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Increasing Rhythmic Gymnastics Skills in Students Through M-Gym Media

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Abstract. The purpose of this study was to determine whether M-Gym media could help students improve their rhythmic gymnastics skills. This study was based on Borg and Gall's research. This study was planned at Universitas Negeri Medan's Faculty of Sports Science. Meanwhile, this study was carried out for one semester, from April 2nd to April 29th, 2024. The findings of this study revealed that in the small class trial, 70% of the students' rhythmic activity abilities were evaluated as weak during the pretest stage. The test was performed on students before they begin learning with m-gym media. However, when students in small classes were taught with m-gym media, their results were different. The majority of students (83.3%) have good rhythmic abilities. In the large class trial, the majority of students' rhythmic activity abilities were rated as inadequate at the pretest stage, 56%. The test was performed on students before they begin learning with M-Gym media. However, when students in big classes were taught utilizing M-Gym media, the results were different. Most students are proficient in rhythmic gymnastics. The conclusion showed that students could perform fundamental rhythmic activity motions correctly when provided directions during learning utilizing M-Gym media.

Keywords. Media, M-Gym, rhythmic gymnastics

Introduction

According to the Law of the Republic of Indonesia Number 20 of 2003, learning is a process in which students and educators interact with one another and with learning resources in order to attain their objectives. According to Hamalik (2015), in order to attain goals, students and teachers collaborate by organizing teaching and learning activities using a variety of resources such as books, blackboards, chalk, and other teaching aids, as well as physical locations such as classrooms and audiovisual equipment.

A good education is aided by a variety of factors that help the learning process. Teachers, students, and learning resources which include books or learning media are all examples. Learning is a teacher's endeavor to educate his students (directing student interaction with other learning materials) with the hope that the goal will be met (Trianto, 2017). Learning can be effective, which is defined by having adequate learning media that assist teachers convey the material (Slameto, 2015)

Learning media is a tool for delivering learning material content and motivating students to get involved in the learning process (Sanjaya, 2016). According to Yaumi (2018), learning media refers to any type of physical equipment that is specifically created to transfer information and foster engagement. Learning media is a message carrier technology that may be utilized for educational purposes; it is a tangible means of communicating instructional information. Learning media are forms of communication that include print, watching, and hearing, as well as technological devices (Hamalik, 2015). Media can be utilized as a beneficial intermediary to boost the efficacy and efficiency with which goals are achieved. Learning media is anything that teachers utilize to engage all five senses of sight, hearing, touch, smell, and taste when delivering lessons. Learning media are information carriers that are specifically developed to achieve teaching and learning goals (Slameto, 2015). Sardiman (2017) defines learning media as a message carrier technology that can be utilized for learning purposes. It is a tangible means of communicating instructional information. Learning media is utilized in schools to increase educational quality. Media can be used as a beneficial intermediate to boost effectiveness and efficiency in reaching goals (Mulyasa).

Android is a mobile operating system based on Linux that contains an operating system, middleware, and apps. Android is an open platform that allows developers to create applications. Applications, Application Framework, Libraries, Android Runtime, and Kernel make up the Android architecture (Hendrastuty, 2021). The benefit of Android-based m-learning is that it may deliver material in a practical and simple format, is portable, attractive, includes pictures and colors, and can be studied at any time using an Android smartphone device.

According to Herlambang (2017), rhythmic activity is one of the factors covered by Physical Education, Sports, and Health disciplines. Rhythmic activities with various types of material (including aerobic exercise and aerobic exercise), which is a series of rhythmic aerobic dance movement patterns, are still rarely taught by physical education teachers, supposedly because some physical education teachers have not yet mastered the basic material of aerobic exercise. or another rhythmic activity material. Lin (Yudho et al., 2020). Rhythmic movement is an extremely beneficial activity for everyone, particularly during childhood and adolescence. Gymnastics is a sport with its own scope, play area, and rules; in principle, all sports involve gymnastic movements (Farida, 2022).

Previous study on the same theme, specifically Android application development, can be found here: Development of Bina Darma Gymnastics for Learning Rhythmic Activities in Physical Education, Sports, and Health (Sukmawati & Melianty, 2017) Development of Rhythmic Activities Using Creative Gymnastics Models for Physical Education Learning for Gilang Nuari Panggraita Elementary School Students (Learning et al., 2014) and Rhythmic Activities in Physical Education in Elementary Schools (Suharjana, 2010).

Based on the findings of Unimed researchers and information obtained from lecturers at the Faculty of Sports Science on the 2nd and 29th of April 2024, researchers discovered that many students still did not understand rhythmic activity gymnastics techniques properly and correctly when learning rhythmic activities. Meanwhile, the competency demands of each material must be met, so it is necessary to innovate supporting media in learning for graduate competency, so researchers conducted research on PJKR students in the sixth semester of the 2023/2024 academic year, developing Android-based mobile learning in rhythmic activity courses for PJKR students. The academic year 2023/2024 is currently in its second semester.

Method

This study used Borg and Gall's research through ten stages: (1) preliminary study, (2) research planning, (3) initial product development, (4) initial (limited) field trials, (5) limited revision of field test results, (6) wider field test, (7) revision of field test results, (8) feasibility test, (9) revision of feasibility test results, and (10) dissemination and socialization of the final product (Rohmaini et al., 2020).

This study was planned at the Universitas Negeri Medan, Faculty of Sports Science. Meanwhile, this research was conducted across one semester, from April 2nd to April 29th, 2024. This study focused solely on the use of Android-based mobile learning in the health and recreation physical education study program at the Faculty of Sports Sciences, Universitas Negeri Medan.

This study's population consisted of 115 students from the Health and Recreation Physical Education Study Program studying the rhythmic activity gymnastics course in the sixth semester of the 2023/2024 academic year. There were 25 participants in the small sample, 35 in the large sample, and 32 in the comparative sample.

Standard measures of students' gifted skills in rhythmic gymnastics exercises were used in the study, as well as expert observation tests, interviews, documentation, and observation sheets. A variety of data analysis techniques are utilized, including descriptive and inferential analysis. In this development investigation, data was analyzed using the t-test technique. In this study, a qualitative strategy is utilized to accomplish the first objective, and a quantitative approach is used to discover the second objective, using a before-after experimental research design. Questionnaires were distributed to small, large, and comparison samples as part of the data gathering process. Material specialists and learning media experts both collected data.

Results

1. Increasing the Capabilities of M-Gym Teaching Media

1.1. Draft Model Development Process

A. Preliminary studies

As a result of interviews with 3 lecturers who taught rhythmic activity courses, information was obtained that there were still many students who did not understand rhythmic activity gymnastics techniques properly and correctly in learning rhythmic activities. This phenomenon shows that students are not yet able to understand rhythmic gymnastics material. Learning media needs to be developed so that students can receive and understand the material well.

The researcher, after knowing the field conditions experienced by the lecturers and students above, took the initiative to hold discussions with several lecturers, especially lecturers who taught rhythmic activity courses, lecturers who were media experts, lecturers who were material experts, and lecturers who were experts in the course curriculum. This discussion, known as FGD, was held for 2 hours. From the results of the discussion, several important notes were obtained to resolve the problems of online learning and non-network learning. The results of the FGD can be seen in the following table.

Table 1. Focus Group Discussion Results

No	Notes
1	Lecturers and students need media that can be used for learning both online and offline

2	This media can be studied on Android because all students have Android
3	Media can attract the millennial generation, especially the generation who like gadgets.
4	Media can be operated online or offline.

Based on the Focus Group Discussion (FGD) results above, this research plans to develop M-Gym media in rhythmic gymnastics courses.

B. Draft Model

The model that has been planned is then made into a draft model that will be used in the research. The draft model is a description of the model planning

1. Development Background

Students have difficulty understanding the material given by the lecturer. Students ultimately cannot receive the material provided by the lecturer well because the media used does not attract students. As a result, many students when assessing their rhythmic gymnastics abilities did not pass their competency.

Lecturers need a learning media that attracts students and makes it easier to deliver material to students. The learning media that must be developed is flexible and easy for students to learn. Students who like gadgets can develop learning media that can be installed on gadgets so that students can study at any time and anywhere.

M-Gym media is a solution for lecturers and students to improve their ability to pass rhythmic gymnastics competencies. This is because, with the M-Gym media, students can learn rhythmic gymnastics material and movements at any time. Students not only study in class but can also study outside of class and outside class hours.

2. Development Steps

M-Gym was developed through the Play Store application which can be downloaded on Android. This application was developed based on the needs that had been drafted. The application is then registered with Google as the owner of the Play Store. Applications submitted to Google must follow Google's rules so there are several stages so that the application is complete and can be downloaded on the Play Store. The following are the steps you must go through to qualify for the Google Play Store.

a. Register the application

Proof of application registration can be seen as follows:

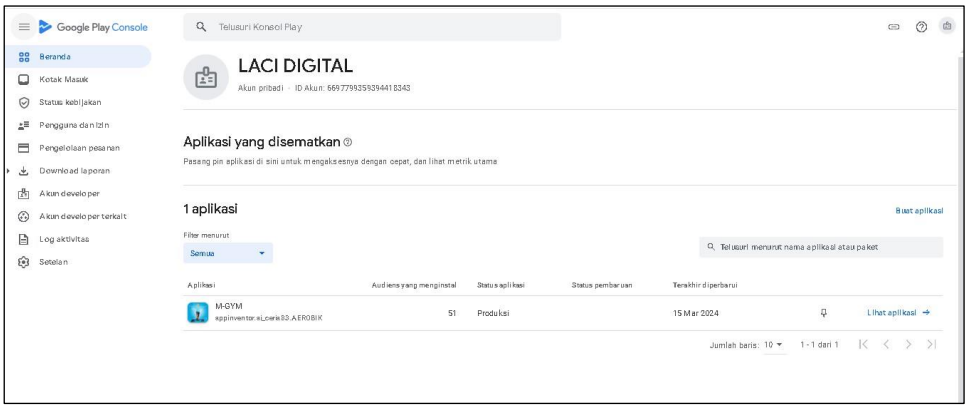

Figure 1. Application Registration

b. Open Testing

Open testing includes unlimited participants by sharing the link with all Android users. Open testing by introducing the application to Android users.

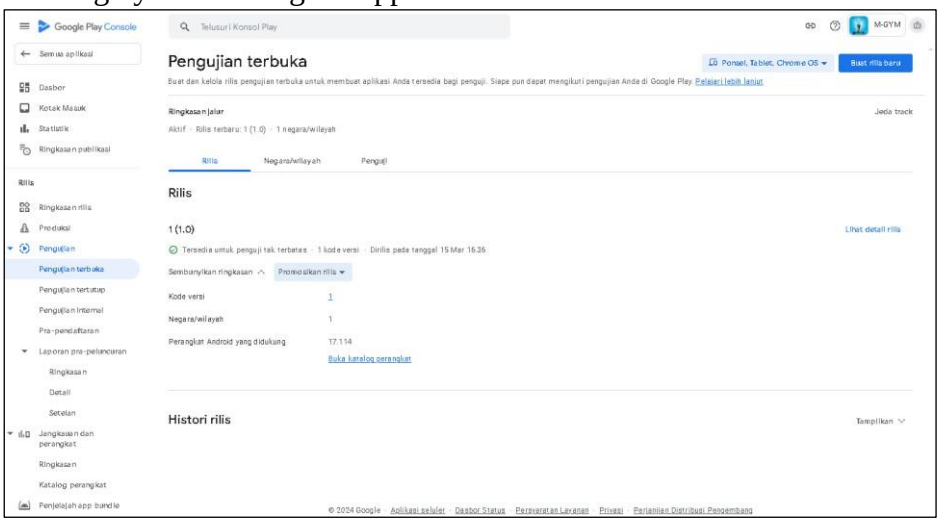

Figure 2. Open Testing

c. Close Testing

Closed testing was carried out with a Google group created and participated in by 34 Android user members.

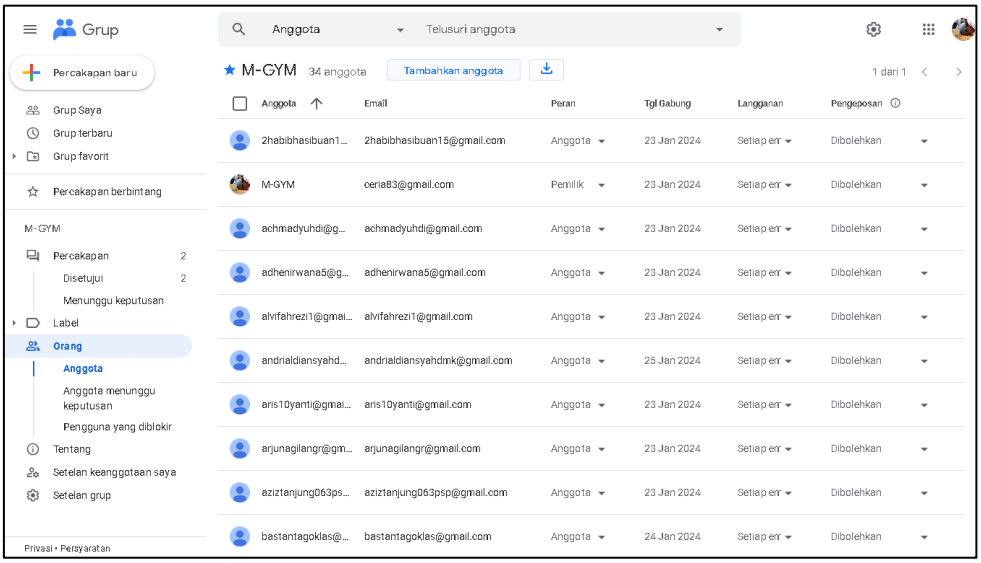

Figure 3. Close Testing

d. Internal Testing

Applications that have been successfully downloaded are then assessed by the application downloader. Some assessment results can be seen as follows:

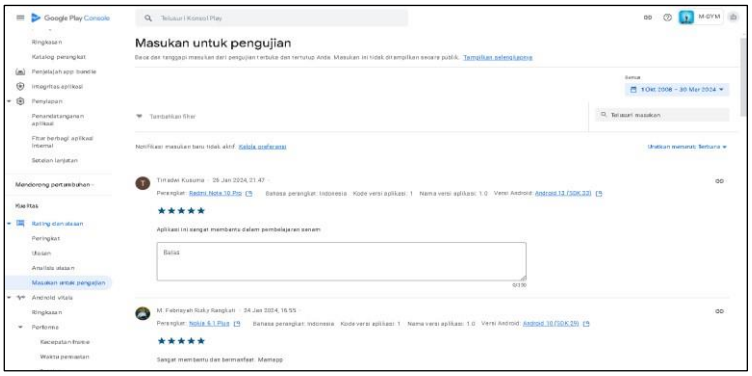

Figure 4. Internal Testing

3. Development Goals

The objectives of developing this model include the following.

1) Creating learning media that is flexible and integrated with students' lives
2) Assist lecturers in delivering material to students.
3) Help students understand rhythmic gymnastics material.

4. Contents of M-Gym media

a. Login Page

The media developed by M-Gym when you first enter will be greeted with the following image.

Figure 5. M-Gym Media Home Page

Students who enter the M-Gym media for rhythmic gymnastics can continue by pressing the learning entry menu. Students will enter the rhythmic gymnastics learning media application.

b. Application Home

The application homepage is the page that is displayed after students log in or enter the application. This home page is equipped with menu options such as a profile, rhythmic gymnastics semester lecture plan, and rhythmic gymnastics material in the form of rhythmic gymnastics videos.

c. Profile

The profile menu contains a brief explanation of rhythmic gymnastics. Students can find out the definition or understanding of rhythmic gymnastics in a simple way so that it will

provide an overview of rhythmic gymnastics. Students will have an idea of the content of rhythmic gymnastics material when they understand the definition of rhythmic gymnastics itself.

d. The Semester Lecture Plan

The semester lecture plan is a joint agreement between students and lecturers. Lectures have a contract regarding the number of meetings, student rights and obligations. Students understand and know what they will study for the next semester because there is already a complete semester lecture plan.

Students can also study at any time about the material that will be provided in the lecture plan for that semester. Before the lecture meeting, students can study beforehand so that during face-to-face lectures they already have an idea of the material they will study. This semester's lecture plan also makes it easier for lecturers to control the material that will be given to students during the next semester. The lecture plan display in M-Gym media can be seen as follows.

Figure 6. Semester Lecture Plan Display

e. Rhythmic Gymnastic Materials

The rhythmic gymnastics material in Android media contains videos of rhythmic gymnastics movements. This can make it easier for students to learn and practice performing rhythmic gymnastics movements. Students can practice at any time by following the movements in the learning media. The display of rhythmic gymnastics material on m-gym media can be seen as follows.

Figure 7. Rhythmic Gymnastic Materials

1.2 Experts Validations

Expert validation of the M-Gym rhythmic gymnastics media development product was validated by 2 material expert lecturers and 1 media expert. Expert validation will assess and provide feedback and suggestions on the M-gym media that has been developed. The material used for assessment is media supporting theory, media development background, media development objectives, media entry page, application homepage, profile, semester lecture plan, as well as material presented in M-Gym media. Based on the validation results, the following results were obtained.

Tabel 2. Results of Experts Validations

No	Indicators	1st Expert	2nd Experts	3rd Experts	Average	Category
1	Supporting Theory of Learning Media	4	4	4	4	Very Good
2	Background to Learning Media Development	4	4	4	4	Very Good
3	Learning Media Development Objectives	4	3	4	3.67	Very Good
4	Searching in PlayStore is easy	4	3	4	3.67	Good
5	The initial appearance of the application after downloading is attractive	4	4	4	4.00	Very Good

6	The content of the material is by the objectives to be achieved	3	4	4	3.67	Very Good
7	The application has a clear semester lecture plan	4	4	4	4.00	Very Good
8	The application displays exercise material in a coherent	4	4	4	4	Very Good

Based on the table of expert validation results using 8 indicators, 7 were in the very good category and 1 was in the good category. Based on validation, experts provide several notes that can make the model better. Some expert notes can be seen in the following table.

Table 3 Notes on Expert Advice on M-Gym media results

No	Experts	Suggestions
1	Arjuna Gilang Ramadhan	The description of the use of the media is more detailed so that lecturers can easily use it later
2	Dimas Galih Farelino	a. Don't just add 2 materials to make it easier for students to choose the rhythmic gymnastics they want b. The entry page adds illustrations of gymnastics images so that they provide a direct picture to media users
3	Pradipta Wira Utama	a. Adding too little material if only 2 b. Semester Lecture Plans are more detailed and complete

Based on the results of the expert validation above, M-Gym Media was refined according to suggestions from experts to make it better than the model developed. The model that underwent improvements and suggestions from experts can be seen as follows.

1.3 Small Class Trial

M-Gym media, which contains rhythmic gymnastics that has been validated by experts and instruments that have been tested to determine whether they are valid and reliable, is then used for small class trials. Products are assessed in small classes twice, namely pretest and post-test (after revision or improvement). Based on the results of small class trials, the results of product assessment in small classes obtained the following results

Table 4. Results of Small Class Rhythmic Graduation Competency Assessment

No	Criteria	Pretest		Post-test	
		Frequency	(%)	Frequency	(%)
1	Good	2	6.7	25	83.3
2	Good Enough	4	13.3	5	16.7

3	Less Good	21	70	0	0
4	Bad	3	10	0	0
Total		30	100	30	100

The results of students' abilities in rhythmic activities before and after learning using the M-Gym rhythmic gymnastics media obtained information that showed significant differences. At the pretest stage, the students' rhythmic activity abilities were mostly classified as poor, namely 70%. This assessment is carried out on students before they are given learning using m-gym media. However, after students in small classes were taught using m-gym media, they showed different results. Most students have good abilities in rhythmic activities, namely 83.3%. Students can carry out basic rhythmic activity movements well according to the directions given during learning using m-gym media. The results of the comparison of abilities before and after learning in small class trials can be seen as follows.

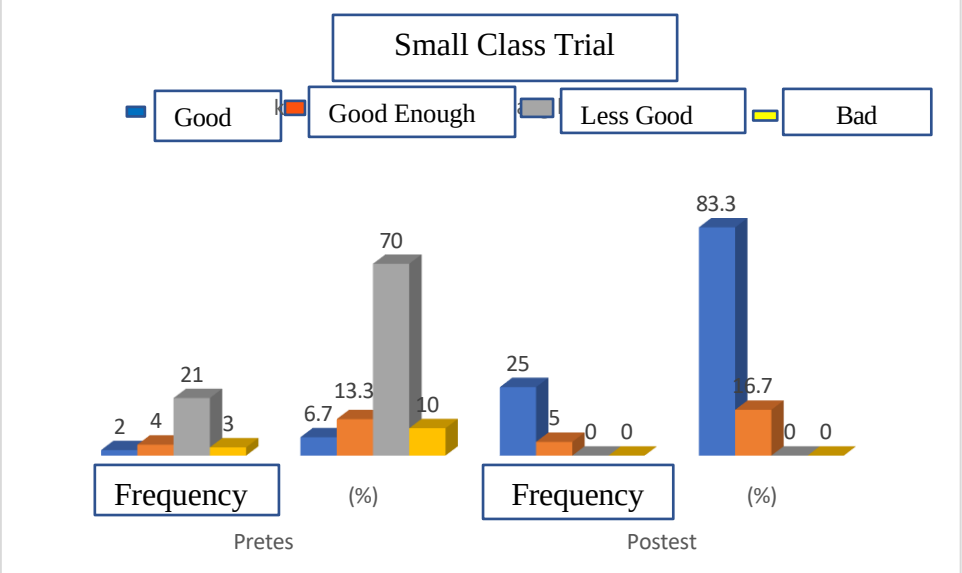

Figure 8. Comparison of Small Class Trial Capability

1.4 Large Class Trial

Products that were tested in small classes showed that there was an increase in students' rhythmic gymnastics graduation competency abilities before and after learning using M-Gym media. Trials on a large class of products were tested on 50 students. Students who are sampled in large class trials are students who have not been sampled in small classes. The results of the assessment before and after learning can be seen in the following table.

Table 5. Results of the Large Class Rhythmic Graduation Competency Assessment.

No	Criteria	Pretes		Post-test	
		Frequency	(%)	Frequency	(%)
1	Good	3	6	50	100
2	Good Enough	20	40	0	0
3	Less Good	26	52	0	0
4	Bad	1	2	0	0
Total		50	100	50	100

The results of trials in the large rhythmic gymnastics M-Gym media class provided information that showed significant differences. Students' rhythmic gymnastics graduation competency abilities before and after learning are significantly different. At the pretest stage, the students' rhythmic activity abilities were mostly classified as poor, namely 56%. This assessment is carried out on students before they are given learning using M-Gym media. However, after students in large classes were taught using M-Gym media, they showed different results. Most of the students have good abilities in rhythmic gymnastics. Students can carry out basic rhythmic activity movements well according to the directions given during learning using M-Gym media. The results of the large class assessment for students' rhythmic gymnastics graduation competency abilities can be seen in the following diagram.

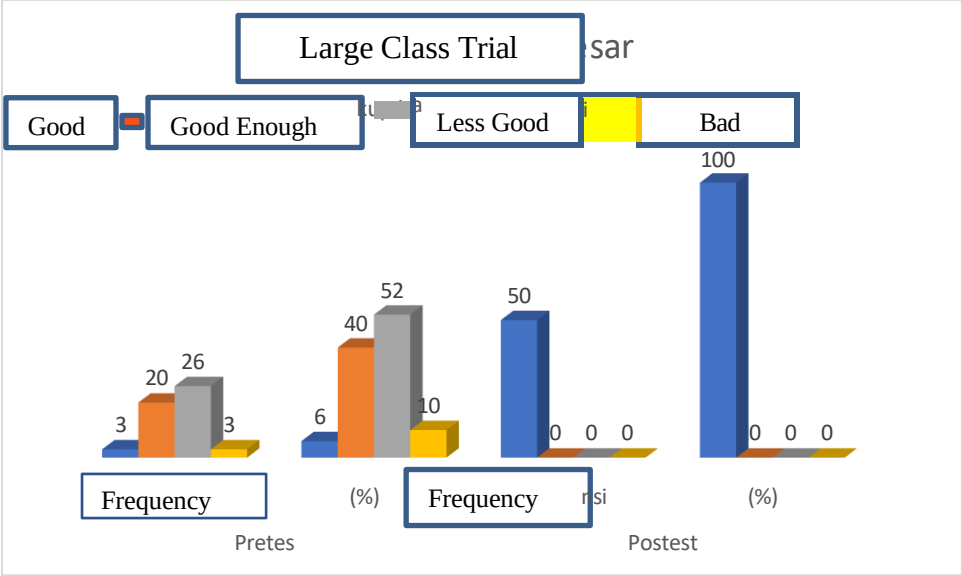

Figure 9. Comparison of Large Class Trial Capability

1.5 Final Product

After large-scale trials, the resulting model of the M-Gym media product becomes the final product that can be used en masse.

1. Development Background

Students have difficulty understanding the material given by the lecturer. Students ultimately cannot receive the material provided by the lecturer well because the media used does not attract students. As a result, many students when assessing their rhythmic gymnastics abilities did not pass their competency.

Lecturers need a learning media that attracts students and makes it easier to deliver material to students. The learning media that must be developed is flexible and easy for students to learn. Students who like gadgets can develop learning media that can be installed on gadgets so that students can study at any time and anywhere.

M-gym media is a solution for lecturers and students to improve their ability to pass rhythmic gymnastics competencies. This is because, with the m-gym media, students can learn rhythmic gymnastics material and movements at any time. Students not only study in class but can also study outside of class and outside class hours.

2. Development Goals

The objectives of developing this model include the following.

1) Creating learning media that is flexible and integrated with student life
2) Assist lecturers in delivering material to students.
3) Helping students to understand rhythmic gymnastics material.

3. Media Content

a. Login Page

The media developed by M-Gym when you first enter will be greeted with the following image.

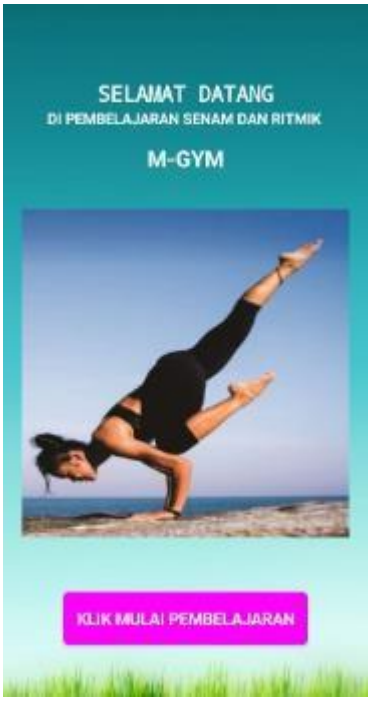

Figure 10. M-Gym Media Home Page

Students who enter the M-Gym media for rhythmic gymnastics can continue by pressing the learning entry menu. Students will enter the rhythmic gymnastics learning media application.

b. Application Home

The application homepage is the page that is displayed after students log in or enter the application. This home page is equipped with menu options such as profile, rhythmic gymnastics semester lecture plans, and rhythmic gymnastics material in the form of rhythmic gymnastics videos.

c. Profile

The profile menu contains a brief explanation of rhythmic gymnastics. Students can find out the definition or understanding of rhythmic gymnastics in a simple way so that it will provide an overview of rhythmic gymnastics. Students will have an idea of the content of rhythmic gymnastics material when they understand the definition of rhythmic gymnastics itself.

d. The semester lecture plan

The semester lecture plan is a joint agreement between students and lecturers. Lectures have a contract regarding the number of meetings, student rights and obligations. Students will understand and know what they will study for the next semester because there is already a complete the semester lecture plan

Students can also study at any time about the material that will be given at the semester lecture plan. Before the lecture meeting, students can study beforehand so that during face-to-face lectures they already have an idea of the material they will study. This semester's lecture plan also makes it easier for lecturers to control the material that will be given to students during the next semester. The semester lecture plan display in M-Gym media can be seen as follows.

Figure 11. The Semester Lecture Plan

e. The rhythmic gymnastics

The rhythmic gymnastics material in Android media contains videos of rhythmic gymnastics movements. This can make it easier for students to learn and practice performing rhythmic gymnastics movements. Students can practice at any time by following the movements in the learning media. The display of rhythmic gymnastics material on m-gym media can be seen as follows.

Figure 12. Rhythmic Gymnastic Materials

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