Development of iSpring 9-Based Learning Media Using Android to Increase Learning Independence in Basic Pattern Dimensions

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Abstract: This research was developmental research that aimed to develop iSpring 9-based learning media using Android to increase student learning independence in basic fashion skills for Class X of SMK Negeri 2 Boyolangu, Tulungagung. The development method used the ADDIE model which includes: Analysis, Design, Development, Implementation and Evaluation. Validation was carried out by two expert validators: material experts and media experts. The data collection technique used a questionnaire. Validation results from material experts met the requirements of 85.00%, which means very valid, and the results from media experts met the requirements of 80.00%, which also means valid. A trial was conducted at the implementation stage. The results were that 34 students obtained an average score of 84.48% with very good qualifications, meaning this media is easy for students to learn. Therefore, it showed that the media is very suitable as a learning medium for pattern-making and helping students' teaching and learning process. A further developing learning media was suggested for the application to be developed and equipped with dimensions in basic fashion skills subjects following the school curriculum to sum the learning in one application.

Abstrak: Penelitian ini merupakan penelitian pengembangan yang bertujuan untuk mengembangkan media pembelajaran berbasis iSpring 9 menggunakan Android untuk meningkatkan kemandirian belajar siswa pada keterampilan dasar tata busana kelas 10 SMK Negeri 2 Boyolangu Tulungagung. Metode pengembangan menggunakan model ADDIE yang meliputi: Analisis, Desain, Pengembangan, Implementasi dan Evaluasi. Validasi dilakukan kepada dua validator ahli yaitu ahli materi dan ahli media. Teknik pengumpulan data menggunakan kuisioner Hasil Validasi ahli materi memenuhi syarat 85,00% yang artinya sangat valid, hasil ahli media memenuhi syarat 80,00% yang artinya valid. Pada tahap implementasi dilakukan uji coba. Hasil uji coba lapangan yang dilakukan kepada siswa Desain Busana kelas 10 sebanyak 34 siswa memperoleh nilai rata-rata 84,48% dengan kualifikasi sangat baik, yang artinya media ini mudah dipelajari siswa. Berdasarkan hasil pengujian media pembelajaran berbasis iSpring 9 menggunakan Android menunjukkan bahwa media sangat layak digunakan sebagai media pembelajaran pembuatan pola dan membantu proses belajar mengajar siswa. Saran penelitian dalam pengembangan media pembelajaran lebih lanjut adalah media aplikasi ini dapat dikembangkan dan dilengkapi dimensi pada mata pelajaran dasar-dasar keahlian busana sesuai kurikulum di sekolah, sehingga pembelajaran dalam satu mata pelajaran dapat dirangkum dalam satu aplikasi belajar.
A. Introduction

Learning is an activity process carried out deliberately to change attitudes and behavior to be different from before permanently. There are four characteristics of learning, namely: change, permanent, and existence (Setiawati, 2018) effort, and changes due to the learning process. Learning in pattern-making subjects uses a new paradigm curriculum. The use of the new paradigm curriculum at SMKN 2 Boyolangu is not yet comprehensive, in fact, only Class X applies this curriculum, in which teaching and learning activities are still collaborated by teachers from the previous curriculum. The teaching materials used in this subject are the books and materials from the teacher. Magdalena et al. (2020) suggested that teaching materials can also be interpreted as all forms of materials arranged systematically which allows students to learn independently and designed following the applicable curriculum. However, it is said that materials in the library, namely the basic pattern dimensions, still do not foster interest in learning. This condition was caused by the material being difficult to understand, and this was discovered after researchers made initial observations in February 2021 while carrying out Field Practical lecture activities, usually abbreviated as KPL through interviews with teachers and repeated observations on January 2022 (Darihastining et al., 2022). The researcher took part in the teaching process in person, in WhatsApp class groups, and Google Classroom. It was found that the problem was a lack of interesting learning media during the learning process. The teaching materials and presentation were not optimal, making it difficult for students to study independently and resulting in them not understanding the assignments. This was proven by the fact that 7 out of 34 students did not do their assignments and 9 out of 37 students were late in submitting their during class. The problem, according to students who did not submit after being interviewed via WhatsApp, was that they did not understand the pattern-making material. Basic pattern-making is divided into several systems: dressmaking, Soen, and neyneke systems (Yosanti, 2019).

The Android learning media using iSpring 9 could develop student learning potential to support the process. This has been proven in similar research which stated that after implementing iSpring-based interactive media, the achievement increased to 90.75 from the previous 59.5. Media consists of tools and methods used by educators and students in schools (Umar, 2017). In this application, a quiz feature will be provided to ease educators in providing training material in each dimension and the results are directly connected to the teacher’s email. The additional audio as an innovation in the subject helped teachers to explain the material could be recorded and played repeatedly. Images such as pattern pictures and videos such as pattern-making videos could be connected to YouTube and published media for PC, Web, and Android. With many students already having Android devices, it will be easier for students to access this learning media (Solihati, 2022).

The problem in class X SMKN 2 Boyolangu, East Java, is the lack of interesting learning media when learning to make basic patterns, causing students to not understand the material optimally, and thus difficulties in doing the assignments (Saadah & Hasanah, 2023). The use of media with Android and iSpring technology will provide new color and be easier to understand because it has advantages compared to previous media.
Some of the advantages are: (1) students can understand learning at the beginning before the process so that when students have classes with teachers, they are equipped, (2) teaching materials can be accessed easily anywhere and anytime accompanied by an adequate device, (3) the presentation makes it easier for educators to update the material, (4) easy to use and saves costs for students. One type of interactive learning media that can be run using a computer or smartphone is video (Masamah & Salsabila, 2022). The use of Android in learning media can help the learning process.

The general research objective was to develop learning media products based on iSpring 9 using an Android application for basic pattern creation material. Meanwhile, the specific aim was to see the suitability of the product by involving material experts and media experts, as well as seeing the results of product implementation for class X fashion design students.

B. Method

This research was development research and used in the ADDIE model (Analyze, Design, Development, Implementation, Evaluation) (Sulistyawati et al., 2018). The ADDIE development method in its stages can be seen in the following picture:

![ADDIE Model](image)

**Figure 1. Stages of the ADDIE Model**

The complete research flow using the ADDIE model can be described in the table as follows:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Activity</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Analysis: identification stage of learning design, previous media, supporting studies and the need to create &quot;mariposa&quot; media.</td>
<td>Analysis Result Documents needed to create MARIPOSA learning media</td>
</tr>
</tbody>
</table>
The analysis stage is the stage of the ADDIE development model where problems and needs will be identified. Suryani et al. (2018) stated that before carrying out this stage, researchers should take initial data samples where they collect problems and needs so that they can design learning media according to the needs of learning activities. The results of collecting initial data problems will be carried out in the Analysis stage, where the expected conditions related to the media will be explained (Utomo et al., 2021).

The design stage is the design of learning media following the structure and objectives and involves several planning processes: (1) determining the materials that will be included in the learning media, (2) making storyboards and media flowcharts, and (3) making materials and images on learning media. Creating a storyboard serves to make it easier for researchers to perfect the product. A storyboard is a storyline according to the script (Andreas, 2013).

In the development stage, the researchers conducted media creation procedures with the result being a pattern learning application product using iSpring 9 software. Before being converted into application form, researchers designed the material using PowerPoint and Photoshop applications as media to perfect the content. After the product was made, the researchers then tested the product's validity with material experts and media experts.

The implementation stage was carried out after the researcher revised the input and suggestions from the validator. A total of 34 Class 10 Fashion Design students were given learning media products to test the initial product and a sheet on how to use the product since they had never used learning media using Android applications in practical subjects (Setiawan et al., 2023). Afterwards, students were given directions before implementation, such as the Android smartphone with a minimum type (0.5 lollipop). This stage aimed to determine the effectiveness of the media on the student learning process.

The evaluation stage at this stage was carried out to improve information related to the performance of learning media. Researchers will receive criticism and suggestions from two experts.

This research used a Likert scale to measure the validity. The scoring guidelines are as follows:
Table 2. Likert Scale

<table>
<thead>
<tr>
<th>Description</th>
<th>Score value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very suitable</td>
<td>4</td>
</tr>
<tr>
<td>Suitable</td>
<td>3</td>
</tr>
<tr>
<td>Not Suitable</td>
<td>2</td>
</tr>
<tr>
<td>Extremely Unsuitable</td>
<td>1</td>
</tr>
</tbody>
</table>

Sugiyono (2016)

This research was development research with the types of data being qualitative and quantitative research. Qualitative data was obtained from validation results provided by expert validators in the form of criticism and suggestions regarding the media products (Indawati et al., 2022). Meanwhile, quantitative data was in the form of a percentage of the average questionnaire score, from this, we would know the suitability of the media as a learning medium. This data analysis was carried out to determine the level of validity and reliability of media product suitability. The following is a formula adapted by Akbar (2017) to determine quantitative data:

\[ V_{-ah} = \frac{Tse}{Tsh} \times 100\% \]

Formula description:
\[ V_{-ah} = \text{Validation} \]
\[ Tse = \text{Total empirical score} \]
\[ Tsh = \text{Total expected score} \]
\[ 100\% = \text{Constant} \]

C. Result and Discussion

Result
The research results can be seen in the following presentation.

1) Analysis Results: Limited learning resources became a problem. In the ongoing learning process, there are obstacles that educators and students go through in performing activities at school. Materials in the library to support the basic subjects of fashion skills, that is the basic dimensions of patterns, still do not foster a sense of interest caused by the uninteresting material just reading it.

2) Design Results: designing media products to solve it using iSpring-based Android applications. The designed results are as follows: a) the aim of developing MARIPOSA media was to attract students' interest in learning, and foster enthusiasm for learning the process of making patterns using easy media, b) determine the users of MARIPOSA media products, namely class X Fashion Design students, c) describe the product in chart form as follows:
1. Development Results

At this stage, the researcher creates a media product according to the design. After the product was finished, researchers continued with preparing validation instruments by material experts and media experts (Nurlela et al., 2020). The determining aspects for material experts included: content quality, presentation suitability, and practice questions suitability (Akbar, 2017). Meanwhile, the determined aspects for media experts included: software engineering aspects, learning design, and visual communication aspects (Akbar, 2017). This development research produced an application learning media product on Android based on iSpring 9 resulting in an Android application on fashion skills subjects, precisely the basic dimensions of patterns, in the application containing reading material that can be downloaded, video material which was connected to YouTube, and podcasts for audio learning. The following is a description of the display on the media called MARIPOSA (let's learn basic patterns):

a. Application Opening Display

The application opening contains the title and start button to start the usage. The menu section is filled with buttons for materials, podcasts, evaluations, and reference lists. It also contains a developer profile and how to use the product.

Figure 2. Mariposa Product Design

Figure 3. Display Cover, Menu, Instructions and Developer Profile
b. Material View

In the material section, the media contains reading material that can be downloaded by students and learning videos that are connected directly to the YouTube application.

Figure 4. View PDF Materials and YouTube videos
Figure 5. Measurement Material Display

Figure 6. Pattern-Making Material Display
c. Podcast View

The podcast display contains podcasts related to pattern-making learning material.

![Podcast View](image)

Figure 7. Podcast View

d. Evaluation View

The evaluation display contains questions related to the material, in essay format and multiple choice questions format.

![Evaluation View](image)

Figure 8. Evaluation View

2. Results of Research Data Analysis

In developing the learning media using an Android application for the pattern-making subject at SMKN 2 Boyolangu, there were two expert validators where media expert validation was the program staff of the Education and Learning Development Institute, Universitas Negeri Malang and the material expert was a Fashion Design teacher who teaches pattern-making subject at SMK Negeri 2 Boyolangu Tulungagung. The trial was carried out on 34 class 10 fashion design students. The following is a description of the analysis of the validation and trial results:
a. Material Expert Validation Results

Validation by material experts used an assessment questionnaire which contains three aspects: the content quality aspect, the presentation aspect, and the question practice aspect. Before testing, the Android was validated first. The results of the suitability assessment by material experts in the form of a diagram can be seen in the following picture:

![Material Expert Validation Results Diagram](image)

The data results on the content quality aspect obtained a percentage of 90.00%; thus, it can be seen that the content of the material in the video follows the learning objectives conveyed by the students. The presentation aspect stated that the assessment percentage obtained was 70.00%. Therefore, the presentation of material on learning media is systematic. Based on the obtained material expert validation assessment, the calculation of all aspects is as follows:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Score Results</th>
<th>Maximum Score</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Quality</td>
<td>36</td>
<td>40</td>
<td>90 %</td>
</tr>
<tr>
<td>Presentation</td>
<td>14</td>
<td>20</td>
<td>70%</td>
</tr>
<tr>
<td>Exercises</td>
<td>18</td>
<td>20</td>
<td>90%</td>
</tr>
<tr>
<td>Total Score</td>
<td>68</td>
<td>80</td>
<td>85%</td>
</tr>
</tbody>
</table>

b. Media Expert Validation Results

Media expert validation results were obtained by filling out a questionnaire carried out by media experts, with three aspects of assessing aspects of software engineering, learning design, and visual communication (Elmunsyah et al., 2021). The results of the media suitability assessment by media experts can be seen in the figure diagram:
1) The results on the software engineering aspect explained that the assessment percentage obtained was 75.00% which means valid
2) The results on the learning design aspect stated 82.50% which means that the video design from the main display to the material is very valid and good to use.
3) The results on the visual communication aspect was 79.16%, meaning it is conveyed well and is valid for use.
4) Based on the assessment results obtained from media experts, the calculation of all aspects as follows:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Score Results</th>
<th>Maximum Score</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>content quality</td>
<td>12</td>
<td>16</td>
<td>75.00 %</td>
</tr>
<tr>
<td>Presentation</td>
<td>33</td>
<td>40</td>
<td>82.50 %</td>
</tr>
<tr>
<td>Exercises</td>
<td>19</td>
<td>24</td>
<td>79.16 %</td>
</tr>
<tr>
<td>Total Score Material</td>
<td>64</td>
<td>80</td>
<td>80.00 %</td>
</tr>
</tbody>
</table>

3. Results of Trial Implementation

Data analysis was carried out using validity to measure the suitability of media products. Suggestions and criticism from material experts and media experts were responded to by researchers and have been declared appropriate. Data from the trial results were obtained from a questionnaire that had been filled in by students with a total of 34 students in class X at SMKN 2 Boyolangu Tulungagung. These three aspects were: the material
presentation aspect, the media display aspect, and the benefits aspect. Based on the student the calculation of the assessment of all aspects was put in the diagram below:

![Diagram of the Results of Implementing Student Trials](image)

**Figure 11.** Diagram of the Results of Implementing Student Trials

1) The data displays the obtained percentage was 86.15%, meaning that the display aspect of this media can attract students’ attention to use.
2) The data obtained 83.55%, thus, the presentation aspect of this media material can be conveyed well following the learning objectives conveyed.
3) The data obtained a percentage of 84.80%, which means that the display aspect could provide exercises for students to support their independent learning process in making basic patterns.

Based on the results of student responses, the calculation of all aspects can be concluded as follows:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Score Results</th>
<th>Maximum Score</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media Display</td>
<td>703</td>
<td>816</td>
<td>86.15 %</td>
</tr>
<tr>
<td>Presentation of Material</td>
<td>1250</td>
<td>1496</td>
<td>83.55 %</td>
</tr>
<tr>
<td>Benefits</td>
<td>346</td>
<td>408</td>
<td>84.80 %</td>
</tr>
<tr>
<td>Total Score of student responses</td>
<td>2298</td>
<td>2720</td>
<td>84.48 %</td>
</tr>
</tbody>
</table>

### Table 5. Calculation Results and Assessment of the Entire Student Trial

4. **Evaluation Results**

The product was considered suitable and there are no suggestions for improvement from media experts and material experts, so the product could be implemented directly for class.
Discussion

The "MARIPOSA" media which was created through a feasibility test process by material experts and media experts was tested on students. The aspects were: the operational aspect, image selection on measurement material aspect, image selection on pattern-making material aspect, text readability aspect, display design aspect, and language selection aspect. The operational aspect of learning media obtained 86.03%, meaning that the learning media is easy to operate and very suitable. Media that is easy to operate shows that this media can be used as a support for independent learning by students.

Besides, learning media is anything that can be used to convey messages or information in the teaching and learning process so that it can stimulate students' attention and interest in learning. The use of media in the learning process can have three implications, including teacher, students, and the learning process (Magdalena et al., 2021). It was concluded that interactive multimedia on plant tissue material affected the activeness and knowledge of class XI students of SMA Negeri 6 Darul Makmur.

Therefore, learning media was made in Android applications to ease students' understanding. Similar research was also conducted by Fahriana & Suprihatin (2018), who produced learning videos on basic practical system patterns that were good and suitable for use as learning media. This is in line with Maimunah (2016) statement that good media is media that can be accessed anywhere. Based on the image selection on measurement material aspect, the percentage was 86.03%, meaning that learning media images are easy for students to understand.

This result followed the statement of Magdalena et al. (2020) Images are tools that can be used by teachers in the learning process to create meaningful learning for students and greatly influence the formation of students' interest in learning. Based on image selection on pattern-making material aspect, the percentage was 86.76%, meaning that pattern-making images in learning media are easy for students to understand. The images need to pay attention to their suitability for the media material because pattern-making is done practically. This follows the statement of Utami et al. (2020) The use of image media is capable improve learning outcomes, therefore the use of image media is considered effective in assisting activities learning in student learning outcomes.

Based on the text readability aspect, the percentage was 84.55%, meaning that learning media patterns using this Android application are easy to read with the use of appropriate fonts. The media picked a formal font to display the content of the material to make it easier for students to understand during their reading sessions. Meanwhile, additional displays such as titles and subtitles in the application were given varying fonts to avoid looking monotonous. This is following Asyhar & Harjono (2012) statement that the media must be clear and neat in terms of appearance which includes layout such as sound, images, writing and graphic illustrations so that the benefits of the media itself are maximized in supporting learning. The display design aspect obtained a percentage of 86.76%, meaning that the appearance attracted students' interest in learning to use the application. This follows Asyhar & Harjono (2012) statement that learning media is expected to be clean and attractive, clean
in the sense that there are no unnecessary distractions such as unpaid applications. Hence, advertisements will not be found in the Mariposa application. Looking at the appearance of text, images and videos, if they do not create an impression of interest, it will reduce students' motivation to study independently. The language selection aspect obtained a percentage of 86.76%, meaning that the material explained in learning media can be understood in terms of language and clarity of the narrative. This is following Pattiwael et al (2019) statement: A sentence should contain an idea. So that ideas or sentence ideas are easy for readers to understand, the function of the sentence parts which include the subject, predicates, objects and information must appear clearly (explicit). Apart from the use of language, the use of images in learning media can improve student learning outcomes even though they are not optimal.

D. Conclusion

Based on the results of this development research, it can be concluded that: The feasibility of MARIPOSA media products was declared very suitable by material experts, and declared suitable by media experts. The research implications of this application can provide positive benefits and make it easier for students in the process of independent learning on basic pattern material, as seen from the aspects contained in the student trial response questionnaire on media display, material presentation and benefits. This media was stated to be very suitable and can be used to support the learning process.

This research suggested that students are highly recommended to use this media in learning the practice of pattern making because the iSpring 9-based Android application learning media product on the subject of pattern-making basic dimensions of patterns can help the practical and theoretical learning process independently in class as well. Apart from that, suggestions are also addressed to teachers who teach practical pattern-making lessons because the iSpring 9-based Android application learning media product in the pattern-making subject of basic dimensions of patterns can be used as a choice of learning method that utilizes technological information, to arouse students' interest in learning and increase learning effectiveness.

References


