

Developing a Module of Science Learning Media Using Microsoft Power Point 2016

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Abstract – This study produced a science learning media using PowerPoint 2016 software media with material styles that are valid, practical, and have effectiveness on student learning outcomes. This research method uses research and development methods. The product development model refers to the Dick and Carrey development model with the ADDIE model concept, namely Analysis, Design, Development, Implementation and Evaluation. The products produced from this research are in the form of a module using the Microsoft Power Point 2016 media in science learning. This development research was carried out at SMP Negeri 1 Sekayu. Data collection techniques used Validation Sheets, Questionnaires, and Tests. Based on the feasibility of experts consisting of material experts, linguists, and media expert, it can be concluded that the module using Microsoft Power Point media in science learning is in the good category and is suitable for use as learning media.

Keywords – Development Research, Module, PowerPoint Media.

I. INTRODUCTION

Education is an effort made deliberately and consciously to change human behavior both as a group and individually to mature humans through training and teaching efforts. Therefore, changes or developments in education are things that should happen in line with changes in the culture of life. Changes in the meaning of improving education at all levels of education need to be carried out continuously in anticipation of future interests. As stated in Law number 20 of 2003 concerning the National Education System which states that National Education functions to develop capabilities and shape the character and civilization of a nation with dignity in the context of educating the nation's life.

The main activity carried out by the teacher in the learning process in the classroom is teaching. The main thing in the

implementation of teaching activities is the competence of teachers as executors of teaching activities, to carry out good, directed and planned teaching activities so that they can achieve learning objectives, teacher competence is needed. Teacher competence as referred to in article 8 of the Law of the Republic of Indonesia Number 14 of 2005 includes pedagogical competence, personal competence, social competence, and professional competence obtained through professional education, which includes the ability to choose the right media or learning media, and can be understood by students.

With the implementation of education in Indonesia as a whole, it will be able to print potential generation ready to compete in the world market. This is what is being pursued by educational institutions in Indonesia. All educational institutions in Indonesia have the duty and responsibility in

order to build a generation that is potential and able to compete in the world market (Tobari et al, 2018).

The ability of the teacher itself is directly related to teaching and learning activities which in turn will affect student learning outcomes. This is in accordance with the opinion of Daryanto (2016) that the teaching and learning process and the learning outcomes and achievements obtained by students are not only determined by the school, the structure and content of the curriculum, but also determined by the ability of teachers to teach and guide students.

Education is a long-term investment that requires considerable effort and funds, this is recognized by almost all people of a nation anywhere for the survival of its future. Thus, Indonesia has high hopes for educators in the future development of education in Indonesia. Education is also a process of developing human abilities, potentials and capacities that are easily influenced by habits, then refined with good habits, supported by media that are arranged in such a way that education can be used to help others or themselves in achieving the goals that have been set (Suwarno, 2014).

Schools are educational institutions where schools must have internal and external customers. Internal customers are parents, students, teachers, administrators, staff and school boards that are in the education system (Asvio et al, 2019). Schools as part of institutions that must be responsible for providing services to students and stakeholders must be able to provide excellent service both in terms of teaching administration, student affairs, staffing, finance and other educational facilities while continuing to prioritize effective and efficient services one of the ways that madrasas or schools do is to use school-based management, which is a management model that gives autonomy greater authority and responsibility to schools, flexibility, encourages direct participation of school and community members, improves school quality based on national policy (Rohma, 2020).

The problem of education and teaching is a fairly complex problem where many factors influence it. One of these factors is the teacher. The teacher is a teaching component that plays an important and major role, because the teaching and learning process is very much determined by the teacher factor (Yunita, 2020).

Student achievement in school is often indicated by the learning problems of these students in understanding the material. This indication is possible due to ineffective student learning factors, even students themselves feel unmotivated in participating in classroom learning. So that it causes

students to lack or even not understand the difficult material provided by the teacher. This less attractive learning tendency is a natural thing experienced by teachers who do not understand the needs of these students both in terms of characteristics and in the development of knowledge. In this case the role of a teacher as a science developer is very large to select and implement appropriate and efficient learning for students, not just conventional-based learning. According to Kristiawan (2018) teacher as educator in carrying out their duties are multi-role that is as an educator, trainer and teacher. The teacher has a very important role, and has responsibility for national education. Good learning can be supported by a conducive learning atmosphere and communication relationships between teachers, students can run well (Daryanto, 2016). The development of information and communication technology is very rapid and affects the world of education.

Global demands require the world of education to always adapt technological developments to efforts to improve the quality of education, especially the use of information and communication technology, especially in the learning process. Learning media is information that is arranged systematically with certain methods in a field of science, presented and packaged in the form or form of printed or non-printed media, which is used as a source of information in learning and or teaching by teachers and students to achieve a learning or learning goal (LAN RI, 2017). Learning media serves as a source of learning and teaching in order to improve the quality of learning outcomes. The learning media is expected to be an alternative in solving learning problems experienced by students or learners. The use of appropriate learning media in learning has great potential in determining the success of learning, because the learning media used must be learning media that has undergone a structuring process in learning and greatly affects teaching and learning activities both for teachers, students and the results of the learning itself. There are many kinds of media, there are media that can only be used if there are tools to display them. There are also those whose use depends on the presence of a teacher or guide. Media that does not depend on the presence of a teacher is commonly called instructional media and is 'Self Contained', for example interactive use through teaching media, where material, assignments, exercises and treated feedback have been programmed in an integrated manner in the media (Rusman, 2012).

The learning process, using media plays an important role in achieving learning goals. The communication relationship between teachers and students will be better and more efficient when using the media. The learning process using

media has a clear function, namely to clarify, facilitate, and make interesting learning that will be conveyed by the teacher to students so that it can motivate learning and make the learning process more efficient. The results of research according to Raharjo in Rusman (2012) show that teaching and learning activities will be more effective and easier when assisted by visual means, where 11% of what is learned occurs through the sense of hearing, while 83% is through the sense of sight. Besides that, it is stated that we can only remember 20% of what we hear, but can remember 50% of what we saw and heard. In the learning process, the existence of learning media is very influential on learning activities. Learning activities will be more effective and meaningful for students, if the existence of learning media is concrete and provides a more factual learning experience for students. Smaldino, Lowther, and Russell (2011) emphasized that the design and use of teaching materials is very important, because the interaction of students with these materials creates and reinforces real learning. In addition, seen from the learning principles, it can increase the level of high learning outcomes, if supported by the use of learning media through the media, the potential for the senses of students can be accommodated so that the level of learning outcomes will increase. One aspect of media that is superior for improving learning outcomes is multimedia, namely from various media elements such as images, animation, text, videos (Susilana and Riyana, 2012).

According to Paivio (2010) the human cognitive system consists of two sub systems. Verbal system and image system or visual. The presence of images in text can increase memory due to dual coding in memory. According to Reiber (2010) another important part of multimedia is animation. Animation can be used to attract the attention of students if it is used appropriately. According to the theory of Quantum Learning, students have different learning modalities which are divided into three types, namely visual, auditive and kinesthetic. This diversity of learning modalities can be overcome by using media devices with multimedia systems, because each student with different types of learning can be represented by multimedia (Rusman, 2012).

The use of technology in schools is considered necessary as one of the skills of the 21st century. Currently there are still many schools that have not been able to take advantage of technology due to various problems, such as teachers not being able to operate computers, teaching with a slide percentage using Microsoft Power Point media and internet facilities and the lack of training for teachers, especially for teachers who are elderly. For this reason, researchers feel the need to create a module using the Microsoft Power Point

2016 media to help elderly teachers. The development of learning media modules using the 2016 Power Point software in science learning in junior high schools is expected to help achieve learning objectives. According to Rusman, Kurniawan and Riyana (2012) The Power Point program is one of the software specifically designed to be able to display multimedia programs attractively, easy to manufacture, easy to use and relatively inexpensive, because it does not require raw materials other than tools for data storage. In order to attract students' attention and interest in science lessons, a learning media display must be made, which draws both colors, text, shapes, and illustrations. This can all be overcome with the help of computer-based technology, especially with the PowerPoint 2016 presentation software.

II. RESEARCH METHODS

This research is a development research. Sugiyono (2012) states that development research is a process used to develop and validate products used in education and learning. Plomp (2013) suggests that development studies aimed at design principles, and validation studies aimed at theory development and validation. Thus, research and development methods are research methods used to produce certain products and test the effectiveness of these products. This type of research is different from other educational research because the goal is to develop a product based on trials and then revise it to produce a product that is suitable for use. The product being developed is a teaching material in the form of a module using Microsoft Power Point 2016 media in science learning.

In this study, the development model used is the Dick and Carrey development model with the ADDIE model concept, namely Analysis, Design, Development, Implementation and Evaluation (Dick et al, 2001). The products produced from this research are in the form of a module using the Microsoft Power Point 2016 media in science learning.

The research objectives consist of development goals and trial targets. The development target is the use of Microsoft Power Point 2016 media in science learning. Meanwhile, the target of the trial was a science teacher at SMP Negeri 1 Sekayu as a module user.

III. RESULTS AND DISCUSSION

Based on the results of the preliminary needs analysis conducted by researchers using observations and interviews, it was stated that the management of science learning at SMP Negeri 1 Sekayu was not yet effective. Based on the findings of the researcher which states that the teacher has not been able to present the most active learning and can increase

student participation in science learning activities. In addition, teachers have also not been able to make maximum use of computer, laptop and infocus media as learning media, especially in science subjects and there is no textbook that is a guide for science subject teachers in the application of learning media based on the Power Point application with the aim of learning can run effectively.

The statement above, based on the findings of researchers that occurred at SMP Negeri 1 Sekayu, among others, SMP Negeri 1 Sekayu has sufficient facilities and infrastructure, one of which is a facility in the form of a projector to be used as a media for learning science. Due to the limitations of teachers in using these media as learning media, science learning is still not able to present the most active learning and can increase student participation.

Based on the results of an interview with Mrs. Mayanis, S.Pd, a science subject teacher at SMP Negeri 1 Sekayu on June 8, 2020, she stated that basically the teacher was able to operate the projector as a learning tool in the classroom. However, the teacher has not presented the concept of learning using a projector. Therefore, teachers, especially those in science subjects, still use learning media such as pictures with media and objects that can be used as science learning media.

The results of the interviews obtained indicate that there is a lack of use of attractive learning media in learning activities. The media used were only pictures and the students considered it boring. Teachers need learning media that can help students understand abstract learning materials such as human skeletons, because human skeletons are inside the human body and cannot be seen directly. In addition, attractive media can make the classroom conducive and students understand the learning material provided by the teacher.

Based on the results of an interview on June 10, 2020 with Ms. Novelka Yunaida, S.Pd, a science teacher at SMP Negeri 1 Sekayu, related to the extent to which teachers understand the use of multimedia-based learning media. He stated that the teacher did not yet have a guidebook or teaching material that could be used by the teacher to improve his ability to utilize multimedia-based learning media. Therefore, projector facilities in schools have not been fully utilized.

The results of this interview became the initial basis for researchers to develop PowerPoint-based learning modules for science subjects. Because one of the simplest and easiest multimedia-based learning media for science subject teachers to design is Power Point media. Based on the results of interviews with Vera Missiana, S.Pd as a class VIII science

teacher at SMP Negeri 1 Sekayu explained that Microsoft Power Point learning media is the most practical learning media that can be used in learning activities and attracts student learning interest more. Therefore, it will be very useful for teachers, especially science teachers, if there are textbooks based on Power Point media that can be used by teachers for independent study.

Based on the results of the interview above, it can be seen that the teacher has the view that learning media that can use projectors can make students more focused and help students better understand the material provided, students are also more enthusiastic in learning activities, such as asking questions. However, because of the limitations that teachers have in designing multimedia-based learning media, they are less able to create Microsoft Power Point-based learning media that attract students' interest in the learning process. From the results of observations related to the science learning process in class VIII on the date conducted by researchers at SMP Negeri 1 Sekayu on June 8, 2020, it is known that the teacher has several times made simple Power Points containing written material and also pictures related to learning material, but only points from the material, the complete material students are asked to see the science book. The teacher's lack of creativity in presenting Power Point media has not been able to attract students to focus more on following the teaching and learning process in class. The visible response of students to Microsoft Powerpoint-based learning media will focus more on learning so as to create a conducive and pleasant classroom atmosphere for learning if the Power Point media can be presented with an interesting concept. The use of media that can attract students' interest so that students are not burdened with material that students find difficult. Natural science material becomes difficult to understand because of several things such as there are several parts of the material that must be memorized by students.

Therefore, we need a way to overcome student difficulties in the learning process. The use of props, images related to the material, and videos takes a relatively longer time than using PowerPoint media slides. This is the basis for researchers why science learning at SMP Negeri 1 Sekayu requires learning media based on Microsoft Powerpoint. For this reason, it is necessary to have teaching materials in the form of science learning modules based on Power Point media that can be used by teachers as teaching materials for independent learning. Then to interpret the module practicality data based on the principles of the experts, the results of the score obtained are by adding the multiplication of categories with the values obtained. The categories of practicality are as follows.

Table 1. The Result of Module Practically Test Score

No	Respondents	Score	Rating Category	Range
1	Mayanis, S.Pd	76		
2	Cikyah, S.Pd	76		$(S_{\min}+p) \leq S \leq S_{\max}$
3	Vera Missiana, S.Pd	77		
4	Novelka Yunaida, S.Pd	69		
5	Syamsul Bahri, S.Pd	70		
	Total Score	368	Practical	$(69+3) \leq 73 \leq 77$
	Total Average Score	73,6		$72 \leq 73 \leq 77$

From the test results above, it can be seen that the module is in the practical category, based on the results of the analysis above, it is known that the average score (S) of the respondents is 73.6, greater or equal to the minimum score plus the interval, namely 69 and more small or equal to the maximum score, namely 77 or $72 \leq 73 \leq 77$. The module using Microsoft Power Point media in science learning is considered to have a good level of understanding and is easy for students to understand. From the results of the development research above, it can be argued that the module using Microsoft Power Point media in science learning in junior high schools is declared valid and practical. Based on the results of the development of the module using Microsoft Power Point media in science learning, it begins with a product needs analysis, which is a step to identify problems and collect data and prepare to formulate a research framework.

The results of this study are supported by research conducted by Moh, Widya & Aulia (2019) which states that after an observation in one of the study guides in Sidoarjo, there was an increase in learning outcomes after the experiment using power point-based modules in learning. Class conditions when learning using the print module are not conducive. Learning is more active and conducive because all students pay attention and actively fill in the module. The development of a power point-based thematic module is very appropriate because it can be implemented easily for teachers and attracts students' interest in the learning process. And research from Suhastra (2013) which states that Power Point learning media consists of seven parts, namely SK / KD, material, narrator's voice, instrument music, animation, instructional videos, quizzes, and games. All of these parts are packaged in a Microsoft Power Point which is used as a learning medium. As well as for teachers and attracting students' interest in the learning process. The results of research from Ayudatami, Indrawati, & Mustangin (2019)

concluded that there were changes in student learning outcomes before being given the application of power point media and after treatment.

IV. CONCLUSION

Based on the results of research and development, the following conclusions were obtained: 1) The feasibility of the media experts obtained an overall score of 37 with an average score of 3.7 so that when viewed in the eligibility criteria table for the module using Microsoft Power Point media in science learning, it is in the "good" category, so it can be concluded that the media expert stated Microsoft Power Point on science learning is declared valid and suitable for use as a learning medium; 2) The feasibility of the material experts obtained an overall score of 67 with an average score of 3.52, so that when viewed in the table of eligibility criteria for the module using Microsoft Power Point media in science learning, it is included in the "good" category, so it can be concluded that the media expert stated the Usage module. Microsoft Power Point media in science learning is declared valid and suitable for use as learning media; 3) The feasibility of the linguists obtained an overall score of 18 with an average score of 3.60, so that when viewed in the table of eligibility criteria for the module using Microsoft Power Point media in science learning, it is included in the "good" category, so it can be concluded that the linguist stated the Usage module. Microsoft Power Point media in science learning is declared valid and suitable for use as learning media, and 4) The use of Microsoft Power Point media in science learning is considered practical because it has a good level of understanding and is easily understood by students.

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REFERENCES

- [1] Asvio, N., Yamin, M., & Risnita. (2019). Influence of Leadership Style, Emotional Intelligence and Job Satisfaction toward Organizational Commitment (Survey at SMA Muhammadiyah South Sumatera). *International Journal of Scientific & Technology Research* 8 (8).
- [2] Ayudatami, I. A., Indrawati, I., & Mustangin, M. (2019). Penerapan Media Power Point Pada Materi Struktur Dan Fungsi Tumbuhan Terhadap Hasil Belajar Siswa SMP Kelas VIII [Application of Power Point Media in Plant Structure and Function Material to The Learning Outcomes of Class VIII Middle School Students]. *FKIP e-Proceeding*, 4(1), 14-18.
- [3] Daryanto. (2016). *Media Pembelajaran Edisi Revisi [Learning Media Revised Edition]*. Yogyakarta: Gaya Media.
- [4] Dick, W. Carey. L, Carey, J.O (2001) *The Systematic Design of instruction*. Addison-wesley Education publisher inc.
- [5] Kristiawan, M., Safitri, D., & Lestari, D. (2018). *Manajemen Pendidikan [Educational Management]*. Yogyakarta: Depublis
- [6] LAN RI. (2017). *Pengembangan Bahan Ajar [Teaching Material Development]*. Jakarta.
- [7] Moh, B. A., Widya, M., & Aulia, N. J. (2019). Pengembangan Modul Pembelajaran Tematik Berbasis Teknologi Informasi Power Point di Madrasah Ibtidaiyah [Development of Information Technology-Based Thematic Learning Modules at Madrasah Ibtidaiyah]. *Universitas Muhammadiyah Sidoarjo*.
- [8] Paivio. (2010). *Mental representations: A Dual Coding Approach*. Oxford: Oxford University Press.
- [9] Plomp, T. (2013). *An. Introduction to Educational Design Research. Proceedings of the seminar conducted at the East China Normal University. Shanghai (PR China)*.
- [10] Reiber, L. P. (2010). *Computers, Graphic, & Learning*. Madison: Brown & Benchmark Publisher.
- [11] Rohma, S., Harapan, E., & Wardiah, D. (2020). The Influence of School-Based Management and Teacher's Professionalism toward Teacher's Performance. *Journal of Social Work and Science Education*, 1(1), 13-23. Retrieved from <https://ejournal.karinosseff.org/index.php/jswse/article/view/6>
- [12] Rusman. (2012). *Belajar dan Pembelajaran berbasis Komputer [Computer-Based Learning and Study]*. Bandung: Alfabeta.
- [13] Rusman, K. D., & Riyana C. (2012). *Pembelajaran Berbasis Teknologi Informasi dan Komunikasi [Learning Based on Information and Communication Technology]*. Jakarta: PT Raja Grafindo Persada.
- [14] Smaldino, S. E., Lowther D. L., and Russell, J. D. (2011). *Instructional Technology and Media for Learning*. Jakarta: Kencana Prenada Media Group.
- [15] Sugiyono. (2012). *Metode Penelitian Kuantitatif, Kualitatif dan R&D [Quantitative Research Methods, Qualitative and R&D]*. Bandung: PT Alfabet.
- [16] Suhastra, D. A. (2013). *Pengembangan Media Pembelajaran Powerpoint Untuk Meningkatkan Hasil Belajar Siswa Kelas IV Pada Materi Energi Dan Perubahannya Di MIN Rejoso Jombang [The Development of Power Point Learning Media to Improve The Learning Outcomes of Fourth Grade Students on Energy Material and It's Changes at MIN Rejoso Jombang]* (Doctoral dissertation, Universitas Islam Negeri Maulana Malik Ibrahim).
- [17] Susilana, R., & Riyana, C. (2012). *Media Pembelajaran [Learning Media]*. Bandung: CV Wacana Prima.
- [18] Suwarno, W. (2014). *Dasar-Dasar Ilmu Pendidikan [Basics Education]*. Jogjakarta: AR-Ruzz Media Jogjakarta.
- [19] Tobari., Kristiawan, M. & Asvio, N. (2018). The Strategy of Headmaster on Upgrading Educational Quality in Asean Economic Community (AEC) Era. *International Journal of Scientific & Technology Research* 7 (4).
- [20] Yunita, E., Arafat, Y., & Mulyadi, M. (2020). The Function of Class Teacher Educational Management in Improving Student's Learning Outcomes. *Journal of Social Work and Science Education*, 1(2), 168-180. Retrieved from <https://ejournal.karinosseff.org/index.php/jswse/article/view/46>.