

Supporting Movement Equipment for Learning Basic Locomotor and Manipulative Movements for Students with Special Needs for visual impairment

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Abstract

The background of this research is that with the development in education, the limited infrastructure in special schools will affect the learning process of physical education. Utilizing tools that can be used in learning and modifying games with the true goal of Physical Education Sport and health, namely how to make students move, feel happy and sweat when learning physical education place. This tool consists of basic movements of walking, running, and jumping. The purpose of this research is to produce motion aid products that can make it easier for teachers and students to perform locomotor movements, test the effectiveness of students' use of mobility aids in the movement learning process. This research is a type of development research. Research development (R&D) is the process used to develop and validate educational products. The instruments used in this study include (1) an assessment sheet/questionnaire; (2) research subjects, Data analysis Likert scale is changing the assessment in the form of qualitative to quantitative. This research has produced a mobility aid product with product trial results on a small scale with an average rating score of 4.56 or 91.20% and product trials on a large scale with an average rating score of 4.525 or 90.50%. The conclusions of the research and discussion resulted in a product of Locomotor and Manipulative learning motion aids for the visually impaired which can facilitate students. Suggestions for product development of motion aids for the blind are recommended to adaptive physical education teacher to be used as a tool in learning.

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INTRODUCTION

The existence of physical education plays an important role in the world of education. It is proven that at every level of education, starting from elementary, secondary to tertiary institutions, as well as schools with special needs, physical education is included as one of the materials that must be given. Physical education can be said as the basis for students' physical health and lifelong active style (Placyntia Ngadenan, 2019). The diversity of components related to physical education will not be complete if it is discussed in one discussion. Education that uses physical activity as a means of conveying material in this learning is one of the important subjects for students, because with physical education slowly students can understand and understand how to treat their body members and maintain their physical health. Another important thing, is the content of physical education itself which provides "freedom" to students to learn all things about physical activity in the form of fun games, especially for elementary school education. The basic concepts of physical education and effective physical education learning models need to be understood by those who want to teach physical education (Eva Faridah, 2016).

Utilization of the development of this learning media takes place in all subjects, including the subjects of Physical Education, Sports and Health. For this reason, the quality of Physical and Health Education both from delivery materials, learning materials, teachers, facilities and infrastructure as well as students needs to be reviewed first. Educating, teaching, guiding, directing, training, assessing, and evaluating students at the formal education level is the main task of teachers as professional positions (Dewi & Khotimah, 2020). Physical education applies to all humans, both normal humans and humans with special needs. crew psychological problems, Children with Special Needs (ABK) is another term to replace the word "Exceptional Children" (ALB) which indicates a special disorder in children (Cahyaningrum, 2012) in the form of courage

and confidence to try a new skill in physical education learning can be overcome by applying a game that has been modified that is adapted (Widodo, 2016). Humans are born with a healthy mental condition, but suffer from physical disabilities such as deafness, muteness, blindness, and others. There are also humans who are born with mental retardation or physical disabilities, or also called children with special needs. Adaptive physical education is physical education that has been modified to meet the needs of children with disabilities (Maelani & Sukriadi, 2020).

Children with special needs are children who have abnormalities or are often also called disabilities. Knowledge Development of Children with Disabilities through Physical Education, Sports and Outbound, which concludes that education is a basic need for every human being to ensure that his life is more dignified. One of them is a blind child who has vision problems, it cannot be denied that the sense of sight is very important because it is one of the needs of a person to be able to see the object he is going to see. For this reason, researchers provide modifications to tools for children with visual impairments in the form of tools that they can touch and listen to for learning basic locomotor and manipulative movements. game models for kinesthetic learning in blind children are: (1) find friends; (2) balpin; (3) sound train; (4) sound barrier; (5) zigzag balloons; and (6) cheerful circle, very suitable for kinesthetic and learning characteristics for blind children (Efriyanti & Sumaryanti, 2016). The need for exercise for the visually impaired is needed to maintain health and even for therapy. The results of this study resulted in a stick learning tool (Ahmad Burhanudin, 2015). Children who have abnormalities are basically caused by the non-functioning of some abnormal body organs. Regarding the growth process, it is not much different from normal children, therefore with incomplete organs they have, then children who have special needs or disabilities cannot be equated with other normal children. That is

what is meant by a child with special or extraordinary needs.

Basically, children with special needs have the same rights as other normal children to receive a full education, both formal and informal education. as well as informally. People's attitudes and views towards children with special needs have changed over time, because essentially humans will be aware of the existence and survival in the world and need to socialize with other creatures. That way, it will be realized that all humans have the same rights in developing their abilities, both normal humans and humans with special needs. Children with special needs today also have a place in society, even many children with special needs who have above average abilities, are talented and have achievements compared to other normal children.

METHOD

This research was conducted through several stages in accordance with the stages of research and development according to Borg & Gall (1983: 775) consisting of ten stages of activity: method is data collection, data collection activities are carried out by researchers by visiting the Semarang city education office and conducting interviews related to elementary schools in the city of Semarang which have quality according to the indicators from the researchers to be used as samples in this study.

The second method is that researchers conduct interviews and field observations to several teachers, students, and parents. Regarding their needs and responses, this was done in relation to the needs analysis of the research subjects, in addition to using interviews, the researchers also distributed questionnaires to physical education teachers. The third stage is planning, which is done by researchers is to develop a research plan that will be carried out by getting directions from experts and supervisors. The fourth stage is the researcher makes an initial concept in the form of a product draft that will be developed. In this

study, the researcher made a draft or initial concept of the application in coordination with media experts and supervisors. The product in this initial draft is a rough description of the mobility aid.

Based on the results obtained in the previous stage, the researcher designed a product design draft that was in accordance with the potential and existing problems. The preparation of the product design draft consists of several stages. First, the researcher makes a the preparation of design success indicators is with compiling indicators the success of the design carried out by the researcher himself. Then proceed with product design. Product design is divided into 4 steps. These four steps include the design of tool drawings, materials, sizes, and procedures for use. For design drawing tools use manual drawings.

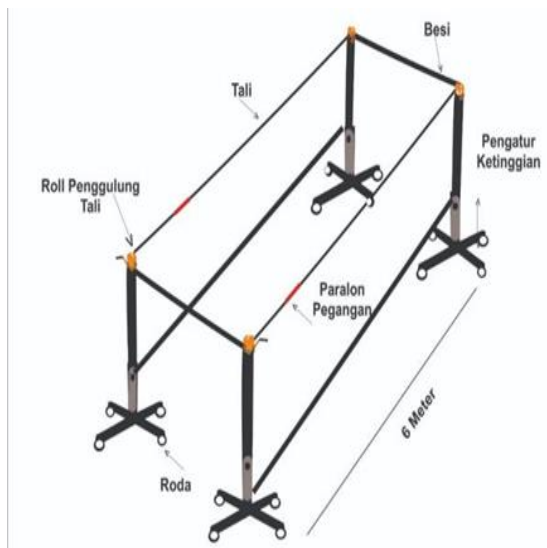
Evaluation is the person who does the evaluation work. Who can be called the subject of evaluation for each test, is determined by a rule of division of duties or applicable provisions (Habibie, 2016). Learning experts and media experts who become validators in this research are Mr. Edi Djoko Harjanto, S.Pd. and Mahendra Fery Wibowo, A.Ma. a physical education teacher.

In the initial trial, the researcher tested the draft or initial product using the school. The approach was done by interviewing and distributing questionnaires about the teacher's responses. The questionnaire used for the expert is in the form of a number of questions regarding aspects that must be assessed for feasibility. Indicator Appropriate tool used for locomotor movement exercises, Provides effectiveness in the learning process, Assists teachers in the learning process, Makes it easier for children to move, Stimulates children to move more actively. The evaluation range starts from "very poor", "poor", "good enough", "good", and "very good" by giving "√". The subject of the expert trial in question is a lecturer/expert who usually handles learning media or learning aids. Validation is done by using a questionnaire about the appearance of the tool design which is given to experts who usually assess a learning

media/tool. The expert who became the validator in this study was Mahendra Fery Wibowo, A.Ma.

The revision stage of the trial results is that the results of the initial trial are brought to the expert complete with the developed model assessment instrument, to be assessed by experts (learning experts) and (media experts).

The results of the responses from the research subjects were discussed and observed by experts and then received revisions. Then the researchers made corrections and evaluations of the tools by always communicating with media experts and supervisors. Until the product of the revised phase II is formed. After getting an evaluation and revision from the expert, the researcher proceeded to the field trial stage. This trial will use the school. The approach taken by the researcher is the same, namely by interviewing and distributing questionnaires. This field trial will be carried out for 2 weeks. The next stage is to re-test the revised product, this time on a larger scale.



Picture 1. Product Design Supporting Movement Equipment for Learning Basic Locomotor and Manipulative

The stage after being tested on a large scale, is the final product revision, namely the results of the last field trial are brought and reported to the expert for input and the hope is that the input and improvements carried out at

this stage will produce results, namely the creation of an assessment model product in the form of motion aids. The final stage is how this tool is applied in real conditions and runs properly according to the rules of use in the product itself.

RESULTS AND DISCUSSION

The product Supporting Movement Equipment for Learning Basic Locomotor and Manipulative Movements for Students with Special Needs for visual impairment. The blind movement aid product can be operated by everyone, especially Adaptive Physical Education teachers. The workings of the tool is to provide a grip in the form of parallel bars. The rope given the pralon is linked with parallel bars. The first step to using this tool is to adjust the height of the tool according to the child's condition, adjust the distance between the two parallel bars according to the length of the rope, connect the two ropes to the hook and connect the barrier pralon, pull the parallel bars so that the rope is not loose and not too tight because it can limit movement child, Press the brake wheel down so that the tool does not shift easily, The tool is ready to use, for each child to make a movement, just remove the hook.

How to use the tool to run, namely on the inside of the tool, the child holds the rope and safety with both hands, then the child can run forward.



Picture 2. Movement Equipment for Learning Basic Locomotor

How to use the tool to jump is on the inside of the tool, the child holds the rope and safety with both hands, then the child can jump forward or backward.



Picture 3. Movement Equipment for Learning Basic Manipulative

How to use the tool to move sideways, namely on the inside of the tool, the child holds the rope and safety on only one side, then the child can move to the right or left side.

Amount 10 children did exercises on the resulting product, namely a locomotor and manipulative learning motion aid for the blind twice. From 2 times the exercise showed an increase.



Picture 3. Final Product

The results of the validation of material experts I and material experts II were obtained

from the aspect of material quality and content with a percentage of material experts I at stage I 67% and stage II 90% and from material experts II at stage I 60% and stage II 89%. In a small-scale trial, the score obtained from the trainer was in the very good category with an average percentage of 91.20%. The results of large-scale product testing obtained a value in the very good category with an average percentage of 90.50%.

Table 1. Exercise Results After Using The Product

Movement	Results		
	Pre-Test	Final Test	Percentage
Street	30	38	16
Run	19	23	8
Jump	10	25	30
Side Movement	10	17	15

Effectiveness Test Results A total of 10 children performed Locomotor and Manipulative exercises using motion aids twice. Based on these results, this product has the criteria of "can be used". Effective learning is the use of appropriate learning methods and media in accordance with the subject being conveyed by a teacher to students (Sukiyandari, 2014). A supportive environment is also a factor that needs to be considered, and in the learning process teachers should apply the democratic type of leadership (Diana Darmawati et al., 2017). Thus the results of product trials on a small scale with an average rating score of 4.56 or 91.20% are included in the "very good" category, meaning that they can be used. The results of product trials on a large scale with an average rating score of 4.525 or 90.50% are included in the "very good" category, meaning that it can be used. The product of this research is not much different from the product that has been produced by previous research. There are similarities in content in several specifications. Every human being has the right to have the opportunity to improve the quality of his life, both normal humans and those with special needs, so that to achieve optimal potential he requires special education to meet the

educational needs of children with special needs (Yuniartik et al., 2017). Development This tool is designed and produced into an initial product in the form of a locomotor learning aid. In addition to changing student behavior, physical activity always strives to achieve educational goals, namely improving motor skills and functional values that include cognitive, affective, and psychomotor aspects (Muhammad Ripki Setiawan, Soekardi, 2015). The development process is through research and development procedures, namely planning, production and evaluation. The product is developed with the help of an expert, i.e. someone who has mastered the technique and learning. The product for the visually impaired mobility aid has been revised twice from validators, media experts, and learning experts, some of the advantages and disadvantages of the product.

CONCLUSION

Locomotor and Manipulative learning tool product for the visually impaired can facilitate students in doing Locomotor and Manipulative learning in schools and can be applied by student teachers in teaching blind students at school. this product has the criteria of "can be used", it can be said that the product is effective to use.

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