Development of an Android-Based Rhythmicgym Application to Improve Rhythmic Gymnastics Skills of Junior High School Students in Yogyakarta

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ABSTRACT:
Aim of this research aim to develop an Android-based Rhythmicgym application to improve the rhythmic gymnastics skills of Yogyakarta City Middle School students.

Method of this research use development (R&D). This research procedure adapts the ADDIE development model (analysis, design, development, implementation, evaluation). The research subjects were divided into three groups, namely: (1) three expert lecturers (2) small-scale tests were tested on 36 students and one Physical Education teacher, (3) large-scale tests were tested on 72 students and one Education teacher Physical. Data collection instruments used questionnaires and observation rubrics. The data analysis technique in the validation test uses Aiken V analysis, the feasibility test questionnaire is analyzed using a Likert scale.

Results The results of the material and media instrument validation tests obtained an average Aiken V value of 0.883 and 0.937 respectively with a very high validity category. The results of the instrument reliability test for material and media instruments respectively with Cronbach’s Alpha values of 0.761 and 0.652 mean that the instrument is declared reliable. The results of small-scale trials on 36 students and one Physical Education teacher showed a percentage of 78% in the appropriate category. The results of a large-scale trial that was tested on 72 students and one Physical Education Teacher showed a percentage of 81% with a very feasible category.

Conclusion Based on the research results, it can be concluded that the Android-based Rhythmicgym application is declared valid, reliable, feasible, practical and effective for improving the rhythmic gymnastics skills of Yogyakarta City Middle School students.

KEYWORDS: Application RhythmicGym, Skills, Rhythmic Gymnastics

I. INTRODUCTION

Sports and health physical education is a learning process that provides positive effects such as being skilled in carrying out basic movements in sports, besides being able to provide improvement and development in terms of affective, cognitive and social relations (Fardhany, 2016; Setyawan & Dimyati, 2015). 21st century skills crystallize in four basic skills, namely 4C skills, namely Creative, Collaborative, Communicative, and Critical Thinking (critical thinking) (Anggraeni et al, 2023). These four skills provide a strong foundation for the ability to adapt, innovate and solve problems in the era of the fourth generation industrial revolution. One thing that can be a means of connecting in processing 4C skills is learning media. In line with Tafonao (2018, p. 103) learning media is a tool in the teaching and learning process to stimulate the thoughts, feelings, attention and abilities or skills of learners so that they can encourage the learning process. Six categories the basis of media is text, audio, visual, video, engineering (manipulative) (objects), and people (Suryadi, 2020); Daulay & Priono, 2020).

Physical education sports and health at the level School Intermediate First (SMP) refers to Implementation Independent Learning Curriculum, in frame enhancement fitness physical Skills movement and health participant educate (Kemendikbudristek, 2022). Elements of movement skills and sub-elements of movement skills in rhythmic activities and elements of movement knowledge in rhythmic movement in phase D. Teachers can develop a flow of learning objectives, learning stages according to the needs and conditions of the school and teachers can adjust the gradation of specific movement skills for class VII, namely movement skills. Specifically, class VIII is specific movement variation skills and class IX is specific movement variation and combination skills (Physical & Health, nd). In Phase D, the gradation of movement skills in the movement skill elements of class
VIII students is variations in specific movement sequences in rhythmic movement activities, namely practicing the results of analysis of variations in movement sequences in rhythmic movement activities. Then, in the Movement Knowledge Element, class VIII students are identifying facts, concepts and procedures for movement skills in rhythmic activities. Specific movements in rhythmic movement activities are specific movements of arm swings and specific movements of foot steps. So in class VIII students will learn the skills of varying arm swings and rhythmic foot steps.

The presence of rhythmic movement activities in the sports and health physical education curriculum is considered by some teachers as burdensome material, this causes PJOK teachers to rarely provide rhythmic exercise material. This is confirmed by research by Kartiningtyas, et al (2018) which states that there are 30.4% who have taught rhythmic gymnastics to their students and 69.6% who have not taught rhythmic gymnastics to their students. This is based on not having supporting learning media, as well as teachers who do not master rhythmic gymnastics material, especially teachers who do not like teaching rhythmic movement (Abdullah & Lubis, 2020; Amri-Dardari et al, 2022).

Students as objects in learning rhythmic movement activity material find it difficult to understand rhythmic movement activity material. In line with Azprizal’s (2022) literature which states that most students are less enthusiastic and choose game sports rather than learning rhythmic gymnastics, this is shown when given the choice of sports and health physical education subject matter for the following week, the majority prefer game sports material, than rhythmic gymnastics. This is of course a challenge for a teacher to increase students' interest in following rhythmic gymnastics material. The right learning media will really help students' learning processes and outcomes (Muhammad Rusli & Dadang Hermawan, 2017). In line with Basri (2018) stated that the assistance of audio-visual media in learning rhythmic gymnastics has an effect on student learning outcomes. The average score in the pre-cycle was 67.2 (not completed), this was still below the KKM (75), in the first cycle the students’ average score increased to 72.25 (not completed), but still below the KKM, and in implementation I cycle II, the average student score has reached 77.77 (completed), which means they have reached the KKM score (75). It can be concluded that the use of learning media makes students motivated and happy (Artanty et al, 2023).

Development research on rhythmic gymnastics/basic rhythmic gymnastics based on Android applications has been carried out by Nuritasari (2022). This research produces products in the form of videos and applications that explain the process for learning exercises to develop a model of the basic elements of rhythmic gymnastics based on an Android application. The resulting product has specifications in the form of pictures, videos and procedures for how to perform the basic elements of rhythmic gymnastics, jumps, turns and balance in accordance with FIG rules. simply. However, this research is still limited in its use only to athletes, and when carrying out the research process, athletes do not immediately master the basic element movements given so it requires time and guidance from the coach for athletes to be able to carry out the movements well and correctly. Therefore, this development research will be adapted to the characteristics and learning outcomes of junior high school students in the form of the Android-based RhythmicGym application to improve the rhythmic gymnastics skills of junior high school students. This application will be equipped with history, rhythmic gymnastics material and videos of various types of basic footstep movements and basic arm swing movements in the form of videos, and a competency test in the form of a game making variations of rhythmic gymnastics movements.

II. METHOD

This research is study development (R&D). In research developed products is Android-based rhythmic gymnastics application to improve the rhythmic gymnastics skills of Yogyakarta City Middle School students. Procedure study adapting the ADDIE development model, namely a development model consisting of of five stages which include analysis, design, development, implementation and evaluation. The research subjects were divided into three groups, namely: (1) three expert lecturers (2) small-scale tests were tested on 36 students and one Physical Education teacher, (3) large-scale tests were tested on 72 students and one Education teacher Physical. Data collection instruments used questionnaires and observation rubrics. The data analysis technique in the validation test uses Aiken V analysis, the feasibility test questionnaire is analyzed using a Likert scale.

III. RESULTS AND DISCUSSION

Development carried out in study This is application Rhythmicgym Android based for increase rhythmic gymnastics skills participant Yogyakarta city junior high school student. Expert validation is carried out to determine the suitability of the instrument to guide application development. Researchers asked for expert assistance to assess the initial product development draft, several experts were involved including media experts and material experts. The validation results analyzed using Aiken V analysis are described in the following table:
Table 1. Results of Aiken V Media Expert Analysis

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>$\sum S$</th>
<th>V</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Appearance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>The appearance design (attractiveness, format, color combination, menu appearance) is appropriate</td>
<td>10</td>
<td>0.833333</td>
<td>Tall</td>
</tr>
<tr>
<td>2</td>
<td>The type and size of the letters are appropriate and attractive to users</td>
<td>12</td>
<td>1</td>
<td>Very high</td>
</tr>
<tr>
<td>3</td>
<td>The combination of colors and button sizes in the application is appropriate and harmonious</td>
<td>11</td>
<td>0.916667</td>
<td>Very high</td>
</tr>
<tr>
<td>4</td>
<td>The layout composition (title, text, images, navigation) is appropriate</td>
<td>10</td>
<td>0.833333</td>
<td>Very high</td>
</tr>
<tr>
<td>5</td>
<td>Illustrations, drawings and photos with the concept of the application are appropriate</td>
<td>12</td>
<td>1</td>
<td>Very high</td>
</tr>
<tr>
<td></td>
<td><strong>Audio</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>The audio used in the application varies</td>
<td>12</td>
<td>1</td>
<td>Very high</td>
</tr>
<tr>
<td>7</td>
<td>The audio in the video sounds clear</td>
<td>12</td>
<td>1</td>
<td>Very high</td>
</tr>
<tr>
<td>8</td>
<td>Background or supporting music in accordance with gymnastics rhythm participant junior high school student</td>
<td>12</td>
<td>1</td>
<td>Very high</td>
</tr>
<tr>
<td></td>
<td><strong>Grammar</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>The delivery style in the application is easy to understand</td>
<td>11</td>
<td>0.916667</td>
<td>Very high</td>
</tr>
<tr>
<td>10</td>
<td>The language used is appropriate to the context known to students</td>
<td>12</td>
<td>1</td>
<td>Very high</td>
</tr>
<tr>
<td>11</td>
<td>The language used does not contain the use of words or phrases that could give rise to multiple interpretations</td>
<td>11</td>
<td>0.916667</td>
<td>Very high</td>
</tr>
<tr>
<td>12</td>
<td>Correct use of punctuation</td>
<td>12</td>
<td>1</td>
<td>Very high</td>
</tr>
<tr>
<td>13</td>
<td>Language used in accordance with PUEBI (General Guide to Indonesian Spelling)</td>
<td>12</td>
<td>1</td>
<td>Very high</td>
</tr>
<tr>
<td></td>
<td><strong>Programming</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Installing the application to the smartphone is easy</td>
<td>10</td>
<td>0.833333</td>
<td>Very high</td>
</tr>
<tr>
<td>15</td>
<td>The application size is not too heavy</td>
<td>9</td>
<td>0.75</td>
<td>Tall</td>
</tr>
<tr>
<td>16</td>
<td>The application does not take a long time to load</td>
<td>10</td>
<td>0.833333</td>
<td>Very high</td>
</tr>
<tr>
<td></td>
<td><strong>Use</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Applications on media are in accordance with the goals to be achieved</td>
<td>12</td>
<td>1</td>
<td>Very high</td>
</tr>
<tr>
<td>18</td>
<td>The images displayed on the media make it easier for users</td>
<td>12</td>
<td>1</td>
<td>Very high</td>
</tr>
<tr>
<td>19</td>
<td>The videos displayed in the application make it easier for users to understand the material</td>
<td>12</td>
<td>1</td>
<td>Very high</td>
</tr>
<tr>
<td>20</td>
<td>The application can be used practically</td>
<td>11</td>
<td>0.916667</td>
<td>Very high</td>
</tr>
</tbody>
</table>

The Aiken V value is obtained from the sum of the scores from each validator for each item and then calculated using the Aiken V formula. Of the 20 validated items, the category range is in the high to very high category. If conclusions are drawn by averaging the 20 items assessed, the Aiken V value reaches 0.9375, which is included in the very high category. This can be interpreted as meaning that the media instrument is considered valid to be used.

Table 2. Results of Aiken V Material Expert Analysis

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>$\sum S$</th>
<th>V</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Suitability of Content/Material</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Suitability of material to research objectives</td>
<td>12</td>
<td>1</td>
<td>Very high</td>
</tr>
<tr>
<td>2</td>
<td>The material used is integrated with the Independent Middle School Curriculum</td>
<td>11</td>
<td>0.916667</td>
<td>Very high</td>
</tr>
<tr>
<td>3</td>
<td>The material covers important aspects of basic rhythmic gymnastics movements</td>
<td>12</td>
<td>1</td>
<td>Very high</td>
</tr>
</tbody>
</table>
Development of an Android-Based Rhythmic Gym Application to Improve Rhythmic Gymnastics Skills of Junior High School Students in Yogyakarta

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Rating</th>
<th>Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>The material covers the basic concepts of rhythmic arm swing exercises</td>
<td>12</td>
<td>Very high</td>
</tr>
<tr>
<td>5</td>
<td>The material covers the basic concepts of rhythmic footstep gymnastics</td>
<td>12</td>
<td>Very high</td>
</tr>
<tr>
<td>6</td>
<td>The basic movement material for arm swing rhythmic gymnastics is presented in a variety of ways</td>
<td>10</td>
<td>Very high</td>
</tr>
<tr>
<td>7</td>
<td>Basic movement material for rhythmic gymnastics. The footsteps presented are varied</td>
<td>11</td>
<td>Very high</td>
</tr>
<tr>
<td>8</td>
<td>The material presented is characteristic of middle school children</td>
<td>10</td>
<td>Very high</td>
</tr>
<tr>
<td>9</td>
<td>The material is presented from easy to difficult</td>
<td>9</td>
<td>Tall</td>
</tr>
</tbody>
</table>

**Construction**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Rating</th>
<th>Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>The material discussed is deep enough so that users can understand the material presented</td>
<td>9</td>
<td>Tall</td>
</tr>
<tr>
<td>11</td>
<td>The material presented encourages curiosity</td>
<td>10</td>
<td>Very high</td>
</tr>
<tr>
<td>12</td>
<td>The characteristics of the material are in accordance with the form of application media being developed</td>
<td>12</td>
<td>Very high</td>
</tr>
<tr>
<td>13</td>
<td>The material prepared includes a variety of topics and sub-topics in the basic movements of rhythmic gymnastics</td>
<td>11</td>
<td>Very high</td>
</tr>
<tr>
<td>14</td>
<td>The material presented is in accordance with learning needs</td>
<td>11</td>
<td>Very high</td>
</tr>
</tbody>
</table>

**Language in Teaching Materials**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Rating</th>
<th>Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>The systematic presentation of material on application media is effective and comprehensive</td>
<td>12</td>
<td>Very high</td>
</tr>
<tr>
<td>16</td>
<td>The material presented does not contain the use of words or phrases that could give rise to multiple interpretations</td>
<td>10</td>
<td>Very high</td>
</tr>
<tr>
<td>17</td>
<td>The use of words is appropriate to the level of understanding of junior high school students</td>
<td>9</td>
<td>Tall</td>
</tr>
<tr>
<td>18</td>
<td>Ease of understanding the words in the material</td>
<td>9</td>
<td>Tall</td>
</tr>
<tr>
<td>19</td>
<td>The language used describes a situation or context that is known to students</td>
<td>10</td>
<td>Very high</td>
</tr>
<tr>
<td>20</td>
<td>Language used in accordance with PUEBI (General Guide to Indonesian Spelling)</td>
<td>10</td>
<td>Very high</td>
</tr>
</tbody>
</table>

**Average**

<table>
<thead>
<tr>
<th>Rating</th>
<th>Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.833333</td>
<td>Very high</td>
</tr>
</tbody>
</table>

Based on the table of Aiken V analysis results for material instruments, the Aiken V value is obtained for each item. Of the 20 validated items, the category range is in the high to very high category. If conclusions are drawn by averaging the 20 items assessed, the Aiken V value is 0.83333, which is included in the very high category. This can be interpreted as meaning that the material instrument is considered valid to be used.

**Table 3. Reliability of Rhythmic Gym Application Media Instruments**

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>No of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.652</td>
<td>20</td>
</tr>
</tbody>
</table>

**Table 4. Reliability of Material Instruments**

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>No of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.761</td>
<td>20</td>
</tr>
</tbody>
</table>
Development of an Android-Based Rhythmicgym Application to Improve Rhythmic Gymnastics Skills of Junior High School Students in Yogyakarta

Based on the results of the reliability test, it was found that the Cronbach's Alpha values for media instruments and material instruments were respectively 0.652, 0.761. According to Ghozali (2018), Cronbach's Alpha value is acceptable if the value is greater than 0.6. Because the Cronbach's Alpha value in this study for both instruments is more than 0.6, it can be concluded that the material instruments and media instruments are reliable to be used.

Development Trials Application Android Based RhythmicGym

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Percentage</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The appearance design (attractiveness, format, color combination, menu appearance) is appropriate</td>
<td>74%</td>
<td>Worthy</td>
</tr>
<tr>
<td>2</td>
<td>The type and size of the letters are appropriate and attractive to users</td>
<td>77%</td>
<td>Worthy</td>
</tr>
<tr>
<td>3</td>
<td>The combination of colors and button sizes in the application is appropriate and harmonious</td>
<td>76%</td>
<td>Worthy</td>
</tr>
<tr>
<td>4</td>
<td>The layout composition (title, text, images, navigation) is appropriate</td>
<td>76%</td>
<td>Worthy</td>
</tr>
<tr>
<td>5</td>
<td>Illustrations, drawings and photos with the concept of the application are appropriate</td>
<td>83%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>6</td>
<td>The audio used in the application varies</td>
<td>77%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>7</td>
<td>The audio in the video sounds clear</td>
<td>84%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>8</td>
<td>Background or supporting music in accordance with gymnastics rhythm participant junior high school student</td>
<td>81%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>9</td>
<td>The delivery style in the application is easy to understand</td>
<td>79%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>10</td>
<td>The language used is appropriate to the context known to students</td>
<td>83%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>11</td>
<td>The language used does not contain the use of words or phrases that could give rise to multiple interpretations</td>
<td>81%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>12</td>
<td>Correct use of punctuation</td>
<td>80%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>13</td>
<td>The language used is in accordance with PUEBI (General Guide to Indonesian Spelling)</td>
<td>83%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>14</td>
<td>Installing the application to the smartphone is easy</td>
<td>59%</td>
<td>Decent Enough</td>
</tr>
<tr>
<td>15</td>
<td>The application size is not too heavy</td>
<td>70%</td>
<td>Worthy</td>
</tr>
<tr>
<td>16</td>
<td>The application does not take a long time to load</td>
<td>68%</td>
<td>Worthy</td>
</tr>
<tr>
<td>17</td>
<td>Applications on media are in accordance with the goals to be achieved</td>
<td>79%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>18</td>
<td>The images displayed on the media make it easier for users</td>
<td>81%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>19</td>
<td>The videos displayed in the application make it easier for users to understand the material</td>
<td>82%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>20</td>
<td>The application can be used easily</td>
<td>76%</td>
<td>Worthy</td>
</tr>
<tr>
<td></td>
<td><strong>Average</strong></td>
<td>78%</td>
<td><strong>Worthy</strong></td>
</tr>
</tbody>
</table>

The results of the assessments by 36 students and 1 Physical Education teacher on the items assessed were added up, the percentage of achievement calculated, and converted to determine the category. Based on the table of small-scale trial results for the development of the RhythmicGym application above, the 20 items assessed for their feasibility were in the feasible to very feasible category. If you look for the average for the 20 items assessed, the product is considered suitable for use with a percentage of 78%.
Development of an Android-Based Rhythmicgym Application to Improve Rhythmic Gymnastics Skills of Junior High School Students in Yogyakarta

Table 6. Results of Large-Scale Trials for Android-Based RhythmicGym Application Development

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Percentage</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The appearance design (attractiveness, format, color combination, menu appearance) is appropriate</td>
<td>81%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>2</td>
<td>The type and size of the letters are appropriate and attractive to users</td>
<td>81%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>3</td>
<td>The combination of colors and button sizes in the application is appropriate and harmonious</td>
<td>82%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>4</td>
<td>The layout composition (title, text, images, navigation) is appropriate</td>
<td>81%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>5</td>
<td>Illustrations, drawings and photos with the concept of the application are appropriate</td>
<td>83%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>6</td>
<td>The audio used in the application varies</td>
<td>83%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>7</td>
<td>The audio in the video sounds clear</td>
<td>86%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>8</td>
<td>Backsound or supporting music in accordance with gymnastics rhythm participant junior high school student</td>
<td>84%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>9</td>
<td>The delivery style in the application is easy to understand</td>
<td>84%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>10</td>
<td>The language used is appropriate to the context known to students</td>
<td>83%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>11</td>
<td>The language used does not contain the use of words or phrases that could give rise to multiple interpretations</td>
<td>82%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>12</td>
<td>Correct use of punctuation</td>
<td>82%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>13</td>
<td>The language used is in accordance with PUEBI (General Guide to Indonesian Spelling)</td>
<td>83%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>14</td>
<td>Installing the application to the smartphone is easy</td>
<td>69%</td>
<td>Worthy</td>
</tr>
<tr>
<td>15</td>
<td>The application size is not too heavy</td>
<td>76%</td>
<td>Worthy</td>
</tr>
<tr>
<td>16</td>
<td>The application does not take a long time to load</td>
<td>74%</td>
<td>Worthy</td>
</tr>
<tr>
<td>17</td>
<td>Applications on media are in accordance with the goals to be achieved</td>
<td>84%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>18</td>
<td>The images displayed on the media make it easier for users</td>
<td>84%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>19</td>
<td>The videos displayed in the application make it easier for users to understand the material</td>
<td>84%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td>20</td>
<td>The application can be used easily</td>
<td>82%</td>
<td>Very Worth It</td>
</tr>
<tr>
<td></td>
<td><strong>Average</strong></td>
<td><strong>81%</strong></td>
<td><strong>Very Worth It</strong></td>
</tr>
</tbody>
</table>

Based on test results scale The magnitude presented in the table above is known as the average for the 20 items assessed eligibility by 72 participants students and 1 PJOK teacher included in very worthy category with percentage 81%. These results have increased from the results of previous trials on a smaller scale, where there was an increase of 4%. This increase shows a good thing that there are improvements that support product quality so that it can be used on a wider scale.

IV. CONCLUSION

This research produces a product in the form of an Android application called RhythmicGym which aims to improve the rhythmic gymnastics skills of foot steps and arm swings of junior high school students, especially class VIII. This application was developed by taking into account several developments in terms of objectives, samples, methods, procedures and types of activities. This application can be installed and operated on an Android smartphone, equipped with history features, rhythmic gymnastics material, videos of basic foot steps and basic arm swing movements, as well as a competency test in the form of a game making variations of rhythmic gymnastics movements. Thus, the RhythmicGym application was developed into a feasible, practical and effective tool in improving rhythmic gymnastics skills for junior high school students in Yogyakarta City.

Based on material and media instrument validation tests, the average Aiken V scores were respectively 0.883 and 0.937 with very high validity categories. Meanwhile, the instrument reliability values for material and media instruments were respectively...
Development of an Android-Based Rhythmicgym Application to Improve Rhythmic Gymnastics Skills of Junior High School Students in Yogyakarta

with Cronbach's Alpha values of 0.761 and 0.652. It can be concluded that the instrument prepared is valid and reliable enough to be used. The results of small-scale trials on 36 students and 1 Physical Education Teacher show that the development carried out is suitable for use with a percentage achievement of 78% in the feasible category. Meanwhile, in a large-scale trial which was tested on 72 students and 1 Physical Education Teacher, the percentage was 81% in the very feasible category. The percentage increase of 4% from the previous test shows an improvement in the quality of the media being developed so that the Android-based RhythmicGym application is considered very suitable for use in improving the rhythmic gymnastics skills of Yogyakarta City Middle School students.

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