be seen in Figure 1:

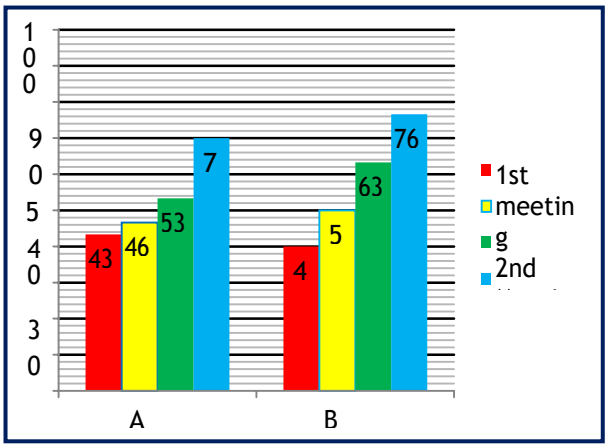

Fig. 1. The results of children's fine motor skills in the first cycle

Based on the Figure, it can be seen that the child's fine motor skills have increased, even though they have not achieved optimal results. After being given the action in the first cycle, the researchers, together with collaborators, make observations and reflections. The value obtained by children is not following what researchers and collaborators expect. Therefore, students still need a lot of practice and guidance but are more focused on children's abilities which have not been mastered. In the first cycle, the ability that has been mastered by the child is mentioning the material, the tool, and making a triangle pattern on the fabric. However, when folding cloth, sewing bare patterns, tying cloth, squeezing cloth and cutting students threads have not been mastered and still need much help. Researchers and collaborators agreed to continue the action to cycle II.

In the second cycle, the research conducted the same as the first cycle, namely in the first stage the researchers and collaborators re-planned, then the second stage of the action was carried out for four meetings with an allocation of 1x45 minutes. The difference between cycle I and cycle II is in providing intensive guidance to students and changing sewing materials into wool to make it easier for children to tie the cloth. The activities carried out in the second cycle remained the same as those carried out in the first cycle, in the form of initial activities, core activities and final activities as conclusions, and at the end of the conclusion, the researchers immediately evaluated to find out the value obtained by the child. The results obtained by the child in the second cycle are described in Figure 2.

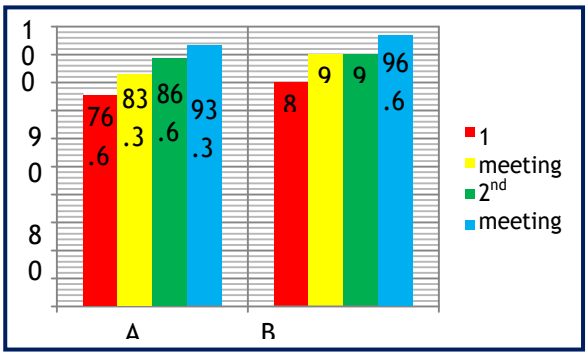

Fig. 2. Graph of the results of children's fine motor skills in the second cycle

Based on Figure 2, it can be seen that there is an increase in students' fine motor skills at each meeting. Based on the acquisition of the value obtained by the second cycle, it can be said that the child's fine motor skills possessed by the child are excellent because generally the aspects that are in making shibori can be done well.

The next step after analyzing the data, the researcher made observations. From the results of the children's grades in the second cycle, the shibori learning process to improve the fine motor skills of autism class VII children in SLB Autis YPPA Padang. The last stage of activity in cycle II is a reflection. Researchers and collaborators concluded that the fine motoric abilities of students were excellent and reached maximum values according to what had been designed. Therefore researchers and teachers agree to end the action in cycle II.

The results of the research on improving the fine motor skills of autistic children through shibori skills after being given treatment for two cycles can be described that children control some items that have been given to children in this study. Therefore, it can be said that the aim of the research to improve the fine motor skills of children with autism through shibori skills can be improved and show good results.

IV. CONCLUSION

Based on the results and data analysis, it can be concluded that the shibori skills can improve fine motor skills in autistic children. It is indicated by an increase in the results obtained in the second cycle. The value obtained by AI students in the first cycle is 70% and in the second cycle gets a value of 93.3%. While HV students scored 76.6% in the first cycle and in the second cycle, got a score of 96.6%.

The learning conducted in the first cycle and the second cycle is almost the same. However, in the second cycle, there are several additions, including teachers providing more intensive guidance to students to achieve the determined value. Before starting learning, the researcher closes the classroom door and locks it so that other students do not enter class, giving action to cycle II replacing ordinary sewing thread with thread wool to make it easier for children to tie cloth, multiply training students in cutting, folding and binding at the end of the meeting, given more praise when students can do well during the learning process.

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