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Latrihal Media to Improve Fine Motor Ability in Student with Visual Impairment

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ABSTRACTS

The purpose of this study was to determine the use of latrihal media in improving fine motor skills in students with visual impairment. The methods used are lectures, demonstrations, and assignments. The subject of this research is 1 student with visual impairment at the special needs school, in Sumedang, West Java. The results showed that students experienced an increase in ability and had reached the Minimum Completeness Criteria of 65. In the initial ability, students get a score of 25 with a percentage of 25% and increase to a score of 72 with a percentage of 72%, so that there is an increase of 47%. Increased research is also indicated by the results of initial observations obtaining a score of 2 in the discipline aspect; a score of 1 on the conscientious aspect; score 1 on the aspect of concentration; and a score of 1 on the participatory aspect to a score of 3 on the discipline aspect; a score of 3 on the conscientious aspect; score 3 on the aspect of concentration; and a score of 3 on the aspect of participation in the final observation because students get direct experience using interesting media. This study demonstrates that the use of concrete learning media will make it easier to improve students' finger coordination skills. In addition, fine motor training media also makes it easier for teachers to guide students, especially for students with visual impairment.

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1. INTRODUCTION

Students with visual impairment are students who experience damage to their vision after being corrected and experiences limitations in obtaining visual information (Suraningsih, 2020). As a result of visual impairment, students with visual impairment experience obstacles in obtaining visual information and also experience limitations in the scope of types and variations of experience, limitations in moving places (mobility), and limitations in interacting with the environment. The consequences of visual impairments experienced by children with visual impairment have an impact on the learning process and activities of daily life, one of which is obstacles in fine motor skills. Fine motor skills are physical skills that involve small muscles and eye-hand coordination (Suciati & Sumiharsono, 2018). Fine motor development is an activity that requires speed, accuracy, and moving skills, especially in finger coordination. Improvement of fine motor skills can be done using various ways and various media as long as the learning process is in accordance with the principles of learning for children (Tahel & Ginting, 2018). Media is a means that can be used to achieve learning objectives. Learning media according can be in the form of text, audio, video visuals, engineers/model, and people. Latrihal media is one of the engineering media or models consisting of 6 forms of exercise in the form of squeezing exercises, picking exercises, tearing exercises, opening and closing zippers, installing and removing buttons, and putting ropes into holes. This media is made of flannel cloth which is equipped with accessories (such as adhesives, zippers, buttons, or shoelaces) according to their function.

Currently, many studies discussed fine motor skills in students with visual impairment, including the use of meronce skills that can improve fine motor skills in students with visual impairment (Sucianti & Sumiharsono, 2018) improve the fine motor skills of students with visual impairment through piano playing (Dedy, 2018); improvement of fine motor skills through the drill method of independent learning techniques in MDVI children (Suraningsih, 2020); improving children's fine motor skills through playing with used goods (Agustina *et al*., 2018); and improve fine motor skills through the application of flash applications in coloring learning media (Tahel & Ginting, 2018). But, until now there has been no research that discusses the use of latrihal media in improving fine motor skills for students with visual impairment.

This study aims to improve fine motor skills in students with visual impairment through the use of latrihal media. The lecture, demonstration, and assignment methods were used in this study. This study has a subject, namely 1 student with visual impairment at the special needs school, in Sumedang, Indonesia. The results obtained in this study are an increase in fine motor skills in students so that they reach the Minimum Completeness Criteria of 65. In the initial ability, students get a score of 25 with a percentage of 255%. In the final ability, students get a score of 72 with a percentage of 72%, so that students experience an increase in fine motor skills by 47%. Increased research is also indicated by the results of initial observations obtaining a score of 2 in the discipline aspect; a score of 1 on the conscientious aspect; score 1 on the aspect of concentration; and a score of 1 on the participatory aspect to a score of 3 on the discipline aspect; a score of 3 on the conscientious aspect; score 3 on the aspect of concentration; and a score of 3 on the aspect of participation in the final observation. This increase occurred because students got direct experience in practicing fine motor skills using training media. Basically, students with visual impairment have learning needs with direct experience or concrete experience. Latrihal media can be considered by teachers to be used in the learning process of fine motor skills, especially the ability of the fingers of students with

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visual impairment and can be developed for other students. The novelty of this study is (i) the use of latrihal media, and (ii) the research subjects are students with visual impairment.

2. METHODS

2.1. Subject and place of research

The study involved 1 student with visual impairment at the Special needs school, in Sumedang, West Java. This school is a special needs school for students with special needs.

2.2. Research procedure

This study focuses on the case of improving fine motor skills in students with visual impairment through the use of latrihal media. The flow of research carried out includes: (i) planning, (ii) action, (iii) observation (observation), and (iv) reflection.

Figure 1 describes the procedure for the research flow with the Hopkins Model class action research design (Suraningsih, 2020) which is in the form of a spiral. Research begins with planning, action, observation, reflection and then continues with planning, action, observation, reflection if research.

2.3 Activity procedure

Figure 2 describes the procedure for classroom action research activities consisting of the stages of planning, action, observation, and reflection. The details of the activities are as follows: (i) planning includes determining materials, preparing earning program, preparing learning tools and resources, as well as compiling data collection instruments, (ii) actions covering learning activities carried out in 2 cycles, each consisting of from 3 meetings, (iii) observation includes observation activities on discipline, thoroughness, concentration, and student participation in participating in learning using training media, and (iv) reflection, including analyzing or following up on the results of the implementation of learning after being given action. The data that is reflected and analyzed includes test data on learning outcomes and observation data. Reflection activities are the basis for the preparation of action plans in the implementation of the next cycle and research activities.

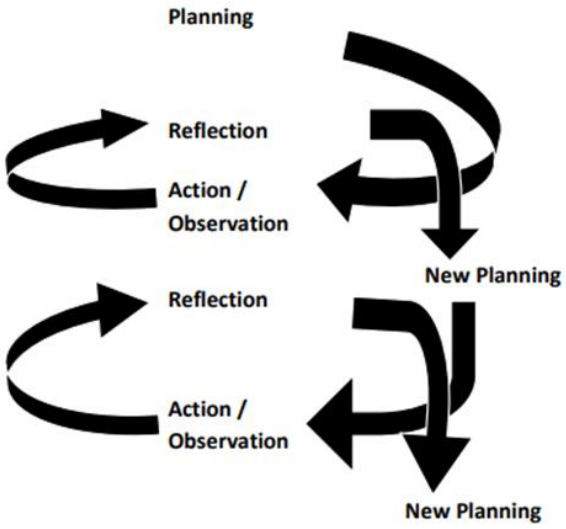

Figure 1. Classroom action research design adopted from the hopkins model image adopted by Suraningsih (2020).

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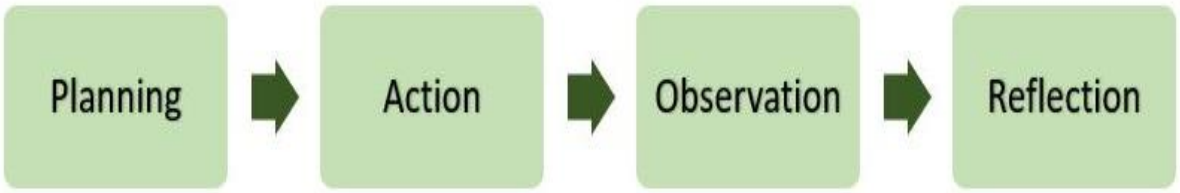

Figure 2. Classroom action research activity procedure.

2.4. Research instruments

The present research activities collected data through learning outcomes tests and observations. This study made instruments in the form of tests and observation sheets. The test of learning outcomes for fine motor skills consists of tests in squeezing, picking up objects, tearing, opening and closing zippers, attaching and removing buttons, and inserting shoelaces. Assessment is done by giving a score of 0-4 on each aspect. Assessment is calculated using the number of weights multiplied by the score then divided by the maximum number of scores. The minimum completeness criteria set is 65. While the observations are carried out by giving a score of 4, a score of 3, a score of 2, and a score of 1 on aspects of discipline, thoroughness, concentration, and participation when carrying out learning.

3. RESULTS AND DISCUSSION

3.1. Student demographics

Table 1 describes the demographics of students' initial abilities, which consist of academic, socio-emotional, language, and motor skills. Student A who has the limited academic ability is shown to have not been able to read braille, has not been able to perform arithmetic operations correctly, and has low scores in several subjects. Student A has a fairly good socio-emotional ability, shown by being able to express emotions that are relatively stable, and able to interact in a limited environment. Student A has a fairly good language ability, indicated by having a diverse vocabulary, being able to express receptive-expressive language, and being able to understand instructions. Student A has limited motor skills as indicated by fine motor skills, especially limited finger coordination, stiff body posture, and limited gross motor skills.

Table 1. Conditions of students' initial ability.

Student's Name	Aspect			
	Academic	Social-emotional	Language	Motor skills
A	1	2	2	1

3.2. Learning Process Activities

The fine motor skill learning activity begins with the researcher preparing the media, saying greetings, and praying together. The activity was continued by conveying the objectives of the material to be discussed and giving apperception. The researcher asked students' experiences about squeezing objects, picking up objects, tearing, opening, and closing zippers, installing and removing buttons, and inserting ropes into holes. Then the researcher gave examples of daily activities that use fine motor coordination, such as unzipping pants and bags.

This study then introduced the learning media to the students. Students have explained the properties of the latrihal media. In the learning of students with visual impairment in understanding an object/object, a person with visual impairment will first be asked to observe

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the object/object using the sense of tactual (hand); every inch and detail of objects/objects are then combined into a concept (Muthmainnah, 2015). Students then orientate the training sheet with our tactile and verbal guidance, starting from feeling the entire section of the exercise sheet, feeling and reading the title of the exercise, and the pages in the form of braille and caution writing, as well as feeling for each part of the exercise. Adjustment of the learning environment, especially tactual, can improve the quality of learning implementation for students with visual impairment (Hermawantoi, 2019).

Figure 3 describes the appearance of the latrihal media used in learning fine motor skills in students with visual impairment. The training media consists of various activity boards to train fine motor skills, especially finger coordination. Exercises using training media start from simple exercises to more complex exercises. The exercise begins with squeezing exercises, picking exercises, tearing exercises, opening and closing zippers, installing and removing buttons, up to the practice of inserting the rope into the hole.

This study explained how to use the media latrihal verbally clearly, both how to practice and the position of the fingers. Students one by one then try to practice the training sheet media exercises repeatedly. This study observed and provided direction and assistance to students when they have difficulty in practicing fine motor skills. We then evaluated to determine the students' fine motor skills after practicing using training media.

At the end of the lesson, the learning activities were concluded, providing feedback and following up on the difficulties experienced by students. The students closed the learning activities by reading prayers and greetings.

3.3. Pretest Posttest Results or Learning Outcomes

Figure 4 describes the results of the learning process for fine motor skills which was carried out 2 times. Learning is done by using the media latrihal. In the beginning, before being given the action (pre-cycle), student A obtained a score of 25%. Pasa cycle 1, student A obtained a score of 54.5%. In cycle 2, students get a score of 72%. The increase from pre-cycle to cycle 1 occurred by 29.5%. The increase in the cycle to cycle 2 occurred by 17.5%. The increase from pre-cycle to cycle 2 occurred by 47%. The increase in motor skills occurs due to the existence of learning media that acts as an intermediary in the learning process to enhance effectiveness and efficiency in achieving learning objectives (Tafonao, 2018).

Figure 3. Display of the media latrihal.

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The use of training media also has an impact on the learning process. The implementation of the fine motor learning process becomes more fun and effective. This is because the use of learning media can provide a more interesting and fun learning atmosphere (Tafonao, 2018). **Figure 5** describes the results of increased research on the learning process of fine motor skills in student with visual impairment. These improvements include aspects of discipline, thoroughness, concentration, and participation. Increased research is also indicated by the results of initial observations obtaining a score of 2 in the discipline aspect; a score of 1 on the conscientious aspect; score 1 on the aspect of concentration; and a score of 1 on the participatory aspect to a score of 3 on the discipline aspect; a score of 3 on the conscientious aspect; score 3 on the aspect of concentration; and a score of 3 on the aspect of participation in the final observation.

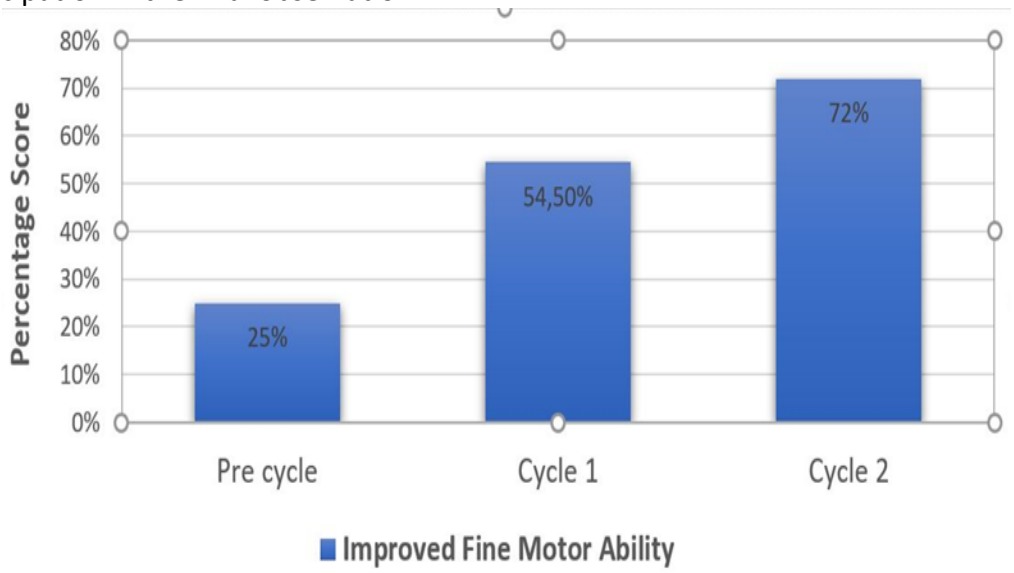

Figure 4. Improved fine motor ability.

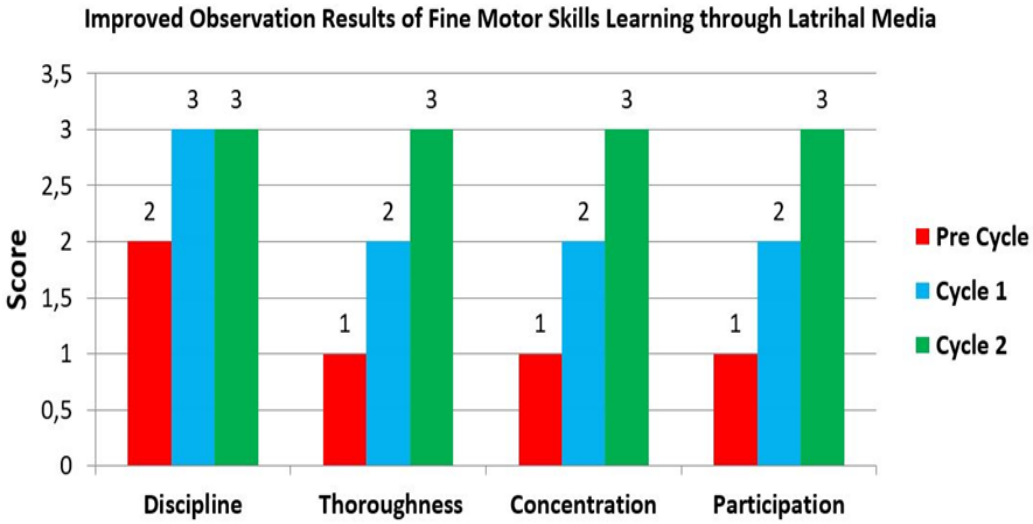

Figure 5. Improved observation results of fine motor skills learning through latrihal media.

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3.4. Analysis of Research Activity Results

In this study, we implemented training media on fine motor learning for students with visual impairment. Preliminary data shows that student A has fine motor skills under the Minimum Completeness Criteria of 65. Students have an initial fine motor ability score of 25% and an average score of 1 to 2 in observing aspects of discipline, thoroughness, concentration, and participation.

The use of training media was carried out in 2 cycles with 3 meetings in each cycle. Learning begins with preliminary activities, core activities, and closing activities. Fine motor learning is carried out using lecture, demonstration, and assignment methods.

The results of the implementation of fine motor skills learning through training media showed an increase in students' fine motor skills from the beginning before giving the action to cycle I and cycle II. Increased fine motor skills by 47% from pre-cycle to cycle 2 also increased the learning process in aspects of discipline, thoroughness, concentration, and participation to score 3 in each aspect.

Implementation of learning in students with visual impairment by considering the conditions and needs of students. Visually impaired students optimize their sense of hearing and tactual. This is comparable to the opinion of Camalia *et al*., (2016) that optimizing the sense of hearing and the sense of tactual can improve the learning outcomes of students with visual impairment. The use of latrihal media affects improving the learning outcomes of fine motor skills. Latrihal media provides a hands-on learning experience as well as optimizing the sense of tactual.

This media is effective because the use of training media can create more enjoyable learning. Learning media also helps students learn each activity more concretely. Learning for students with visual impairment must prioritize concrete experiences (Widodo, 2020). Concrete experience can be done by providing a model of an object, including a model for learning fine motor skills. Learning that is adapted to the conditions and needs of students with visual impairment will optimize the learning process and achieve learning objectives. This is in accordance with the learning principles of students with visual impairment in the form of need for concrete experiences, need for unifying experiences, and need for learning by doing.

4. CONCLUSION

Fine motor skills are abilities that must be taught to student with visual impairment. Fine motor skills are a prerequisite for carrying out daily activities. In learning, student with visual impairment must optimize the senses that are still functioning, namely the sense of hearing and the sense of touch. Learning for the visually impaired must also be oriented to concrete experiences, one of which is the use of training media in fine motor learning. The results showed an increase in fine motor skills in student with visual impairment, so that they reached the Minimum Completeness Criteria (KKM) of 65 and the learning process became more effective and fun. Learning fine motor skills to student with visual impairment who apply the learning principles of need for concrete experiences, need for unifying experiences, and need for learning by doing is expected to increase students' abilities and independence.

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6. AUTHOR NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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