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### **The Effect of Playing Jelly Beads in Improving Fine Motor Skills for Class Iv Children with Mild Intellectual Disability at Slb C Sukapura Bandung City**

**Argiasri Mustika**

Email: [argiasrimustika@uninus.ac.id](mailto:argiasrimustika@uninus.ac.id)

**Nopebriyanti Sigalingging**

Email: [nopebriyanti@uninus.ac.id](mailto:nopebriyanti@uninus.ac.id)

**Putri Ayu Komala**

Email: [putriayukomala@uninus.ac.id](mailto:putriayukomala@uninus.ac.id)

**Salsabil Nurrahma**

Email: [salsabilnurrahma@uninus.ac.id](mailto:salsabilnurrahma@uninus.ac.id)

**Siahaan Elsa Miracle Sundame**

Email: [siahaanelsa@uninus.a.id](mailto:siahaanelsa@uninus.a.id)

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#### **Abstract**

This study aims to improve fine motor skills of children with mild intellectual disability. The supporting media used in this study used jelly beads / hydrogel in improving fine motor skills for children with mild intellectual disability. The research used is experimental research in the form of Single Subject Research (SSR), with A-B design and technical data analysis in the form of graphs. The assessment of this study uses instruments and observations to determine the extent of the child's abilities. The results of the study of fine motor skills in children with mild intellectual disability grade IV at SLB C Sukapura, seen in the baseline conditions the observation was carried out 5 times, in the condition of observational intervention carried out 7 times. Based on the results of research and data management, it was concluded that jelly beads media has an effect on improving fine motor skills of children with mild intellectual disability. Research recommendations are addressed to teachers to always use learning media in carrying out teaching and learning activities so that learning objectives can be achieved.

## **Keywords**

fine motor skill, jelly beads media, mild intellectual disability children

## **Introduction**

Fine motor skills are very useful for children to complete skill activities in their lives. Fine motor skills will train children to be skilled in using hands and fingers and coordinating eyes in a balanced manner. Sumantri (2005: 143) states that "fine motor skills are organizing the use of a group of small muscles such as fingers and hands which often require accuracy and coordination of the eyes with hands".

Children with intellectual disabilities are generally children who have intellectually below average. Children with intellectual disabilities as formulated by Grossman (1983: 54) in Astaty (2015: 15) used by AAMD that: "Intellectual disability refers to general intellectual functions that have a general intellectual that is manifestly below average along with deficiencies in behavioral adaptation and lasts in the developmental period".

Children tend to take a long time to learn something, their behavior is not harmonious, some have a disturbed mentality, are prone to disease and sensitive to small things. For this reason, it is necessary to do exercises to hone fine motor skills in children with mild intellectual disability by: training hand muscle skills using jelly beads playing media.

According to Rachele (2010: 4) "jelly beads / water beads are inedible beads or granules and are made from a combination of water and water-absorbent polymers. Polymer is made of tiny particles that stick together and can absorb water, which turn into flexible, breakable jelly balls." Therefore, researchers take advantage of the use of jelly beads play media as an effort to improve fine motor skills for children with mild intellectual disability in order to flex the hand muscles by means of children can squeeze, pinch and break jelly bead with both hands. So that it can train the ability of hand muscles in each child with intellectual disabilities so that their hands are not stiff.

Fine motor development is very important to be trained on every individual, fine motor can impact the development of physical and mental growth in learning. Fine motor development for children with mild intellectual disability is later than for children in general.

The obstacles experienced by children with mild intellectual disability are that children are difficult to grasp, squeeze, jump, press, where the child's fingers and wrists are stiff, unbalanced or uncontrolled hand movements that can affect the child's dexterity such as writing, drawing, wearing clothes and others. Lack of development in fine motor children with mild intellectual disability due to delays in nerve development so that children find it difficult to stimulate various fine motor skills. To develop fine motor children need support and motivation from the surrounding environment by providing opportunities for children to train fine

motor by providing the necessary facilities and infrastructure. Therefore, researchers provide a means for children with mild intellectual disability, namely jelly beads media.

The results of relevant research can be used as a reference before the research is conducted, many researchers have developed their research in improving fine motor skills for children with intellectual disabilities through water beads/jelly beads, the study that has been carried out by researchers is the journal by Sari and Syafi'i (2021) in the Journal of Early Childhood Education majoring in Early Childhood Islamic Education, Sunan Ampel State Islamic University with the title: Development of the ability to recognize early childhood colors through water beads. The similarity of the problem from this study is using water beads/jelly beads with different research focuses. In previous studies focused on developing the ability to recognize colors, while this study focused on fine motor development. The journal by Safitri (2016) in the Scientific Journal of Special Education with the title: Improving Fine Motor Skills Through Necklace Making Skills In Moderately Mentally Disability Children In Grade IV SLB Negeri 2 Padang. The similarities in the study are about fine motor children with different subjects, namely in previous studies children with moderate intellectual disability and in this study were children with mild intellectual disability. Journal by Santoso and Rianto (2014) in the Journal of Special Education majoring in Special Education, Faculty of Education, State University of Surabaya with the title: Playing Tactile Game On Fine Motor Children With Moderate Intellectual Disability in SDLB. The similarity in this study is playing for children's fine motor skills with different media. In the previous study, it used tactile play, while in this study the media used was jelly beads.

Based on research conducted by researchers at SLB C Sukapura Bandung City, researchers found children with mild intellectual disability in grade IV with fine motor skills of children who are still very lacking and need help in improving fine motor. The basic ability possessed by children is that children are able to grasp pencils and hold flat objects such as spoons is not right. Children's fine motor skills have not been trained properly, it is proven that children need a long time and require teacher assistance in writing and children still have difficulty in making straight lines and slashes. The pressure is still too weak in moving his fingers which are still stiff because the control of the hand muscles has not been trained properly. If this fine motor is not trained properly, it will hinder the learning process and daily activities of children.

According to Sujiono (2009: 17) who said that "fine motor is a movement that involves certain parts and is carried out by small (smooth) muscles and requires careful coordination".

In line with the above according to Bambang. (2012:1.14) states "fine motor movements are movements involving only certain parts of the body and are carried out by small muscles. Such as the skill of using fingers and precise hand movements".

In this study, fine motor activities are activities that require the use of small muscles in the hand such as fingers and wrists. These activities include squeezing, jumping, holding spoons and breaking jelly beads.

Jelly beads/hydrogels are granules that can absorb water, which when soaked in water the granules turn into flexible jelly balls and can be broken down.

According to the *Kamus Besar Bahasa Indonesia* (2008: 540) "plant media that can replace water and soil that look like gelatine, polymers that are able to absorb water up to 500 times their own weight", while according to Rachelle 2 (010: 4) "Water beads are inedible beads or granules and are made from a combination of water and water-absorbent polymers. Polymers are made of tiny particles that stick together and can absorb water, which turn into flexible, breakable jelly balls." Jelly beads are beads that can absorb water so that they can enlarge. These jelly beads are round and colorful with bright colors.

Media used in improving fine motor skills through playing jelly beads in children with mild intellectual disability so that children can flex the hand muscles. How to play using this jelly beads media, children can squeeze, jump, move, press and break jelly beads with both hands. So that it can train the ability of hand muscles in each of these children so that the child's hands are not stiff.

Fine motor skills are the ability to use hand muscles well, especially fingers, among others, by folding fingers, grasping, pinching with fingers, and attaching. According to Noormiyanto (2015: 35) "Children with intellectual disabilities have difficulty in fine motor coordination, so this will interfere or hinder their development, especially when children learn to write and do daily activities".

Fine motor development is very important for each individual because optimal fine motor development will certainly affect the ability of each individual. The influence of fine motor development can have an impact on the development of physical and mental growth in learning at school. As quoted from the journal Kintamani (2017: 2) "Motor development that occurs in children with mild intellectual disability is more inhibited than normal children. Obstacles in children with mild intellectual disability when doing movements that use small muscles such as holding, squeezing, washing hands and writing are caused by one of the factors, namely the fine motor skills of children who are not good and have not been trained optimally".

Children with mild intellectual disability tend to take a long time to learn something, their behavior is not harmonious, some have a disturbed mentality, are prone to disease and sensitive to small things. For this reason, it is necessary to do exercises to hone fine motor skills in children with mild intellectual disability by: training hand muscle skills using jelly beads playing media.

Fine motor problems in children with mild intellectual disability are difficult to grasp, stiff fingers and wrists of children, unbalanced or uncontrolled hand movements that can affect children's dexterity such as writing, drawing, wearing clothes and others.

Research hypothesis according to Sugiyono (2019: 96) "Hypothesis is a temporary answer to the formulation of a research problem where the formulation of the research problem has been stated in the form of a question".

The hypothesis used in this study is "If jelly beads media is used as a medium, the fine motor skills of children with intellectual disabilities will increase".

### **Research Methodology**

The focus of this research is the effect of playing jelly beads in improving fine motor skills for grade IV children with mild intellectual disability at SLB C Sukapura Bandung City. Therefore, the approach that is considered suitable for use in studying this research problem is a quantitative approach because quantitative research is research that reveals cause-and-effect problems through data in the form of numbers processed using descriptive statistical analysis.

Single Subject Research (SSR) method or single subject research according to Sunanto (2005: 56) is "a method that aims to obtain the necessary data by looking at the results of whether or not there is an influence of changes that occur from a treatment given to subjects repeatedly in a certain time".

The approach taken in this study researchers used Single Subject Research (SSR) to improve fine motor skills for children with mild intellectual disability. Single Subject Research (SSR) is subject research with research procedures using experimental design to see the effect of treatment on behavior changes. By using Single Subject Research (SSR) research, researchers can carry out experimental actions and observations to determine changes in behavior from experiments conducted. The use of this research method aims to obtain information and evidence that exists in improving fine motor skills through playing jelly beads for grade IV children with mild intellectual disability at SLB BC Sukapura Bandung City.

The design used in this method is the A-B design which consists of 2 stages of conditions, namely:

1. A (baseline) is the initial condition of children's basic abilities in learning to play jelly beads.
2. B (intervention) is the condition of the child in the second stage which aims to improve the ability to learn to play jelly beads.

This research was carried out at SLB C Sukapura located on Jalan Perumahan Bumi Asri No. 3, Sukapura, Kiaracondong, Bandung City, West Java 40285 which was carried out in classroom IV using jelly beads media. The instruments used in this study are:

#### **Figure 1.1**

Fine Motor Activity Instrument with Jelly Beads Media for Children with Light Intellectual Disability Class IV at SLB C Sukapura Bandung City

Name :

Class :

Date :

No.	Aspect	Sub aspect	Indicator	Details of activity	Percentage explanation (100%)
1.	Fine motor	1.1. Playing jelly beads	1.1.1. Soaking jelly beads	1.1.1.1. Child is able to open jelly beads 1.1.1.2. Child is able to pull out jelly beads from plastic 1.1.1.3. Child is able to pour water into container filled with jelly beads	
			1.1.2. Controlling hands movement using smooth muscle 1.1.3. Adapting manipulative movement to produce a form using jelly bead	1.1.2.1. Child is able to collect the jelly beads 1.1.3.1. Child is able to squeeze jelly beads 1.1.3.2. Child is able to break jelly beads by 3 fingers 1.1.3.3. Child is able to press jelly beads by 2 fingers.	
			1.1.1. Expressing themselves in art of using jelly beads 1.1.2. Insert jelly beads according to the pattern	1.1.1.1. Child is able to arrange jelly beads to form number 1 1.1.1.2. Child is able to arrange jelly beads to form letter L 1.1.2.1. Child is able to move jelly beads into container without falling 1.1.2.2. Child is able to shove jelly beads with a fork 1.1.2.3. Child is able to spoon jelly beads with a spoon.	
			1.1.3. Imitate movement	1.1.3.1. Child is able to move the hand up according to instructions 1.1.3.2. Child is able to move the hand down according to instruction 1.1.3.3. Child is able to move the hand right according to instructions 1.1.3.4. Child is able to move the hand left according to instruction.	
			1.1.1. Hands resistance	1.1.1.1. Child is able to coordinate fingers by holding a flat object such as fork filled with a jelly bead within 10 seconds 1.1.1.2. Child is able to coordinate fingers by holding a flat object such as fork filled with a jelly bead within 15 seconds 1.1.1.3. Child is able to coordinate fingers by holding a flat object such as spoon filled with 5 jelly beads within 10 seconds 1.1.1.4. Child is able to coordinate fingers by holding a flat object such as spoon filled with 5 jelly beads within 15 seconds.	
			<b>Total</b>		100%

The assessment criteria in learning to play jelly beads in this study are using percent where the total number of 20 questions will get 100% with per item of instrument will get a percentage of 5% with information namely:

1% = Incapable. Children are not at all able to do activities either with the help of words, physical assistance and the help of props.

2% = Underprivileged. Children are still helped with words, physical assistance, and props. Although it has been helped, the child's work is also messy and untidy.

3% = Capable enough. Children are only helped with words and props. Children's work also starts neatly and not messy.

4% = Able. Where children are only helped by words and children's work has also begun to neatly

5% = Very capable. The child already knows what will be done from the initial activity to the next activity. Children also do not need help either with the help of words, physical assistance, or props.

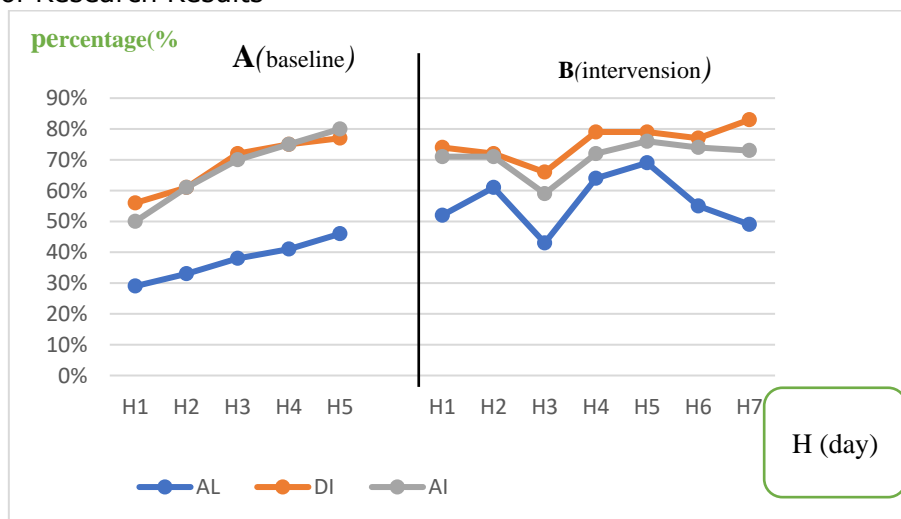
## Result And Discussions

### Result of Research

Data collection was carried out at SLB C Sukapura, the study conducted observations and interventions on children with repetitive activities. Researchers carried out the planned study, 5 days were baseline and 7 days were interventions. The results of the research that has been carried out are as follows:

**Figure 1.2**

Graph of Research Results



From the data we have obtained, on the first day children with the initials AL get a score of 29% because the fine motor skills of AL children are not as good as DI and AI children. DI gets a score of 56% and AI gets a score of 50%. AL difficulty in unwrapping plastic, jumping, squeezing, breaking and pressing *jelly*



*beads* with 2 fingers. Children are confused in following the instructions instructed also children have difficulty in coordinating fingers in holding flat objects for a certain time.

The second day of AL, DI and AI improved. AL scored 33%, AT 61% and AI 61%. Begin to increase the child's ability to open, remove and pour water. However, AL has difficulty in shoving jelly beads using forks, jumping, squeezing, breaking, following the instructions instructed and in coordinating fingers in holding flat objects for a certain time. DI and AI are able to keep up well but are impatient in using the media.

The third day AL scored 38%, AT 72%, AI 70% of children began to improve. Children have been able to break their own jelly beads using 3 fingers even though the difficulties faced are still the same as the second day. For DI, it has begun to be able to coordinate fingers using a fork until the 13th second and AI is starting to be able to arrange jelly beads to the shape of the number 1 properly.

The fourth day the child developed again with AL getting a score of 41%, DI 75% and AI 75%. AL has begun to be able to open, remove and pour its own water but still has the same difficulty in arranging jelly beads to the shape of the number 1 and the letter L, when compiling AL even solves it. DI is able to move his hands according to the instructions up and carry but still confused when going left and right, AI has begun to be able to follow the instructions but is impatient in doing so.

On the fifth day, AL scored 46% of children were able to squeeze jelly beads, although they still had difficulty raising their hands according to instructions because their fine motor skills were still not as good as DI and AI. DI scored 77% for being able to coordinate hands by holding a spoon for up to 15 seconds. AI with a value of 80% that has increased when moving jelly beads using a spoon without falling.

The first day in the intervention AL received a value of 52% increase, AL began to be able to move his hands up according to instructions, although still assisted by demonstrating. As for DI and AI, it decreased to 74% and 71%, when moving jelly beads into the container, they fell 3 times because they were not focused and AI was still confused when moving their hands left and right.

The second day AL increased to 61%, AL began to be able to squeeze jelly beads on their own without assistance, DI scored 72% with the ability to coordinate hands using a spoon for up to 15 seconds and AI with a value of 71% who began to be able to move hands according to instructions without being demonstrated.

The third day the children experienced a drastic decrease due to physical activities so that the children were not focused and no longer enthusiastic to do learning activities to play *jelly beads*. AI scored 43%, DI scored 66% and AI 59%. The fourth day the children improved due to activities running as usual, AL got a score of 69% children began to be able to spoon jelly beads into the container



even though they had fallen 2x. DI scored 79% with the ability to coordinate fingers by holding a fork to the 13th second while AI scored 72% with progress to move the hand according to instructions without being demonstrated.

On the fifth day AL, there was an increase in value to 69% by being able to open, remove and pour water itself into the container, DI 79% with the same ability but impatient and AI 76% who were able to coordinate fingers by holding a spoon for up to 15 seconds.

The sixth day of the children's intervention experienced a slight decrease due to a two-day break in time, AI scored 55% decrease in moving hands according to instructions to be assisted, 77% for DI whose attention is easily expert with the surrounding environment and AI which received a score of 74%.

The last day of the AI intervention decreased to 49% because the child was getting bored and also because the next day there was a fasting holiday so that the child had no more enthusiasm into play jelly beads, while DI increased to 83% because it would get rewards as well as AI with a value of 73% because the child could not wait to go home.

## **Disucussions**

In accordance with the situation of children in the field with poor fine motor skills and found that jelly beads media are interesting to be used as learning media in improving fine motor, and in accordance with the research hypothesis that if jelly beads media is used as a medium for, then children's fine motor skills will increase.

The overall results of this study given to research subjects there was an increase in fine motor on base line 1 to the intervention and base line 2 in each subject increased, it can be seen when given the intervention, namely when children were given jelly beads media fine motor skill of intellectual disability children increased according to the hypothesis in this study.

The results of fine motor skills of research subjects are quite good because of the increased changes during and after using jelly beads media, jelly beads media play a role in improving fine motor skills and the response of research subjects when learning because this media is interesting, fun and different from other media.

## **Conclusions And Recommendation**

### **Conclusions**

Based on the results of research data that researchers have done, it can be concluded that by learning to play jelly beads makes it easier to improve fine motor skills of children with mild intellectual disability, from the results of calculating values using SSR (Single Subject Research). The value obtained when learning to play jelly beads in class IV children with mild intellectual disability at

SLB C Sukapura can be seen from the results of the process passed by each child carried out every day which has significantly improved their fine motor skills because of children's interest in participating in learning using the jelly beads play media.

The effect of jelly beads on improving fine motor skills for children with mild intellectual disability grade IV at SLB C Sukapura Bandung City cannot be separated from the help of researchers, both in word assistance, physical assistance and teaching aid.

#### **a. On the subject of AL**

At baseline (A) 5 sessions of observation were made and intervention (B) 7 sessions of observation were made. In intervention (B) on the first day and the second day the child experienced an increase but on the third day the child experienced a decrease it was caused by the child's unstable mood and the child's activities on that day at school were very much so that it made the child's spirit decrease during the learning process of playing jelly beads. On the fourth and fifth days children experience an increase due to jelly beads playing activities carried out in the morning when children are still excited. On the sixth and seventh days the child decreases. This happened because of a two-day holiday gap that made children forget about the process of playing jelly beads.

#### **b. On the subject of DI**

At baseline (A) 5 sessions were observed and intervention (B) 7 sessions were observed. At baseline (A) on the first day and the second day the child experienced an increase but on the third day the child experienced a slight decrease because the lack of concentration the child had made the child less excited when learning to play jelly beads, on the fourth and fifth days the child increased again. In intervention (B) on the first day the child experienced an increase while on the second and third days the child decreased greatly due to the child's unstable mood and on that day the activities carried out by the child at school were very much so that it made the child less enthusiastic in learning to play jelly beads. On the fourth day and the fifth day children experience an increase because when doing the jelly beads learning process is done in the morning when children are still enthusiastic about playing jelly beads. On the sixth day the child experienced a slight decrease due to the lack of concentration of children when playing jelly beads. On the seventh day the child has an improvement.

#### **c. On the subject of AI**

At baseline (A) 5 sessions were observed and intervention (B) was observed 7 sessions. At baseline 1(A) from day one to day five the child improves. While in intervention (B) on the first and second days the child

experienced a slight decrease because there was a gap of time off for two days, namely on Saturday and Sunday. On the third day the child experienced a decrease caused by the child's unstable mood coupled with the activities carried out by children at school very much and learning activities to play jelly beads were carried out during the day which made the child not enthusiastic in learning to play jelly beads. On the fourth and fifth days children experience an increase because when doing the process of learning to play jelly beads is done in the morning when children are still enthusiastic in learning to play jelly beads. On the sixth and seventh days children decreased because there was a gap in vacation time for two days, namely on Saturday and Sunday which made children forget the process of playing jelly beads.

### **Reccomendation**

Based on the conclusions stated above, researchers conveyed several recommendations in the hope that they can be taken into consideration in improving children's fine motor skills by learning to play jelly beads.

#### **a. For teachers.**

This research is expected to be useful in increasing teacher creativity and can provide an overview of training programs to improve fine motor skills.

#### **b. For Schools**

This research is expected to be used as input material on the development of the implementation of jelly beads learning activities in improving fine motor skills. Schools should continue to strive to improve competence and support efforts to increase teacher competence in making teaching media interesting and relevant in accordance with what is needed by children.

#### **c. For future researchers**

Information from the results of this study can be a reference or reference to subjects who have the same characteristics, in order to expand strong evidence on more subjects and this learning media can support when training children who have obstacles, especially in motor ability.

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