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Development of Models of Learning Basic Motoric Skills in Sports for Deaf Children

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Abstract

The problem in this study is that there is no varied learning model in sports learning, especially to improve the motor skills of deaf students. This study aims to create a basic movement learning model for sports motor skills in deaf students. This study uses the ADDIE method, in ADDIE research 5 stages namely analysis, design, model development, implementation, and evaluation. The analysis technique used is descriptive analysis. The results of the study are: a) The development of a basic motion learning model for sports motor skills in deaf students is feasible and can be used. b) The product of basic motion learning models for sports motor skills for deaf students has been tested and proven to improve the motor skills of deaf children. The development of basic movement learning models for sports skills for deaf students has a 100% ease of implementation, 86.3% clarity of implementation, 100% interest, 81.8% safety in implementation and 86.3% of equipment used.

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INTRODUCTION

Physical education is an integral part of education that focuses on the physical, healthy lifestyle, mental and social growth and development. The function of physical education is to prioritize physical activity and healthy living habits in daily life which have an important role in fostering individual and group development in supporting harmonious and balanced physical, mental, social and emotional growth and development. Physical education is one part of the curriculum taught in schools at every level of education in Indonesia. According to (A. W. Kurniawan & Tangkudung, 2017) physical education is a learning process that refers to physical activity in order to improve students' skills in affective, psychomotor, social and cognitive aspects.

Physical education also touches all circles, both normal and special needs students. Physical education for children with special needs or often referred to as adaptive physical education, adaptive physical education is a physical education system that also aims to provide comprehensive services and is designed to find and solve problems in the psychomotor domain. Psychomotor problems as a result of limited sensorimotor abilities, limitations in learning abilities.

Adaptive physical education provides learning to students who have limitations. Hearing limitation or disability is one of the services provided in adaptive physical education. (Nirmaladevi & Raja 2018) say deaf is a state of hearing loss, deafness, hard of hearing and hearing loss are various terms used for deafness as a condition of inability to hear either partial or total impairment. Deafness is a term used to describe a person's hearing loss. In general, the deaf are categorized as hard of hearing and deaf, as revealed Wibowo & Sopingi, (2018) "Deafness is someone who experiences obstacles or disturbances in the sense of hearing". Based on the opinion above, deafness is a condition of deficiency or loss of someone's ability to hear caused by damage to hearing function so that they have barriers to hearing the sounds of language in everyday life. (Dwinata, et al, 2020) using the term hearing impairment relating to disturbances in power listen to someone, regardless of their nature, causative factors, and degree of disability.

There are several classifications or levels of deafness, F.Ririn, (2012) suggested that the deaf are classified as follows: a) 0-26 dB, which indicates that they still have normal hearing. b) 27-40 dB, difficulty hearing distant sounds, requires a strategically located seat and requires speech therapy (mildly deaf). c) 41-55 dB, i.e. understand conversational language, cannot participate in class discussions, requires hearing aids and speech therapy with moderate hearing loss). d) 56-70 dB, i.e. can only hear sounds from nearby directions, still has residual hearing to learn language but with the use of assistive devices (severe severe hearing loss). e) 71-90 dB, i.e. can only hear very close sounds, requires intensive special education services, and requires hearing aids (severely deaf). f) 91 dB and above, that is aware of the presence of sound and vibration, depending a lot on vision, to receive information (very severe deafness). Sport is a tool used for the prevention and treatment of certain diseases, and specifically for children with sports disabilities, it can reduce social inequality in society. (Steckling et al., 2020) Regular exercise is an effective way of preventing and treating several diseases.” In addition, sports also have a very good influence on children with disabilities, where sports for disabilities can bridge social inequalities and function to increase "positive subjectivity" and "a sense of personal empowerment." (Belousov, (2016) “said "Sport is an effective vehicle for creating disability awareness among young

people". Sport is an effective vehicle for creating disability awareness among young people. Deaf children can take part in various kinds of sports well, this is because deaf children have limitations in communicating, not motor weaknesses.

Adaptive physical education learning has so far been carried out on deaf students with regard to the basic motor movements that do not have variations, there is no adjustment in the level of difficulty according to the characteristics of the child, so that students feel bored, there are also no challenges, and they have not been able to improve the movement skills of deaf children properly. Every living creature moves, so do humans move in an effort to carry out various activities in living their daily lives. Learning motion can be interpreted as changes in place, position, speed of the body or parts of the human body that occur in a dimension of space and time and can be observed objectively. Basic movements are a movement pattern that underlies a movement starting from simple movement patterns to complex movement patterns or from easy movement patterns to difficult movement patterns. According to (Bahktiar, 2015) said that basic movement is a basic movement pattern that is used to learn and develop technical skills in a sport as well as in carrying out daily physical activities. Some of the basic movements carried out by children in life activities such as: moving slowly, crawling, walking, running and jumping.

Basic movements consist of three aspects, namely basic non-locomotor movements (rotating the body), locomotor movements (walking, running, jumping) and basic manipulative movements (throwing, catching). According to (Gallahue & Ozmun 2006) mention the categories of movement, namely (1) categories of locomotor stabilization movements such as turning the waist, turning in place, pushing, pulling; (2) categories of locomotor movements such as walking, running, various kinds of jumping, and (3) categories of manipulation movements such as throwing, catching, kicking, hitting (gross motor) and sewing, cutting, typing, drawing, coloring, various forms of paper folding (fine motor).

Locomotor movements are basic movements of various skills that really need practice so that students can do them properly and correctly (Bozgeyikli et al., 2016). Locomotor movement is interpreted as a movement that causes a change of place (Hamzah et al., 2020).

Previous research (Setyo & Pujianto, 2015) showed the results that the learning model of basic running movements through the game Throw and Run can be used for deaf students at SDLB Negeri Semarang. This shows that the basic movement learning model can be developed for deaf students, but this research only refers to locomotor basic movements, namely running. This research will develop basic motor movement models ranging from the simplest to the most complex, such as non-locomotor, locomotor and manipulative basic movements. Through this model it is hoped that it can optimally develop the physical growth and skills of deaf children.

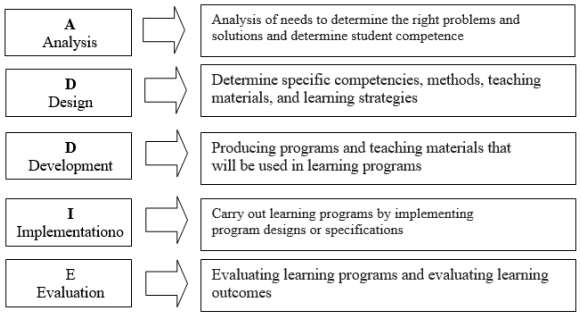
This study aims to create a learning model for basic motor skills in deaf students. The specific objective of this research is to produce a basic movement learning model for motor sports skills for deaf students.

METHODS

This research is a development research that refers to the ADDIE model. The ADDIE research steps go through 5 phases by adapting the ADDIE research and development model (Analysis, Design, Development, Implementation and Evaluation). The choice of this model is because the research steps are in accordance with the research objectives, the steps are

easy, do not require a long time, and have clear goals.

The ADDIE model steps are as follows:



Picture **1.** Model ADDIE , (Benny A, 2014)

Needs analysis is used to obtain information data which is carried out with initial observations in the form of observations. Design, namely the activity of making a design of a basic movement learning model for sports for deaf students. Development, namely making the initial product, namely developing basic movement learning models for motor skills as many as 22 learning models consisting of 5 non-locomotor learning models, 11 learning models for locomotor movements, and 6 learning models for manipulative movements. Implementation is carrying out the model that has been made to the research subject and finally Evaluation is the activity of evaluating the basic movement learning model of sports motor skills that has been made.

Participants

The subjects of the study were 8 moderate and severe deaf students consisting of 3 people from Sehati SLB Karimun Regency and 5 people from Public SLB 1 Karimun Regency.

Sampling Procedures

The subject taking technique in this study used purposive sampling, Sugiyono, (2015) "Purposive Sampling is a sampling technique with certain considerations". Where researchers have considered various kinds of things that are needed during research as follows: a) With the limitations of existing subjects, the subjects in this study are deaf children at least 5 years old. b) Deaf children with a classification of 41 dB moderate to 91 dB or very severe hearing loss, c) male students are deaf due to differences in physical condition.

Procedures

In terms of the purpose of this research is to produce or develop products, this research can be classified as development research, development research is research that is used to create new products or develop existing products based on analysis of needs in the field. The data collection technique is using the ADDIE model step, namely Preliminary Research by conducting a needs analysis through surveys and observations. The design or design of the model is to make a basic movement learning model for motor skills including non-locomotor movements, locomotor movements and manipulative movements. Development, namely developing a basic motion learning model for sports for deaf children. Implementation is to try out the development of a sports basic motion model for deaf children. Then after the product training model is complete, the next stage is to carry out an evaluation. This evaluation is carried out in order to improve the learning model that has been made to produce a perfect product and is ready to be used as children's learning material.

Design or Data Analysis

The data analysis technique used in this research is descriptive analysis to see the percentage gain from the score obtained by the formula :

$$\Sigma = \frac{\text{maximum score that can be obtained}}{\text{maximum score}} \text{ X } 100\%$$

RESULTS

The results of the study are that the basic movement learning model for motor sports skills for deaf students consists of non-locomotor movements, locomotor movements and manipulative movements. The results of this study can be a guide for adaptive sports teachers in providing learning materials for basic sports movements. The results of this development research are made in several steps, namely as follows:

a) Analysis

Analysis of needs in research on the development of basic movement models for deaf students to analyze how important it is to develop basic movement learning models for deaf students.

The results of the needs analysis in this study used a questionnaire to deaf students and interviews with SLB teachers. The results of the needs analysis show that: (1) the teacher has provided basic movement material for sports, (2) the lack of facilities and infrastructure is an obstacle for teachers and students in learning, (3) in participating in learning there are students who are active and some are not active (4) the learning model applied by the teacher has not varied, (5) the learning implemented by the teacher is less attractive to students, (6) adaptive physical education teachers in SLB have never developed learning models and media in basic movement learning, (7) teachers and students with hearing impairments requires the development of basic motion learning models for sports that are varied and easy to do.

Deaf children are children who experience a state of hearing loss which includes all gradations, whether mild, moderate, or severe, which, even though they have been given hearing aids, still have an impact on language and communication barriers in an auditive manner so that in the learning process they require special education services. The characteristics of deaf children are very complex and different from one another. In plain view the characteristics of deaf children are the same as normal children in general, it's just that both have differences in language and communication skills. Tri, (2012) describe the characteristics of deaf students in terms of: intelligence, language and speech: a) Characteristics in terms of intelligence. In general, deaf students have normal and average intelligence like students in general. b) Characteristics in terms of language and speech. In this aspect, deaf students have abilities below students in general because this ability is closely related to hearing ability. Deaf children can take part in various kinds of sports well, this is because deaf children have limitations in communicating, not motor weaknesses, this is in accordance with the opinion Dummer et al., (2018) "Deafness is primarily a disability of communication rather than a disability of motor skill performance" Deaf children primarily have a disability in communication rather than a disability in motor skills.

b) Design

The researcher conducts the research design to be carried out, determines the time of the research, the research implementing officers and determines the material for the basic sports movements to be carried out related to non-locomotor movements, locomotor movements and manipulative movements. To make it more clear, it can be seen in the table below:

Table 1. Variation of learning models

No	Basic Sports Movement	Learning model
1	Non Locomotor	5 model variations
2	Locomotor	11 model variations
3	Manipulative	6 model variations

c) Development

The next step is to develop a basic motion learning model for sports for deaf children, totaling 22 variations of learning models consisting of non-locomotor movements, locomotor movements and manipulative movements. Then validated by 3 experts. Following are the results of the basic motion learning model for sports for deaf children that have been validated.

Table 2. Expert validation of the learning model

No	Basic Sports Movement	Learning model	Information
1	Non Locomotor	Turn your body left and right	Proper to use
		Two hands up two down	Proper to use
		Touch the toes with alternating hands	Proper to use
		Bend down, squat and stand	Proper to use
		Hands up and down beside the body	Proper to use
2	Locomotor	walk slowly	Proper to use
		Walk on one leg	Proper to use
		Walk imitating a goose	Proper to use
		Walk imitating Frog	Proper to use
		Run forward	Proper to use
		Lari zig-Run	Proper to use
		backwards Run	Proper to use
		Jump forward	Proper to use
		Jump forward zigzag	Proper to use
		Jump to the left	Proper to use
		Jump to the right	Proper to use
3	Manipulative	Throw the ball	Proper to use
		Throwing the ball while walking	Proper to use
		Throw the ball by moving sideways left-right	Proper to use
		Catch the ball	Proper to use
		Catch the ball on the floor	Proper to use
		Catching the ball moving left-right side	Proper to use

A. Implementation

The development of a basic motion learning model for deaf children was tested on deaf students involving 8 research subjects. The stages of the model feasibility test involve several experts who have competence in their fields according to the variables of this study. The results of the feasibility test of the basic motion learning model for deaf students' sports motor skills that have been designed can be seen in the next section, then the next step is to validate expert judgment in related fields, including:

1) Expert Judgment 1 :
   Dr. I Ketut Hendri Wijaya K, M.Pd
2) Expert Judgment 2 :
   Dr. Andre Igoresky.,M.Pd
3) Expert Judgment 3 :
   Hilda Oktri Yeni, S.Pd., M.Pd

From the results of the trial recapitulation as a whole the basic movement learning model for deaf students can be concluded that it can be applied and used. Even so, practically in the implementation of product development there are still some usage records. As for some notes on the use that has been revised are as follows:

a. The application of a model that requires a large area/place must be handled with care, so that the implementation of the exercise can be carried out on a large scale.
b. Instructions for implementing the basic sports movement learning model for deaf

students must be made clear so that it is easy to understand.

c. The purpose of each basic sports movement learning model for deaf students must be explained in detail.
d. Tools and materials used must prioritize security and safety.
e. Learning models are sorted from easy to difficult.

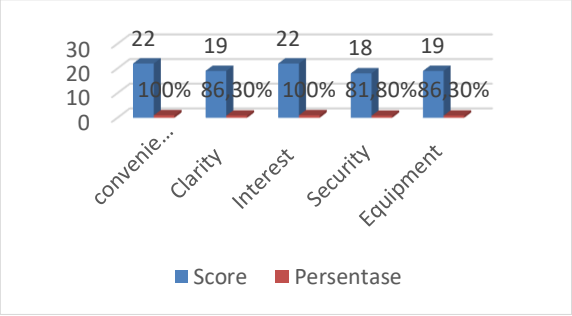
B. Evaluation

After carrying out the implementation in the form of a trial, an evaluation was then carried out on the implementation of the basic movement learning model for sports for deaf students. Based on the test results data, the following data is obtained:

Table 3. Evaluation of the learning model

No	Indicator	Score	Persentase	Information
1	convenience	22	100%	Proper to use
2	Clarity	19	86,3%	Proper to use
3	Interest	22	100%	Proper to use
4	Security	18	81,8%	Proper to use
5	Equipment	19	86,3%	Proper to use

In order to make it clearer the data from the trial results of the implementation of the basic movement learning model for sports in deaf students can be seen in the bar chart below:



Picture **2.** Graphic

DISCUSSION

Based on all the data obtained from the results of expert validation and through several stages of validation, it can be concluded that the basic movement learning model for sports for deaf students has an ease of implementation of 100%, clarity of implementation of 86.3%, interest of 100%, safety in implementation of 81 .8% and the equipment used is 86.3%. The overall development of the model was obtained from lecturers with disabilities, movement experts, and learning experts. stated that the development of basic motion learning models for sports motor skills in deaf children was appropriate and feasible to use. So researchers can draw conclusions 22 models of basic movement learning motor sports skills for deaf students can be applied. Looking at the results of research on the development of sports basic motion learning models for deaf students, especially in non-locomotor, locomotor and manipulative movement material can improve movement skills for everyday life.

The advantages of this model are that it is easy to do anywhere, either independently or under the guidance of a teacher or trainer, this model does not require expensive costs and is adapted to the needs of deaf children. This model is recommended for young deaf children with low, moderate to severe categories. This basic movement learning model for sports motor skills can be an alternative for teachers in implementing physical education learning for deaf children related to basic movements such as locomotor, non-locomotor and manipulative movements.

CONCLUSIONS

From the research results, it can be concluded that:

a) The development of basic motion learning models for sports motor skills for deaf students is feasible and can be used.

b) The product of the basic motion learning model for sports motor skills for deaf students, has been tested proven to be able to improve the motor skills of deaf children.

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