

Android Application Namely *Giat Bergerak* as an Effective Solution to Develop Motoric Skills in Pandemic Era

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ABSTRACT

“Giat Bergerak” is an android-based application with a cargo of video animation of the steering and educational games a variety of gross and fine motor movement, as well as health and safety information children aged 4-6 years, with reference to the Level of Achievement of the Development of the Child contained in Indonesian MoNE or Permendikbud No. 137 2014. This application is developed by five students of Universitas Pendidikan Indonesia especially at (Kampus Serang) in the Student Creativity Program for Research in the Humanities (PKM-RSH) in 2021 based on empirical studies in the field of early childhood education (ECD) that are affected by the pandemic Covid-19. “Giat Bergerak” comes as a form of contribution in helping to develop motor skills of children aged 4-6 years, namely as a medium of digital, interactive, innovative and practical. Using the method of R&D (Research and Development) with the development model 4D (Define, Design, Develop, and Disseminate). The results of the assessment conclusion, an “Giat Bergerak” can help develop motor skills of children aged 4-6 years. As for after the “Giat Bergerak” tested on children, parents and kindergarten teachers at TK Labschool UPI Serang, Banten it can be concluded that this application is feasible to be used for the preschooler as the stimulation of the development of the motor, maintaining the health of self and the environment and preventive measures for disaster management. Therefore “Giat Bergerak” an application using a mobile phone then we recommend when using the accompanied by an adult and remain mindful of screentime.

Keywords: *Giat Bergerak, Motor Development.*

1. INTRODUCTION

Indonesia is still in the situation of the pandemic Covid-19 since March 2020 so the impact on all aspects of life including education. The impact that educational activities cannot be implemented to the maximum, starting from the level of early childhood education to higher education because should be implemented online. Related to this, the researchers conducted the analysis of the literature studies and empirical studies in the field of Early childhood Education (ECD) that are affected by the pandemic Covid-19.

The results of the empirical study researchers showed that in early childhood

institutions the process of Learning From Home (BDR) or go online is experiencing a variety of limitations and obstacles; among others stuttering technology both from teachers and parents, the limitations of the media of digital learning, the barriers all the support, up to less optimal aspects of the physical development of children's motor. The findings of the study the research literature with the title “the Achievement of Early childhood Development in Kindergarten for Online Learning during the Pandemic Covid-19” (Hesti & Edi, 2021) concluded that most of the achievement of the development of the child in several aspects during learning online is experiencing a decline.

As for the similar research titled “Analysis

of the Level of Achievement of gross Motor Development of Children Aged 4-5 Years In The Pandemic Covid-19” [1] the results of the research shows there are only 2 of the 8 indicators with the development of better once reaching an average of 100%, that imitate the movement of aircraft and catching the ball. While the 6 other indicators are still below the numbers, with the lowest value that is independent in the conduct of the playground (activity pool) with percentage of 67,9%.

Digital technology plays an important role to support the effectiveness of various activities in the era of the pandemic at this time. Digital technology is slowly changing the lifestyle of the people who start a conversation in digital literacy. It is also used in the field of education, [2] in his research entitled “Development of the Media of Digital Learning for Early childhood”, lead to the conclusion that the medium of digital learning can provide an easy and practical use. In this case the development of learning media digital for the child can be motivating and encouraging the child to learn from home, with the appearance of the media animations, images, sounds and pleasant music.

From these conclusions, there is a gap between the BDR's activities with the aim of implementing early childhood education. The objective of early childhood education is a coaching effort Children from 0 to 6 years thanks to the provision of a stimulation of education to help the growth and development of the child, in order to to be able to participate in primary school. In fact, many aspects of child development are less optimized developed, especially motor development. It is the urgency that should be addressed immediately so that researchers are taking advantage of digital technology to create innovations in the form of Android applications to optimize the motor development of children aged 4 to 6 years.

2. EASE OF USE

2.1 Early Childhood Education

The law of the Republic of Indonesia Number 20 Year 2003 on National Education System Article 1[3], point 14 stipulates that early childhood education is a development effort to children from birth to the age of 6 is achieved through the provision of education stimulation to help growth and development Physics and spiritual so that cottages have the will to enter subsequent education.

2.2 Motor Development Of Children Aged 4-6 Years

Motor development is the process of a child learning to skillfully move members. Therefore, the child learns to make some of the movement models they can do and can cause your dexterity, speed, strength, flexibility, and accuracy of coordination of hands and eyes. There are three child development drive skills, including: (1) locomotor, walking; functioning; to jump; slide; (2) No Lokomotor, Lifting; to push; curved; swinging; attractive; (3) Manipulations, catch and throw the ball.

The reference Level of Achievement of the Development of the Child contained in the Regulation of the Minister of Education and Culture Republic of Indonesia No. 137 of 2014.

2.3 App basis on Android

Android-based application is a compiled and created the application using the programming language and can be viewed from anywhere and at any time.

3. METHOD

The research method that will be used is the method of R&D (Research and Development) with a model of the development of the 4D (four-D) by Thiagarajan [4] . The 4D development model is a flow that is to define (definition), design (planning), develop (development), and diffuse (propagation) used to produce the product in the form of Android applications and test the eligibility products is worn. Systematically systematically. The steps are made with a 4D development model that has been modified by researchers, as follows:

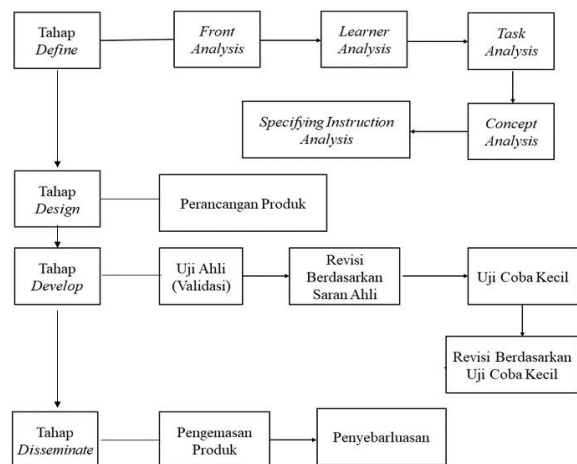


Figure 1. Procedures the Development of An Enterprising Moves Using the Model 4D

The average score of each aspect of the data expert appraisal and developmental testing by the formula $X = \sum x/n$. X is the average score, n is the number of grains on the aspect, and $\sum \square$ is the number of items scoring aspects. Looking for the score of the average overall $X \square = \sum \square \square$, with $X \square$ is the average score, n is the number of grains of a whole, while $\sum \square \square$ is the number of score points overall.

Table 1. Classification Scale

Average Score	Classification Value
>3,25 s/d 4,00	Very Good
>2,50 s/d 3,25	Good
>1,75 s/d 2,50	Good Enough
>1,00 s/d 1,75	Less Is Better

4. RESULTS AND DISCUSSION

Products resulting from research and development this is barupa android-based application, named “Giat Bergerak”. The application is developed by five students Teacher Early Childhood Education (PGPAUD) and Primary School Teacher Education (PGSD) at Student Creativity Program for Research in the Humanities (PKM-RSH) in 2021. The purpose of this research to create an app as a digital media that are interactive, innovative and practical.

Application with a cargo of video animation of the steering and educational game in a variety of gross and fine motor movement, as well as health and safety information children age 4-6 years. So it is expected to help teachers and parents in order to optimize the child’s motor during the BDR takes place. The development of the model 4D Thiagarajan, which includes four stages have reached the results achieved as follows:

4.1 Define Phase (Definition)

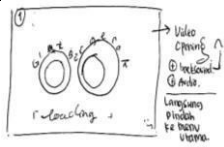
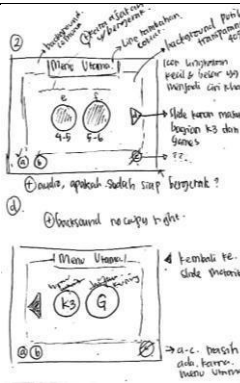
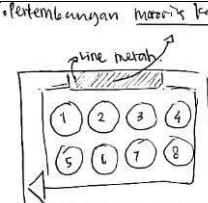
This stage starts from the front analysis, based on the literature study and empirical study through interviews found on the pandemic of Covid-19 children aged 4-6 years aspects of physical development motor does not develop optimal even decreased.

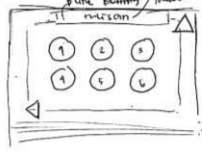
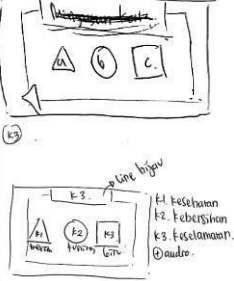
4.2 Stage Design (Planning)

The design stage is the early planning stages in the development of an “Giat Bergerak”. At this stage, researchers have made a storyboard and prototype application called “Giat Bergerak”. The Storyboard is created by loading the contents of the application in accordance with the

points of the physical development of gross motor children aged 4-6 years are contained in Permendikbud No.137 of the Year 2014 as the standards used in the development of aspects of early childhood development. Format the content of the application is divided into four parts, the two parts of the main is the type of activities gross motor and fine children aged 4-6 years, each of these sections contains six types of activities in the form of gif movement of locomotor, non-locomotor, and manipulative, as well as a video viewer. Two of the supporting parts are in the form of information about the health and safety of children as well as educational games. Each of these parts consists of three types of information, and three educational games.

Here is the Storyboard an “Giat Bergerak” that has been designed by researchers:

1.	 <p>Figure 2. Storyboard initial view</p>	Page appetizer consisting of a logo, the sign-in button and background sound.
2.	 <p>Gambar 3. Display Main Menu Storyboard.</p>	The main page consists of two slides: the first slide there are two buttons motor activities based on the age of 4-5 and 5-6 years, the second slide is composed of the information of the health and safety of the child, as well as educational games. On the main menu anyway dilengkapi information media and developers.
3.		On the page of the development of gross and fine motor there are six key activities, each button has been connected action trigger which serves to direct

	 <p>Figure 4. Storyboard activities gross and fine motor</p>	<p>to a page that is intended in accordance with its activities.</p>
<p>4.</p>	 <p>Figure 5. Storyboard health and safety information, as well as educational games</p>	<p>On the information page of the health and safety of children as well as educational games, each consisting of three types of posters and activities to play.</p>

4.3 The Stage Of Develop (Development)

Development is a process of assessment of the application by media experts and material, test the teachers and parents of kindergarten students to find out the feasibility of an “Giat Bergerak” developed. At this stage of development has been carried out to validate the joint validator media experts, experts gross motor AUD and expert fine motor AUD, and has also been conducting tests to teachers and parents of students TK LabSchool UPI Kampus Serang. At this stage there are four stages, which are implemented as follows:

4.3.1 Learning design

Based on the regulation of Permendikbud 137 tahun 2014 [5] about the standard of early childhood education. The process of the level of achievement of gross motor development and fine children aged 4-6 years was held in an interactive, fun, motivating children to be active. For the development of learning media an “Giat Bergerak” very supportive regulations and culture of the.

TK Labschool UPI Kampus Serang have implemented the 2013 curriculum. For it is done charging instrument to determine the level of validity and reliability. The questions asked to the respondents include the suitability of the application in the aspect of the development of gross and fine motor,

completeness of the material on the application, the use of language that is easily understood, the suitability of the content of the application, the application is easily understood parents and children.

4.3.2 Language

On the basis of the results of the evaluation of the language use of respondents in a teacher, children and parents easily understood. The language is also used in context with the content of the application.

4.3.3 Software engineering

Based on the results of the assessment of the respondents, the content of the application is in accordance with the level of development of gross and fine motor, completeness scope of the content is in accordance with the presented material, and comes with an icon/image, video props and sound tailored to aspects of the development of gross and fine motor child age 4-6 years.

Visual communication based on the results of the assessment of the respondents, the content is very easy to understand and in accordance with the level of development of gross and fine motor 4-6 year olds, educational games according to the material, which can be an attraction or motivation of the students in the operation of the app and perform various types of motor activities, harmony (balanced between graphics with all the elements that exist in the media) neat, attractive, and beautiful is very appropriate.

The results of the validation and assessment of the validator media experts and two experts of the material against an “Giat Bergerak” is a “Very Decent” with the value of the average overall 3,81 which means in the category of “Very Good”. Here is a table of the assessment of media experts and material experts:

Table 2. Results The Average Rating Validator

No	Aspect	Matter Experts Gross	Expert Materials Fine	Media Experts	Average	Category
		Motor	Motor			
1	Learning Design	4,00	3,42		3,71	Very Good
2	Language	3,75	3,75		3,75	Very Good
3	Software engineeri			3,90	3,90	Very Good

	ng					
4	Visual Communication			3,88	3,88	Very Good
Average overall				3,81		Very Good

Android-based application “Giat Bergerak” developed by combining several other media. Such Media include: media images, audio, video props, educational games. Here are some of the software (software) used to combine such media:

4.3.3.1 Articulate Storyline 3

Articulate Storyline 3 is a software that can be used to create a percentage. Articulate Storyline 3 features:



Figure 6. display when entering the application

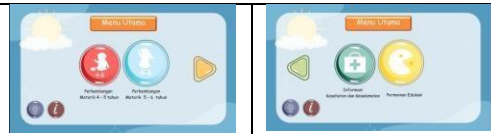


Figure 7. Display The Main Menu



Figure 8. Display options activities gross and fine motor according to the age category of the child



Figure 9. Display options information the health and safety of the child

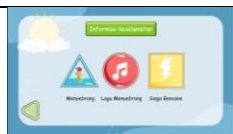


Figure 10. View our selection of educational games



Figure 11. The contents of the event via video viewer



Figure 12. The contents of the activities in the form of gif and animation

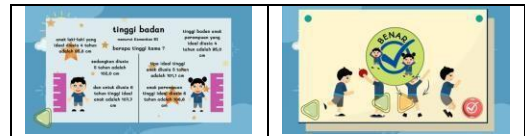


Figure 13. Information posters health of the child



Figure 14. Educational games

4.3.3.2 Website 2 APK Build

Website 2 APK Build is a computer- based applications that are created specifically to make the app apk extention or android in which there is a website or blog that you have.



Figure 15. Display Web2 APK

4.4 Stage Disseminate (Spread)

Stage Disseminate is the stage of publication of the application “Giat Bergerak” through the online media, as this app can be downloaded through the Google Drive or request via Email. The next stage this application currently is in the process of being reviewed by the PlayStore and for socialization stage will be done on social media, such as Instagram, Youtube, and news portals.

5. CONCLUSION

From the result of research and development that has been done on this subject, it can be concluded that the era of the pandemic is not an obstacle to continuous innovation activities for early childhood. Contribute in the field of early childhood education in the five students at the University of Education Indonesia in developing an application based on Android to optimize aspects of motor development of children aged 4 to 6 years and have succeeded in obtaining the results of the evaluation assessment the maximum with average validator validator validator experts and 3.81 with the value of the very good rating scale then get the category the criteria is worth it.

Thus, an “Giat Bergerak” is valid that is feasible and can be used in developing the ability motoric, maintain health and preventive disaster response for children aged 4-6 years. Mentoring adults is needed to help the child and limiting screentime when playing the “Giat Bergerak”. Therefore, when using the application of “Giat Bergerak” by the children, we suggest to accompany our children when use it and remind them not to use it for a long time.

ACKNOWLEDGMENTS

First and foremost, we would like to thank Allah SWT, the almighty, for His grace the researchers were able to complete a series of processes until this scientific article could be completed. We thank to Belmawa Directorate–Ministry of Education and Culture who gives trust so that created this article. We thank to Indonesia University of Education and Ms. Rr Deni Widjayatri as a Assistent Lecturer who has accompanied, guided and directed as well as fully support the process or carrying out this research. Also we thank to the academic community of the Indonesian University of Education who has provided various directions and information regarding the implementation of the PKM 2021. We thank to the validators who have been willing and took the time to provide assessment, suggestion and criticism on the Giat Bergerak application validation process move. Also we thank to

TK *Labschool* UPI Kampus Serang for their willingness to participate in the mobile application trial activity. We thank to our family who always support and pray for every research process that we do, and we thank to friends who have supported and prayed for this research goes well.

REFERENCES

- [1] R. M. Rizki, H., & Aguss, “Analisis Tingkat Pencapaian Perkembangan Motorik Kasar Anak Usia 4-5 Tahun Pada Masa Pandemi Covid-19”, *J. Phys. Educ.*, bll 20–24, 2020.
- [2] J. Pratama, S., & Maulani, “Pengembangan Media Pembelajaran Digital untuk Anak Usia Dini”, *Pros. Has. Penelit. Dosen UNISKA*, bll 132–137, 2017.
- [3] E. Wulandari, H., & Purwanta, “Nasional, Undang-undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Covid-19.”, *J. Obs. J. Pendidik. Anak Usia Dini*, bll 452–462, 2021.
- [4] A. Panggabean, N. H., & Danis, *Desain Pengembangan Bahan Ajar Berbasis Sains*. Yayasan Kita Menulis, 2020.
- [5] Dini, “Standar Nasional Pendidikan Anak”, *Peratur. Menteri Pendidik. dan Kebud. Republik Indones. Nomor 137*, 2014.