Development of Interactive Science Learning Media on Solar System Material at Madrasah Ibtidaiyah based on PowerPoint and Ispring on Android

Nun Asmi Aida[1], Alvin Yanuar Rahman[2], Hilman Mangkuwibawa[3]
UIN Sunan Gunung Djati Bandung
Email: nunasmiaida@gmail.com

ABSTRACT

This research discusses the design and development of interactive learning media based on PowerPoint and Ispring on Android in science and technology subjects at Madrasah Ibtidaiyah. The learning media design contains solar system material described in a real and easy to understand way by students. The main purpose of this development is to improve learners' understanding through easily accessible media. This media is designed to facilitate interesting and effective learning by integrating visual elements, as well as providing immediate feedback to monitor learners' progress. The method used in developing learning media is R&D (research and development), using the ADDIE model through the Analysis, Design, Development, Implementation, and Evaluation process. The results of data analysis show that the feasibility level of interactive learning media produced according to 1) Assessment by media experts gets a percentage of 82%, 2) Assessment by material experts gets a percentage of 80%, 3) Assessment by students as users get a percentage of 94.86%. The conclusion of this study shows that the product of Interactive learning science media on solar system material at Madrasah Ibtidaiyah based on PowerPoint and Ispring is feasible to use in the learning process

Keywords: Interactive Learning Media, PowerPoint, Ispring, Solar System

1). INTRODUCTION

Education designs students to have competency standards that are in accordance with the demands of the times. This is regulated in Permendikbud No. 16 of 2022. The regulation not only describes what students need to achieve but also encourages teachers to facilitate students with interactive learning. The learning process is the most important thing in school which aims to shape and develop children's attitudes, intelligence, and skills according to their development.

Science is an important part of education that one must learn. This discipline has a huge impact on human civilization, including in the field of technology that underlies everyday life to make it faster and easier. The learning process of science learning (IPAS) should involve learning activities that utilize all the senses and understanding of the subject matter. Therefore, the use of learning media in science is very important, and it is not enough to rely only on teaching materials and books from teachers and oral explanations (Mardiansyah et al., 2023).

Technology and information are very important in the 5.0 era where technologies such as artificial intelligence and computerization are needed to improve the quality of human life. With the rapid development of technology, relevant learning is something that is needed to improve the quality of learning. Quality improvement can be done by using learning media (Novisya et al., 2022).

One way to utilize technology in learning is to use software to develop interactive learning media. The interactive media developed by researchers is PowerPoint-based media which is then developed with Ispring to optimize learning media, the development of this learning media goes through several processes, namely making PowerPoint slides filled with material content, namely the solar system, then providing buttons as an option to click on the desired slide and animated images that add to the effectiveness of learning an object that is not real to be realized (Hamdan Husein Batubara, 2021).

Based on the results of interviews at Madrasah Ibtidaiyah Bahrul Ihsan Kota Bandung Class VI, shows that the teacher still uses the lecture method to convey material, which causes students to lose concentration. This can be seen from the lack of student response to questions asked by the teacher after the material is presented. The lack of use of innovative media and learning resources in learning creates boredom because they only listen to lessons from the teacher. In science classes, students are expected not only to listen to the teacher's explanation but also to actively understand the material being taught. The limitations found during the interview affect students' ability to achieve learning outcomes that meet the Minimum Completion Criteria (KKM) standards, which depend on the level of difficulty of the material.

In situations like this, media that can support learning success is needed. For this study, researchers developed interactive learning media based on PowerPoint and Ispring. The software is easy to understand, offers a complete range of functions and different modes, and allows the creation of innovative teaching materials. The Ispring Learning Media Suite is a learning environment

integrated with Microsoft PowerPoint. With the features available, it makes it easy for teachers to create engaging learning materials. iSpring Suite is also compatible with Android-based smartphones. The way it works involves creating or combining various engaging learning materials, including learning videos and questions of various formats, such as multiple choice and other question types(Mardiansyah et al., 2023).

With the help of Ispring, students can get a clearer picture of the solar system learning material through videos created with Ispring. The Ispring Suite learning environment developed is an audiovisual media-based resource. The main objective of this development is to improve learners' understanding through easily accessible media. This media is designed to facilitate engaging and effective learning by integrating visual elements, as well as providing immediate feedback to monitor learners' progress in Madrasah Ibtidaiyah Bahrul Ihsan Kota Bandung.

Referring to what has been described above, researchers are interested in developing a learning media with the title "**Development of Interactive Science Learning Media on Solar System Material at Madrasah Ibtidaiyah based on PowerPoint and Ispring on Android**". Hopefully, the development of this learning media can increase the effectiveness of learning for students, and help in the learning process.

2). METHODS

The type of research used is research and development. According to Sugiyono (2016: 407), research and development is a research method used to produce products and then test their effectiveness. The purpose of the research is to develop and produce interactive learning media based on PowerPoint and Ispring on Android which is used in the subject of IPAS solar system material.

The procedure for developing interactive learning media based on PowerPoint and Ispring on Android uses the ADDIE development model. The development process goes through 5 stages: Analysis, Design, Development, Implementation, and Evaluation process. Techniques used in collecting data were obtained using interviews, questionnaires, media expert validation, and material expert validation. Data was taken based on a questionnaire distributed to test subjects consisting of 18 students in grade VI madrasah Ibtidaiyah. The data analysis technique used for calculating the average questionnaire results is quantitative.

The trial was conducted to explain, the practicality of the media and the role of the media in the learning process. Product testing is a stage of testing the feasibility of the products produced. The products tested were PowerPoint-based learning media and Ispring on Android which had been declared valid by the validator. The Likert scale is used to measure the attitudes, opinions, and perceptions of a person or group of people about a phenomenon (Amanda, 2019).

Table 1. Assessment Guidelines

Qualitative data	**Score**
Very decent	5
Feasible	4
Decent enough	3
Not feasible	2
Very unfeasible	1

After the data is collected, the formula for calculating the average value of the questionnaire is as follows:

$$p = \frac{\Sigma x}{\Sigma xi} x\ 100\%$$

Where:

P = Percentage sought

Σx = Number of Respondent Answer Values

Σi = Number of ideal values

Quality eligibility criteria to strengthen the validation results, using the average value analysis presented in the following table:

Table 2: Criteria for the Level of Validity and Product Revision

Percentage	Valid Criteria
76-100	Feasible
56-75	Feasible enough
50-55	Less feasible
0-49	Not feasible

3). RESULTS AND DISCUSSION

The results of this study are explained through user assessments that have been processed based on validation from media experts and IPAS material experts, as well as responses from students as users. Overall, the findings show a very positive response and support the use of this application in the IPAS learning process on solar system material. The following is a detailed explanation of the product trial results.

1. Analysis

The results of the research need analysis were motivated by common basic problems. Various problems arise for example: (1) Student intervention in the learning process, because learning still makes the teacher the center; (2) Limited media used by teachers in learning; (3) Teachers are guided by special textbooks as a learning tool. Through the iSpring Suite application, the development of solar system learning media aims to improve students' understanding through easily accessible media. When planning development, learning media and curriculum are analyzed to determine what needs to be achieved or achieved by students using CP, TP, and Learning Objectives. As for grade VI at Madrasah Ibtidaiyah Bahrul Ihsan Bandung City, for now, using the independent curriculum.

2. Design

The planning stage is the initial stage of the learning media development. Based on the results of the needs analysis, the details required are interactive learning media based on PowerPoint and Ispring on Android on solar system material. Making Ispring starts with collecting reference material, processing the material, and completing it. The content of PowerPoint is made interesting by using a combination of colors different image and animation elements to make students more interested in learning.

This initial design is a design that must be done before it is validated and then tested. At this stage, the preparation of an interactive learning media display design framework based on PowerPoint and Ispring on Android includes a home menu which is the main menu of the media, there is a material menu, an evaluation menu that contains questions to test students' abilities on the material presented in the media. The opening page display can be seen in the picture below.

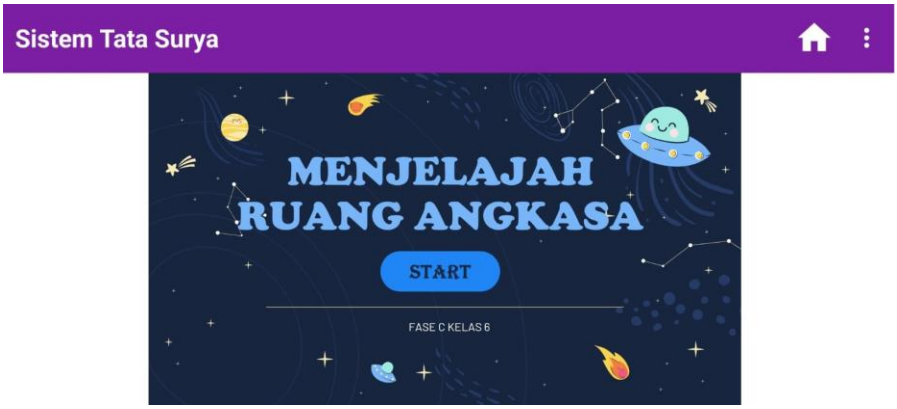

Figure 1. Opening page display

On the menu page, there are learning outcomes, let's read (text), songs about the solar system, solar system learning videos, planetary material and characteristics, and quizzes. The menu page can be seen in the picture below.

Figure 2. Menu page display

On the learning outcomes menu page, there is information about CP, learning objectives, and indicators in accordance with the material in this interactive learning media. The CP page display can be seen in the picture below.

Figure 3. Display of CP page, learning objectives, and learning indicators

On the Let's Read page, there is a story text about the solar system, besides that, there is audio about the story text that can be clicked.The display of the let's Read page can be seen in the picture below.

Figure 4. Display of the let's read page

On the solar system song page there is a learning song video about the solar system. The display of the solar system song page can be seen in the picture below.

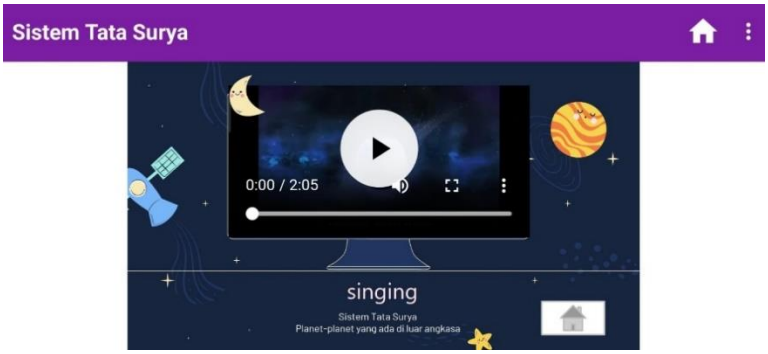

Figure 5. Solar system song page view

On the solar system page there is a learning video of solar system material and the material is material that will be studied by students. The display of the solar system page can be seen in the picture below.

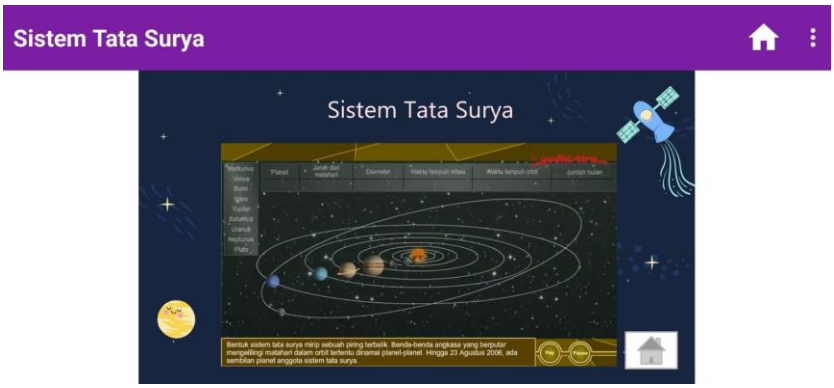

Figure 6. Display of the solar system page

On the planet and its characteristics page there is text reading material and planetary animations that explain the characteristics of the planet in detail. The appearance of the planet page and its characteristics can be seen in the picture below.

Figure 7: Page view of planets and their characteristics

The quiz page is an evaluation of learning material about the solar system. This page contains questions that will test students' abilities in accordance with learning outcomes, learning objectives, and indicators. The display of the quiz page can be seen in the picture below.

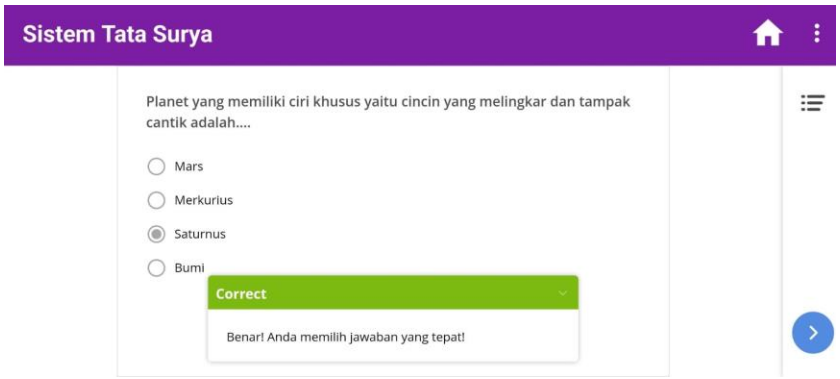

Figure 8. Display of the quiz page

After students answer all the questions to completion, the interactive learning media based on PowerPoint and Ispring on Android will display the scores obtained by students in doing the evaluation. The score page display can be seen in the picture below.

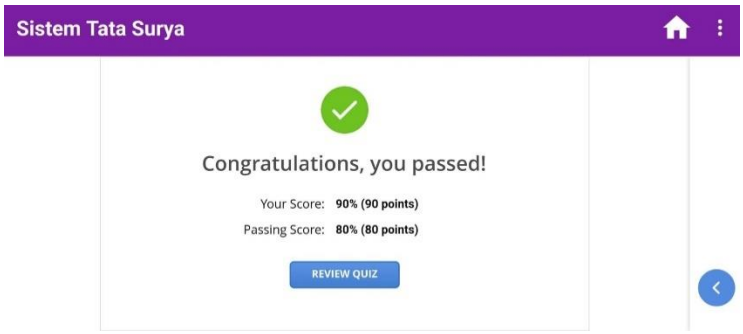

Figure 9: View of the score page

3. Development

Interactive learning media development results that have been made with PowerPoint-based and Ispring on Android with solar system material for IPAS subjects for phase C or grade 6 students at Madrasah Ibtidaiyah. The results of this study are explained based on the results of the assessment of media expert validation and IPAS material expert validation in Madrasah Ibtidaiyah.

a. Media Expert Validation

Validation was carried out by a lecturer from Madrasah Ibtidaiyah Teacher Education as a media validator.

Based on the results of table 3. Got a total score of 41 and an average score of 4.1 The percentage of media expert responses is 82% which means the product is suitable for conducting trials with revisions as proposed. After the media is revised in accordance with the suggestions and also input from media experts, the product deserves to be tested directly.

b. Material Expert Validation

Validation was carried out by IPAS material expert lecturers from Madrasah Ibtidaiyah Teacher Education as a material validator.

Based on the results of table 3. Got a total score of 28 and an average score of 4. The percentage of material expert responses is 80%, which means the product is suitable for testing with revisions as proposed. After the material is revised in accordance with the suggestions and also input from the material expert, the product deserves to be tested directly.

4. Implementation

The use of interactive learning media based on PowerPoint and Ispring on Android for phase C or grade 6 students at Madrasah Intidaiyah. Seen based on student activities they are enthusiastic and involved in learning. The use of interactive learning media was carried out involving 18 6th-grade students of Madrasah Ibtidaiyah Bahrul Ihsan Bandung. This trial aims to determine the effectiveness of the product that has been developed. The results of filling out the overall average student response questionnaire were 4.74 with a percentage of 94.84% which can be classified in the "very good" category. In general, the practicality aspect of the product can be classified in the very good category. So that it can be used in the subject of IPAS solar system material. The final results and feasibility of validating the developed interactive learning media are shown in the table below.

Table 3. Final Results of Student Validity and Practicality Assessment

Media Expert		Material Expert		Practicality Students	
Average	Category	Average	Category	Average	Category
4,1	Feasible	4	Feasible	4,74	Very good
82%		80%		94,84%	

5. Evaluation

After going through several stages or the previous process, the evaluation stage needs to be carried out improvements that are adjusted to the suggestions and input from the validators of the material experts, media experts, and from the results of the practice of student responses to the product.

4). CONCLUSIONS

Based on the results of research and development of interactive learning media products IPAS solar system material at Madrasah Ibtidaiyah based on PowerPoint and Ispring on Android, conclusions can be drawn, namely: (1) Based on the results of research that has been carried out, it can be concluded that this interactive learning media can be classified as very good and feasible. These results are achieved because according to experts, this development is related to theory, components, and processes. After that, improvements were made according to the suggestions and input from the validators of media experts, material experts, and from the results of the practice of student responses to this learning media; (2) The development of educational materials developed through interactive learning media on solar system material aims to be described in a real and easily understood by students. The main purpose of this development is to increase students' understanding through media that is easily accessible and advance educational materials in the form of printed media such as books into a virtual web-based one technology and computer media.

Acknowledgment

I would like to express my deepest gratitude to all those who have provided invaluable support and assistance in the completion of this research. First of all, I would like to express my deep appreciation to Mr. Alvin Yanuar Rahman, M.Or, and Mr. Hilman Mangkuwibawa, M.Pd for their invaluable guidance and direction throughout the writing process. Your knowledge and suggestions have provided very meaningful guidance in developing this paper.

I am also grateful to Ms. Siti Khozanatu Rohmah, M.Pd, and Ms. Inne Marthyane Pratiwi, M.Pd as media experts and material experts for their assistance and constructive inputs that have enriched the content of this study. Your cooperation and support were very helpful in improving this research.

Last but not least, I would like to express my gratitude to MI Bahrul Ihsan Kota Bandung for providing the facilities and resources necessary for this research. The support of the entire KKN 268 Karyawangi group was crucial in enabling me to complete this paper successfully. Finally, thank you

to all those who have provided moral and encouragement. Your support meant a lot and provided great motivation during the writing of this paper. Once again, thank you to all who have contributed. May our cooperation continue in the future.

REFERENCES

Amanda, N. P. (2019). Pengembangan Media Pembelajaran Interaktif Dalam Pengenalan Komunikasi Dasar Bahasa Inggris Berbasis Macromedia Flash Kelas V SD/MI. Skripsi. Lampung: Universitas Islam Negeri Raden Intan.

Anas, N. (2016). Analisis Kemampuan Berpikir Ilmiah (Scientific Thinking) Siswa Sd Tekad Mulia. Jurnal Pendidikan Islam Dan Teknologi Pendidikan, 6(1), 18. https://doi.org/10.5151/cidi2017-060

Batubara hamdan husein. 2021. Cara mudah membuat media pembelajaran digital. Bandung: PT. Remaja Rosda Karya.

Novisya, R., & Erita, Y. (2022). Pengembangan Media Pembelajaran Adobe Flash Cs6 Pada Pembelajaran Tematik Terpadu Di Kelas IV Sekolah Dasar. *Journal of Basic Education Studies*, *5*(1), 173-189.

Mardiansyah, M., Zen, Z., Bentri, A., & Supendra, D. (2023). Pengembangan Media Pembelajaran Menggunakan Ispring Suite pada Mata Pelajaran IPA Kelas VIII SMP. *Jurnal Family Education*, *3*(1). https://doi.org/10.24036/jfe.v3i1.82

Sugiyono. (2016). Metode Penelitian. Bandung: Alfabeta Trianto. (2007). Model-Model Pembelajaran Inovatif Berorientasi Kontruktif.Jakarta: Prestasi Pustaka.