

Improvement of physical fitness through electronic modules based on play activities Mejora de la condición física a través de módulos electrónicos juego basado en actividades

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Abstract. Learning that is still monotonous, limited creative and innovative teaching materials and teaching and learning activities that are less fun are obstacles to achieving the physical fitness goals of students. The purpose of developing electronic modules with physical fitness materials based on play activities for students at the elementary school level is to develop electronic modules through play activities and improve the physical fitness of students at the elementary school level. This type of research is Research and Development which consists of potential and problems, data collection, product design, design validation, design revision, product trial and product revision. This study involved 64 students from 3 schools, 3 lecturers (material experts, linguists and media experts) and 2 sports teachers at the elementary school level. Physical fitness data collection using the Nusantara Student Fitness Test. The results of the study 1) The creation of an electronic module of physical fitness material based on valid and reliable play activities, 2) Can improve the physical fitness of students through fun play activities. Electronic modules as part of technological developments can be used directly by society at large for the purpose of physical fitness, so that future researchers can provide more detailed aspects of physical fitness.

Keywords: Electronic module; physical fitness; Play Activities; Healthy

Resumen. El aprendizaje sigue siendo monótono, los materiales didácticos creativos e innovadores limitados y las actividades de enseñanza y aprendizaje que son menos agradables son obstáculos para lograr los objetivos de aptitud física de los estudiantes. El objetivo de desarrollar módulos electrónicos con material de aptitud física basado en actividades lúdicas para estudiantes de nivel primaria es desarrollar módulos electrónicos a través de actividades lúdicas y mejorar la condición física de los estudiantes de nivel primaria. Este tipo de investigación es Investigación y Desarrollo que consiste en potenciales y problemas, recopilación de datos, diseño de producto, validación de diseño, revisión de diseño, prueba de producto y revisión de producto. En esta investigación participaron 64 estudiantes de 3 escuelas, 3 profesores (expertos en materiales, expertos en idiomas y expertos en medios) y 2 profesores de deportes de nivel de educación primaria. Recopilación de datos sobre aptitud física mediante la prueba de aptitud física para estudiantes de Indonesia. Resultados de la investigación: 1) Creación de módulos electrónicos de material de aptitud física basados en actividades lúdicas que sean válidos y confiables, 2) Pueden mejorar la condición física de los estudiantes a través de actividades lúdicas divertidas. Los módulos electrónicos, como parte de los avances tecnológicos, pueden ser utilizados directamente por la sociedad en general con fines de aptitud física, de modo que los futuros investigadores puedan proporcionar aspectos más detallados de la aptitud física.

Palabras clave: Módulos electrónicos; aptitud física; actividades lúdicas

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Introduction

Education is an important point that must be considered by a State (Amirudin, 2019) suggesting that education is a systematically structured process in producing the quality of Human Resources (HR) needed to help build the State. Educators are expected to have creativity in learning to produce a generation of nations that are ready to compete, for example by developing creative and innovative learning materials or media, increasing learning motivation, creating a fun and fun learning atmosphere. Physical education in schools is a subject that is a long-term investment in producing quality Human Resources (Nuraulia, 2019).

Physical Fitness is a major foundation that must be owned by every human being to be able to carry out daily activities optimally. Low levels of physical fitness will make it difficult for humans to carry out activities (Darmawan, 2017). Physical fitness is the result of the work of the body's system functions that realize an increase in the quality of life in every activity that involves physical (Abduh et al., 2020). Workers who have a good level of physical fitness still have energy stores to carry out

other activities without side effects that can be detrimental to health (Wahyuni, 2019). A person with a good cardiovascular system can help carry out daily activities without feeling excessive fatigue (Campos et al., 2023; Umar et al., 2023). With some of the opinions above, the author concludes that a person's physical fitness is very important in helping to do good activities, high activity without feeling excessive fatigue and causing problems to one's health.

Technological advances have changed the way students and teachers communicate and disseminate information (Wasan et al., 2022). Learning media in the teaching and learning process can arouse desire and interest in learning, generate motivation and stimulation of learning activities, and even bring psychological influences to students (Ihsan et al., 2021). Learning media that is modified into a game can help students in the teaching and learning process. Play is an activity that can help children think creatively without mastery (Priyanto, 2014). Play carried out in the learning process is not only liked by children, but is beneficial for children's physical and motor growth (Komaini, 2017). Play has an important role for children in life which can be seen from several aspects including psychological, physical, and social aspects, intelligence, confident motiva-

tion will develop through play activities (Bandi, 2011). Children have a special trait, namely the desire to always play even though their bodies feel exhausted because play for children can provide information, provide fun and develop imagination through fun with jokes and laughter.

Research conducted by Bandi in Yogyakarta to see the profile of students' physical fitness levels found that 140 students had moderate physical fitness, 36 students had poor physical fitness (Handayani et al., 2023; Hardinata et al., 2023). Most Indonesians (85%) are still not aware of the importance of physical activity and only about 15% of the population in Indonesia is aware of the importance of physical activity (Kusuma et al., 2020). The study conducted (Abduh et al., 2020) showed the results that there is a relationship between the level of physical fitness to learning outcomes, the better the level of physical fitness of students, the better the learning outcomes. Based on the explanation above, the author conducts research on improving physical fitness through the development of electronic modules based on play activities because the author believes that the level of physical fitness of students must be paid more attention to in order to create quality Human Resources and ready to compete with other countries..

Method

This research is research and development. Development research is an effort to develop a product that has been made and test the effectiveness of the product that has been produced (Cao et al., 2022). The development model used in this study is the Borg and Gall model. The Borg and Gall development(Gall et al., 1996) model consists of 10 stages which can be seen as shown below:

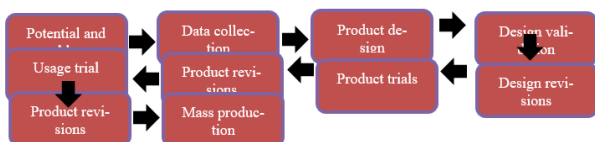


Figure 1. Stages of the R & D development model

The questionnaire that has been filled out by experts will be analyzed using the assessment scale table as follows:

Table 1. Grading scale

Score	Rating Scale
4	Worth using without revision
3	Worth using with minor revisions
2	Worth using with major revisions
1	Not worth using

Sumber : Arikunto (2010)

The scoring score will be entered using the following formula:

$$P = \frac{F}{N} \times 100 \%$$

Source : Arikunto (2010)

Table 2. Expert validation questionnaire percentage criteria

Percentage Range (%)	Qualitative Criteria
86-100 %	Very Decent
71-85 %	Very Good
56-70 %	Good
41-55 %	Less
<40 %	Ugly

Source : (Arikunto, 2010)

Results And Discussion

Research Results

1. Product Assessment

a. Valid Test

Electronic module products produced in the decent category with an average percentage of 83.9% to be used as teaching materials for physical education, sports and health in physical fitness materials for elementary schools can be seen in the following figure:

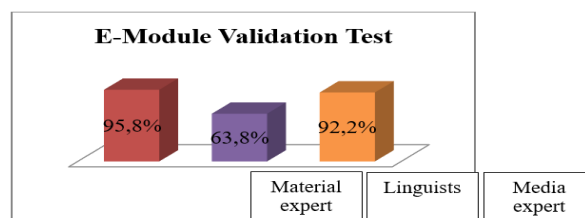


Figure 2.E-Module Validation Test

b. Practicality Test

Electronic module products in practicality tests on grade IV students of UNP Laboratory Elementary School totaling 10 people obtained the following results:

Table 3. Practicality Test

Aspects	The Value of Practicality	Category
E-module display	3,47	Practical
Operation of the E-Module	3,46	Practical
Ease of Product to learn its contents	3,93	Very Practical
Benefits of E-Modules	3,86	Very Practical
Average	3,73	Very Practical
Reliability (%)	97,5%	

2. Physical Fitness Results

Physical Fitness measured using the Nusantara Student Fitness Test from 3 schools in Padang City obtained the following results

a. SD Angkasa II

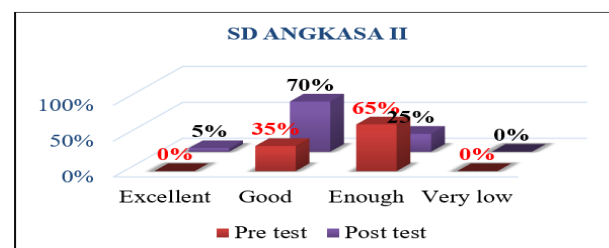


Figure 3. Fitness Data of SD Angkasa II

b. SD Pembangunan UNP

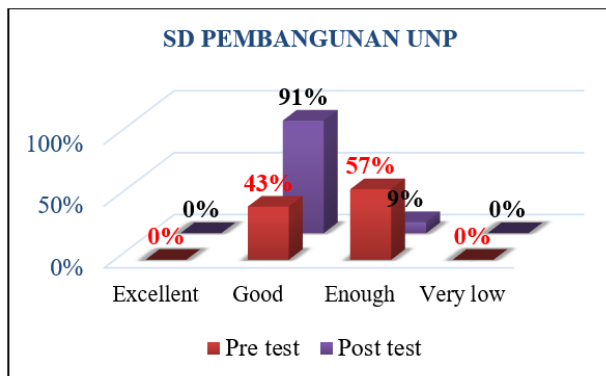


Figure 4. Fitness Data of SD Pembangunan UNP

c. SD IT Nurul Ikhlas

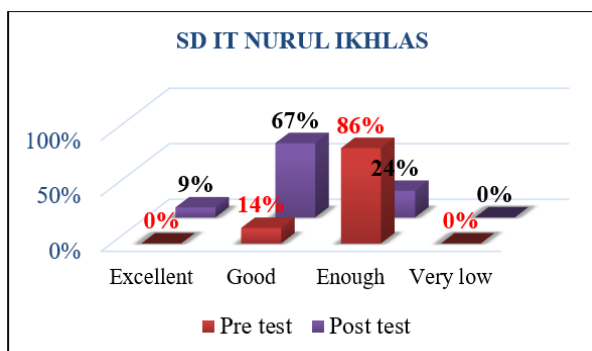


Figure 5. Fitness Data of SD IT Nurul Ikhlas

Discussion

This e-module was developed on the Borg and Gall development model. Students can use electronic modules anytime and anywhere with mobile phone capital, students' curiosity will increase if a learning is displayed starting from writing and images followed by audio and video (Kosanke, 2019). A research product is said to be valid if it meets certain criteria of characteristics of the product that is said to be valid. The validation of the electronic module of Sports and Health Physical Education learning on physical fitness material based on play activities is reviewed from three aspects, namely the material aspect, the language aspect, and the media aspect.

The material aspect is a requirement that is pleased with the process of finding the correct concepts and in accordance with the applicable curriculum, this electronic module material is said to be very feasible because the content of the electronic module developed is in accordance with the applicable curriculum and in accordance with the characteristics of students in elementary schools. Where students are very happy in doing games. Play carried out in learning activities will not only be liked by students, but also beneficial for child development (Komaini, 2017). Gross motor play activities allow children to learn to lead and follow, develop physical skills (Welis et al., 2023), interact with others in different ways (Morrisson, 2012).

In the language aspect of sentences delivered in the communicative electronic module, using good and correct language, and using sentences that do not cause double interpretation. In the electronic module, the media aspect is said to be very feasible, this shows that the writing used, audio, video and appearance have attracted attention for students as revealed (Ihsan et al., 2021) That learning media in the teaching and learning process can arouse desire and interest in learning, generate motivation and stimulation of learning activities, and even under the influence of psychology for students. E-modules are teaching materials that learners can use to learn independently with minimal help from others (Rosa, 2015).

The provision of electronic modules in Physical Education, Sports and Health learning on physical fitness materials based on play activities provides high motivation to students to carry out play activities. The advantages of using electronic modules are able to foster students' morning motivation (Laili et al., 2019), While play activities are physical activities that not only cause a sense of joy in students but can make the body healthy, fresh, and strong. Research conducted (Moghaddaszadeh & Belcastr, 2021) It was found after 7 weeks of treatment that integrated active game interversion (LOC) resulted in greater changes for all FMS scores and percentiles compared to active play and integrated active game (OC) programs. Active play programs have been suggested to increase physical activity and improve FMS skills for learners at pre-school and school age (Adamo et al., 2016; Lubans, 2010).

This study shows that play activities will improve physical in children by doing physical activity in the form of games indirectly students have done activities that improve physical fitness. (Dr. Alnedral, 2016) Also said the game is a fun learning activity (fun) serious but relaxing, from a saturated activity to a carefree activity. This activity makes students happy in doing movements that support physical fitness. This learning e-module is very helpful in doing games because in the electronic module it is explained how to do interesting games. Research on the physical activities of students in learning in schools carried out (Kirkham-King et al., 2017) It found that learners get an active average of anywhere from 25% to 31% MVPA. Learning the use of this E-module has a positive impact on the physical fitness of students, students are motivated to do play activities outside of school learning with the results of research conducted in 3 private schools in Padang City getting positive results that the electronic module of physical fitness learning based on play activities can provide motivation and improve the physical fitness of students (Ihsan et al., 2022).

This study has several limitations, namely some students do not have mobile phones so they are constrained to access electronic modules outside of learning hours at school, so that some students do not get strong motivation to do play activities that can support the improvement of physical fitness for students. This limitation can affect the results of this study and is important to be taken into con-

sideration or parameters that will be examined in future studies.

Conclusion

This study produced an electronic module of physical fitness learning based on play activities at the elementary school level with very feasible validation with an average score of 83.9%. While the practicality test of the electronic module at a value of 3.73 with a very practical category. Physical fitness learning outcomes also increased after learning using electronic modules of physical fitness based on play activities in terms of the quality of physical fitness of students, learning motivation to do sports activities through fun play activities. Thus, with the existence of electronic physical fitness modules based on playing activities can improve the physical fitness of students.

Penelitian ini menghasilkan sebuah modul elektronik pembelajaran kebugaran jasmani berbasis aktivitas bermain pada tingkat Sekolah Dasar dengan validasi sangat layak dengan nilai rata-rata 83,9%. Sedangkan uji praktikalitas modul elektronik pada nilai 3,73 dengan kategori sangat praktis. Hasil pembelajaran kebugaran jasmani juga mengalami peningkatan setelah dilakukan pembelajaran menggunakan modul elektronik kebugaran jasmani berbasis aktivitas bermain dari segi kualitas kebugaran jasmani peserta didik, motivasi belajar untuk melakukan aktivitas olahraga melalui aktivitas bermain yang menyenangkan. Sehingga, dengan adanya modul elektronik kebugaran jasmani berbasis aktivitas bermain dapat meningkatkan kebugaran jasmani peserta didik.

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