

# *Fundamental Motor Skills Based on Games for Children with Moderate Mental Disabilities*

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This research focused on 1) developing a teaching model for fundamental motor skills based on games for children with moderate mental disabilities and 2) obtaining empirical data about the effectiveness of the results of this model. This is a research and development project. The sample for this research consisted of children with moderate mental disabilities from three primary schools in Palembang, Indonesia: SD SLBC Karya Ibu, SD SLBC YPAC, and SD SLBB Pembina. The results of this study showed that there were 88 basic motor skill variants that need to be taught. The results of the small group test of this model showed the product produced can already be applied by children with moderate mental disabilities, however, they still need guidance. The results of the large scale tests showed that this product can be used, but with the instruction of a teacher. Finally, effectiveness tests showed that there was significant improvement in motor skill abilities (locomotive, non-locomotive, and manipulative) in children with moderate mental disabilities. Based on this research, it is evident that this product can be fruitfully used as a method to increase fundamental motor skills ability in children with moderate mental disabilities.

**Keywords** fundamental motor skills games mental disabilities

## I. INTRODUCTION

Every man wants a perfect life, a good life, and it is the hope and desire for every human beings. Likewise for married couples who were waiting for the birth of the fruit of his heart, certainly have desires, dreams and hopes of the very large if the fruit of his heart was born in perfect condition either physical or mental.

Children in need special mental retardation, mental retardation seems to now be a scary thing for any parent towards the fruit of his heart. What exactly is that mental retardation? Mental retardation is a disorder that includes intellectual functions that sluggish/below average IQ i.e. 70 down the raw test match. Mental retardation is typically differentiated into 4:1) slow mental retardation (IQ 55-69), 2) moderate mental retardation (IQ 40-54), 3) hard mental retardation (IQ 20-39), 4) very hard mental retardation (IQ under 20).

The results of the observation that has researchers to student mental retardation (done on 3-15 December 2014 in SD SLBC Karya Ibu, the cornerstone of electoral observation in SD SLBC Karya Ibu because one of the many schools that have students mental retardation) obtained his physical development that do not experience interference, but have difficulty in learning new things especially related developments in motion. This usually looks older move still looks stiff and less proportionally. Besides mental retardation is often seen children's behaviour and interaction are not uncommon. With such a condition is found then required an appropriate measures to assist the growth and development of children is to be able to grow like normal children, so that these kids can meet its activities on its own.

Departing from the observation result then the researchers did the study of basic motion capabilities of children with moderate mental retardation Denver II as a reference guide in addition also now spread to the researcher and teacher interviews against the parents of students. From the results of the study further can be drawn the conclusion that the motion capabilities of basic child mental retardation is experiencing interference, whereas the basic motion is very important for the sustainability of more complex motion capabilities so that it can bolster its activities in daily life. Various shapes and the pattern of movement is obtained by children is basic in the entered the stages of its development, the development-related knowledge, values and attitudes as well as the skills of the motion itself. Therefore, children should be given sufficient opportunity to try doing various forms of movement so that they gain various experiences of motion.

Departing from the findings that occur in the field, then researchers would like to develop a model of learning basic motion-based games for children with mental retardation are oriented on the development of basic motion capabilities. The goal of this activity is not only can be used in learning but can also be used as one motion activity outside of learning.

## II. THEORETICAL STUDY

### A. The Concept Model Development

The model is a representation, formalisasi or visualization. The model can also show the whole picture of something that will be carried out and the results will be achieved. According to Benny's personal model is something that describes a pattern of thinking. A model usually describes the whole interrelated concepts. The model can be considered as an attempt to sexually objectify a theory and is an analogy and a representation of variables contained in the theory.

In the development of the model there are some models that are often used in research development (Research and Development). Here are some frequently used models, including namely (1) the development of dick and carey model, (2) model development meurut KEMP, (3) instructional development model (MPI), (4) the ADDIE model of development, (5) model development of IDI, (6) ASSURE development models, (7) model development 4D, (8) development model sugiyono, and (9) model development of Borg and Gall.

Departing from the theory and some of the models that have been described so researchers chose the design of the development model of the Borg and the Gall consists of 10 stages. As for the reason researchers choose a model from the Borg and Gall are as follows: (1) being able to address the real and urgent needs through the development of solutions of ats a problem while generating knowledge that can be used in the dating; (2) able to produce a product/model which has a value of high, due to validation through a series of field trials and validated by experts; (3) encourage the innovation process/continuous models so hopefully will always be found models/products are always the actual with the demands of the present; and (4) is the liaison between the theoretical and research field.

### B. The Concept Model Developed

Basic motion consists of the motion of the locomotor, nonlokomotor and manipulative. A very basic motion benting for sustainability motion is capable of the more complex so that the child can support its activities daily. Therefore, the children especially children should be given the opportunity of being mental retardation which pretty much to do various forms of movement so that they gain the experience of motion.

At school, teachers played an important role in providing the basic motion experience through learning that is adaptive penjas learning. Learning basic motions that kids do moderate mental retardation must be drawn up and implemented appropriately and correctly in accordance with the objectives to be achieved. Implementation of basic motion learning in ways is not exactly going to affect a child's development, either psychological or physiological. As it is said to be Abdul Majid (2005:24) that the development of learning is a process of designing learning logically and systematically in order to define everything that will be implemented in the process of learning activities with attention to potential and competence of students.

The concept of the model developed in this study is a development to improve children's mental retardation basic motions. This development is to support the learning process of motion which is better for the child's mental retardation arebasedon the need for them. In research and development, the end result of this idea is poured in the form of CDs and books, hereinafter termed development model of learning basic motion based games. The model created by the researchers contains a variation of the model that easy, interesting, fun and value for their therapists (mental retardation children are). In other words, the elements of play are incorporated in this model, because in addition to expected to help the development of physical, intellectual, emotional, social optimally also reduce boredom children towards activities that are carried out.

Depart from these researchers developed a model of learning basic motions where the models there is the element of play and worth of therapy to help improve basicmotion for mental retardation is being named a model of learning basic motion based games. The goal of this model can be used by the teacher in the learning process of physical education in order to help the children get to experience a complex motion and can help improve the basic motion of the child's mental retardation.

### C. Mental Retardation Children

Mental retardation is a term used to describe children who have intellectual ability under the average. In the library foreign language used the terms mental retardation, mentally retarded, mental deficiency, mental defective, and others. In Indonesia the term mental retardation is called the weak of mind, mental retarded, dumb, stupid or pander, idiotic, oligofrenia, capable learners, able to rehearse, and full dependence.

A classification of child mental retardation in General is based on the extent of intelegensinya, consisting of retardation type light, medium type, type and weight. The ability of most mental retardation was children's intelligence which measured by tests of Stanford Binet and Weschler Scales (WISC). The following classification is based on the degree of mental retardation from Blake in Somantri Sutjihati (2009:108) is:

Table I. Classification of Child With Mental Retardation

Level	IQ	
	StanfortBinet	SkalaWeschler
Slow	68-52	69-55
Moderate	51-36	54-40
Hard	35-20	39-25
Very Hard	<19	< 24

### D. Fundamental Motor Skill

The basic motion of humans continues to evolve in accordance with the growth, experience, adaptability and maturity of an individual. Gallahue (2012:45-46) say that divide motor ability in three categories, namely (1) the locomotor abilities, (2) non locomotor abilities, and (3) the ability of the manipulative. According to the Department of

Education says that Fundamental Movement Skills (2013:15) say that are movement patterns that involve different body parts such as the legs, arms, trunk and head, and include such skills as running, hopping, catching, throwing, striking and balancing. They are the foundation movements or precursor patterns to the more specialised, complex skills used in play, games, sports, dance, gymnastics, outdoor education and physical recreation activities.”

They also divide the basic motion into 3 parts, namely (1) Body management skills involve balancing the body in stillness and in motion. Examples are: static and dynamic balancing, rolling, stopping, landing, bending, stretching, twisting, turning, swinging, and climbing. (2) Locomotor skills involve transporting the body in any direction from one point to another. Examples are: crawling, walking, running, hopping, leaping, jumping, galloping, skipping, dodging, and swimming dan (3) Object control skills require controlling implements (for example, bats, racquets or hoops) or objects (such as balls) either by hand or foot. Examples are: throwing, catching, kicking, striking, bouncing, and dribbling.”

**E. Motor**

Motor ability is divided into two gross motor and fine motor. According to Fitts and Posner's in Edward (2011:251) learning of motion consists of three stages, namely the cognitive stage, the associative and automation .Study of motion is essentially a learning process that has the aim to develop various skills the optimal motion effectively and efficiently. Magil (2011:3) namely that motor learning the study of the acquisition of motor skills, the performance enhancement of learned of highly experienced motor skills, or the reacquisition of skill that are difficult to perform or cannot be performed because of injury, disease and the like. of interest are the behavioral and/or neurological changes that occur as a person learns a motor skill and the variables that influence those changes.”

**F. Learning**

The term contrasts with the term learning teaching. According Siregar (2010:12) said that teaching oriented to teacher (teacher-centered) while learning oriented learners (student-centered). Our educational activities that used to be more oriented to "teach" (teachers more instrumental) have moved to the concept of "" learning (planning the activities of the orientation to the students so that learning occurs in himself).

Learning in the education of mental retardation is essentially to provide a learning experience to them in accordance with the problems and needs of each individual. Through the learning process individually (what are their needs) was expected son ofmental retardation will learn optimally according to the characteristics and capacitydevelopment.Learning for mental retardation ideally are individualized but generally it is still considered to be difficult to do by some teachers. The difficulties associated with two things, namely the difficulty of putting together a learning programme in accordance with the "needs" of each

learner and the difficulty of finding forms of intervention that are considered to fit in with the "needs of the learners.

**G. Play**

Play does not distinguish who is involved in the game including the children in needspecial child-like mental retardation. But the play that sets it apart is the charge given to mental retardation. Prasedio in Efendi (2006:105) said that games that can be given to most mental retardation have no charge, among others, have different therapeutic value as well as the figure of a given game is not too difficult to digest the son of mental retardation.

According Chusairi (2005:9) said that play can be used as a therapeutic medium, as there are a number of reasons, namely: (1) the play invites and let the children communicate feelings effectively becomesa thing that reasonable, (2) plays allow adults to enter into the world of kids and shows the children that they are appreciated and accepted. (3) Observations through play are helpful to understand children better.

**III. RESEARCH METHODOLOGY**

The design of the study the researchers refer to the model development (research and development) Borg and Gall which consists of ten steps. The steps are (1) needs analysis and field observation, (2) the collection of information (3) the making of the initial product, (4) expert evaluation, revision (5), (6) small group trials using 12 subject, (7) revision (8) testing a large group using 36 subjects, (9) the revision of the final product and (10) Desiminasi.

The following development steps Borg and Gall (203:590)

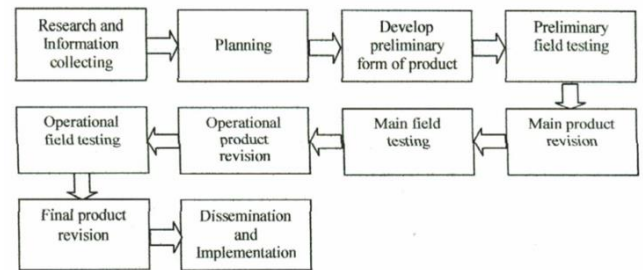


Figure1 : Research and Development Borg and Gall

The subject of this study are students from elementary SD SLBC KaryaIbu, SD SLBC YPAC and SDSLBC Pembina in Palembang taken using random sampling techniques.The type of data that is generated in the form of quantitative data and qualitative data. Qualitative data retrieved from data the results of the review the advice and input of experts. Quantitative data quantitative analysis techniques using descriptive statistics and percentage of T test on the test of the effectiveness of the product.

The subject is involved in this development are as follows: (1) subject as early research (need analysis) performed the now spread to 6 teachers, parents performed the now spread to 6 orang teachers, parents 10 against interview students and

observation 20 students (2) the subject of the evaluation of Experts consists of 3 person expert physical education, 3 person expert motor skill (3) the subject of the trial is small group of 12 students SLBC KaryaIbu ,(4) the subject of the trial of a large group of 36 students in SD SLBC KaryaIbu, SD SLBC YPAC and SD SLBB Pembina (5) subject for test the effectiveness of 36 students in SD SLBC KaryaIbu, SD SLBC YPAC and SD SLBC Pembina.

#### IV. RESEARCH RESULTS AND DISCUSSION RESULTS

Research from need assessment, is:

No	Procedur of Development	Result
1.	Need Assesment	
a.	Question form teacher	<ol style="list-style-type: none"> <li>1) Of 6 teachers physical education only 1 person have a backgrounds teacher physical education.</li> <li>2) lack of upgrading and training for penjas teachers.</li> <li>3) Teachers to teach the basic motion motor materials.</li> <li>4) basic motion) the ability of child mental retardation is experiencing interference.</li> <li>5) Teacher reveals that the basic motion of material is very important and beneficialfor children to mental retardation.</li> <li>6) Item/charge play should be included in the submission material.</li> <li>7) The obstacles teachers in the delivery of the material are less reference material so that it looks less enthusiastic.</li> <li>8) All teachers agree with the development of models for the delivery of the material to the motion base.</li> </ol>
b.	Observation to student(use a denver II)	<ol style="list-style-type: none"> <li>1) Obtained that generally the basic motion ability children are experiencing mental retardation disorder/constraints, these things look as they do learning activity.</li> <li>2) Students sometimes look lazy to move during learning.</li> <li>3) Students quickly feel tired towards it s activities.</li> </ol>
c.	Interview to parent student	<ol style="list-style-type: none"> <li>1) Student's parents say that their child's basic motion capabilities are experiencing disruption/teruama barriers their children are having down syndrome.</li> <li>2) Their children sometimes don't</li> </ol>

No	Procedur of Development	Result
		want to work out with a variety of reasons such as tired, hot, not cool etc physical education.
	3)	it is important for their children's social interactions.

Analysis of the collected data needs to manufacture a product. The resulting product before going into the field test then it should be validated by experts. Expert land consists of expert physical education and motor expert. Based on expert tests that have been done so it can be drawn the conclusion that the basic motion learning model variations based game for child mental retardation were contained 6 variations of the model are declared unfit. Therefore, the number of models originally 94 variations model became 88 variations model can be implemented to students.

A small group of trial results (n = 12) it was concluded that the overall model of learning basic motion-based games for children with moderate mental retardation "may be applied because they can administer it however remained in the guidance of the teacher". The results show that it can be done at this stage of testing large groups. In the trial of a small group there is input to the revised. Those revisions focus on: (1) correct the position of students and teachers while implementation and (2) the number of teachers at the moment of execution of the implementation.

A large group of trial results (n = 36) it was concluded that the overall model of learning basic motion-based games for children with moderate mental retardation "may be applied because they can administer it however remained in the guidance of the teacher". Based on the results of field trials, it turns out that the product development model of elementary motion-based learning games for children from mental retardation are no needs to be revised, all the aspects already meets the standards and is well worth to be used.

The model effectiveness test results done in this research is to perform tests against the 36 students from 3 schools: SD SLBC KaryaIbu, SD SLBB Pembina and SD SLB YPAC in Palembang are given preferential treatment by using a model of learning basic motion-based games for children with moderate mental retardation. Test results showed the following results:

1. Walk straight on over the rubber for the locomotor motion with the results of the t-count = 12,218, df = 35 and p-value =  $\alpha$  (0.05)  $\frac{1}{2} > \text{Sig}$  (2-tailed) (0.00) then  $H_0$  is rejected, that there was a significant increase in time on the speed walking on rubber.
2. Straighten up one leg to motion nonlokomotor with the results of the t-count = -17,956, df = 35 and p-value =  $\alpha$  (0.05)  $\frac{1}{2} > \text{Sig}$  (2-tailed) (0.00) then  $H_0$  is rejected, that there was a significant increase in time on the stand with one foot.
3. Reflecting balls to the wall for manipulative motion with the results of the t-count = 25,671, df = -35 and p-value =  $\alpha$  (0.05)  $\frac{1}{2} > \text{Sig}$  (2-tailed) (0.00) then  $H_0$  is rejected, that

there was a significant increase in the number of ball roll to the wall.

Of the three test results above indicate that the third test are experiencing a significant improvement after a given learning basic motion based games against mental retardation children basic motion capabilities are. Based on the results of the study it can be concluded that the model of learning basic motion-based games for children from mental retardation being developed have significant effectiveness so that it can be used and applied for mental retardation.

## DISCUSSION

### 1. Product Refinement

Data acquisition based on the test results above it can be concluded that the model of learning basic motion-based games for children tunagahita this are eligible to use and effective in enhancing the basic motion of the child's mental retardation. Products produced by the researchers certainly have its advantages and also disadvantages. Therefore, in order to achieve a more perfect product then the researcher will provide input. As for the input are as follows:

1. Need to be developed more basic motion learning models are more varied and innovation.
2. level of understanding child mental retardation are slow, then requires teachers to give their explanation to be more extra motion-motion study especially felt recently conducted by mental retardation.
3. Level of mental retardation child ego are mixed then requires teachers more extraattention and supervision over them.
4. This model was not ordered by level of difficulty (easy, medium and difficult). Therefore, further research is expected to consider a model that is composed based on the levels of difficulty so that makes it easy for the teacher.

### 2. Discussion of Product

The model of learning basic motion based game created by researchers to assist in enhancing the basic motion of the child's mental retardation are composed of motion nonlokomotor, lokomotor and manipulative. So, this model is made is indeed on the basis of the needs of the child's mental retardation. Therefore, the model is expected to be a reference for teachers, coaches and parents.

This product after examined regarding some flaws that need improving, then it can be submitted several advantages of this product include:

1. Can enhance the ability of basic motion (nonlokomotor, lokomotor and manipulative) mental retardation children are.
2. This Model can be organized into such as circuit training, where every post contains motion lokomotor, nonlokomotor and manipulative.
3. These models can be delivered through approaches such as playing games race.

4. In addition to the child's psychomotor menstimulus, this model can also be menstimulus cognitive and affective/mental retardation children's attitudes.
5. Children can feel comfort and security in the process of implementation.
6. Child to be more active, and enthusiastically so as not to cause boredom in children being mental retardation.
7. Can assist teachers in delivering the basic motion.
8. Can aid parents in improving basic capabilities and motion patterns of children at home.
9. As reference motion activity, physical activity, exercise and learning materials.
10. Contribution to the science of physical education in schools in particular.

### 3. Product Limitations

This development research has attempted to its fullest in accordance with proficiency of the researchers in this study, however, there are still some limitations which must be recognized. As for the limitations include the following:

1. Field Tests in this study was conducted on a limited scope so that this research would be much better if done on a wider scope.
2. The product used is far from the perfect words.
3. Facilities and infrastructure were used in this study is still limited.
4. An explanation as well as the implementation procedures in the model of the fundamental exercises of skill learning basic motion-based games for children with mental retardation are still far from perfect words.

## V. CONCLUSION

Based on the data obtained, from a field trial results and discussion of the results of the study it can be concluded that:

1. This product is produced through the research and development stage. The resulting product is in the form of a model of learning basic motion-based games for children with moderate mental retardation. Based on the stage of the analysis of the test run of the product that the product that generated this answers your needs and be a solution for moderate mental retardation, teachers and parents about the motion base.
2. Based on the results of a test of the effectiveness of the model, proven in empris that the product results in the form of a learning model of elementary motion-basedgames for children with moderate mental retardation has a very good effectiveness. It was shown by the results of test-t against the basic motion capabilities of a child (nonlokomotor, lokomotor and manipulative) that shows that there is a very significant improvement. So, learning the basic motion model-based games for children tomental retardation are effective for enhancing children's mental retardation are basic motion.

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