

Macromedia Flash Software Development in Branch of Badminton

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Abstract. Basic badminton technique is one aspect that is used as a reference for developing one's potential, so that education in Indonesia includes it in the curriculum as one of the subjects that must be studied at university level. An interesting learning media that can trigger increased student reasoning, namely Macromedia flash software learning media for basic badminton technique courses. Basically media-based learning, macromedia flash software for badminton basic technique courses, is a teaching system that is suitable for the brain which produces meaning easily. connecting academic content with technological context. This research aims to produce interactive learning media based on macromedia flash and determine the level of suitability (validity) of the media, as a learning source and alternative media for badminton courses. Utilization and use of Macromedia flash software technology for basic badminton technique courses which has better hopes for improving students' basic badminton technique learning outcomes.

Keywords: Macromedia Flash Software, Development, Branch, Badminton

1 Introduction

Education is a service that needs to have a standardized assessment of quality. Quality standards are guidelines for the characteristics of goods and services, including their management systems that are relatively built and in accordance with customer needs. Quality in the field of education includes 4 qualities, namely input, process, output and outcome. Educational input is delivered with quality when it has been processed. The educational process is of quality when it is able to create an active, creative and enjoyable atmosphere. Output is said to be superior if the learning outcomes in academic and nonacademic fields of students are high. While the results are declared quality if graduates are quickly absorbed in the workforce, have reasonable salaries, and all parties recognize the greatness of their graduates and feel satisfied. Nowadays, the use of technology has developed a lot in society. Technology begins with simple tools made by humans in ancient times. For example, in automotive technology, perhaps wheels are currently considered ordinary by humans, but in ancient times this technology was the most innovative

technology, because wheels greatly helped humans to travel. Media is anything that can deliver messages from information regularly, so that a conducive learning area is created (Rahmat Dian et al., 2020). However, when compared to today's technology, wheels may only be history. In the development of technology, humans will experience a revolution or change at any time, technological products that are considered sophisticated today may be left behind by the discovery of new technology or will only change to be good without changing the concept of old technology. Learning media are tools, means, intermediaries, and conversations to spread, carry or convey a message (message) and ideas, so that they can stimulate students' thoughts, feelings, actions, interests and attention in such a way that the teaching and learning process occurs in the students themselves. In learning media there are two elements contained, namely (a) messages or teaching materials to be conveyed or software, and (b) display tools or hardware (Cahyadi A, 2019). The use of learning media as a substitute for conventional learning methods will be more effective because learning media has its own advantages in helping students remember information better (Nurhayati, 2018). Education in the basic badminton technique course requires a teaching method that is able to convey the technique clearly and effectively. Traditional methods often fail to provide adequate visualization for complex techniques, so students may have difficulty in understanding and applying the technique. The characteristics of badminton are highintensity games interspersed with rest periods (Jeyaraman & Kalidasan, 2012). Badminton requires a combination of aerobic and anaerobic in winning long and short rallies (Faude et al., 2007). In today's digital era, interactive media offers a potential solution to overcome this challenge. Macromedia Flash software, with its ability to create dynamic animations and multimedia content, can be used to develop more interesting and easy-to-understand teaching materials. The basic badminton technique course is an important component in the sports education curriculum. To achieve optimal learning outcomes, effective and interesting teaching materials are needed. Macromedia Flash is a multimedia platform and software used for animation, games and internet enrichment applications that can be viewed, played and run on Adobe Flash Player. (Fahmi, 2013). Badminton is a type of game that requires good speed and agility to hit the shuttlecock, where the correct footwork and stroke techniques will produce a perfect hit (Hamid & Aminuddin, 2019). Macromedia Flash, as a multimedia development tool, offers features that enable the creation of interactive and visual teaching materials. This study aims to develop and evaluate teaching materials using Macromedia Flash for this course. Learning media will be appropriate if, in addition to meeting the principles of selecting technology-based media, it also pays attention to several factors, as described below: (a) objectivity, the element of teacher subjectivity in choosing teaching media must be avoided. This means that teachers should not choose a teaching medium based on personal pleasure. (b) teaching program, the teaching program that will be delivered to students must be in accordance with the applicable curriculum, both in terms of content, structure, and depth. (c) Program targets, the program targets in question are students who will receive teaching information through teaching media. (d) The existing situation and conditions also need to be considered in determining the choice of teaching media to be used. Macromedia Flash is a software and multimedia platform used for games, animations, and interactive web applications that require Adobe Flash Player to view, play, and operate them (Rina Candra Noor Santi, 2023). Media is anything that can be used to convey messages from the sender to the recipient of the message, so that it can stimulate the thoughts, feelings, attention, and interests of students so that learning outcomes can be improved. While learning media is a means of communication and interaction between lecturers and students in the learning process. One of the main functions of learning media is as a teaching aid that also motivates students and is created by lecturers. Operationally, there are a number of considerations in choosing the right learning media, including (1) access,

namely ease of use and usefulness of the media, (2) cost, namely the costs required by considering the benefit aspect, (3) technology, namely technology-based media needs to pay attention to the existence of technicians and ease of use, (4) interactivity, namely the emergence of two-way communication, (5) organization, namely institutions or organizations that support media creation, (6) novelty, namely the novelty of the media can make students more interested.

The use of macromedia flash in creating teaching materials aims to improve students' learning experience by providing clear and interactive technique visualizations. Through animation and simulation, students can see detailed demonstrations of badminton techniques, which can accelerate understanding and mastery of basic skills. This study aims to develop and evaluate macromedia flashbased teaching materials for basic badminton techniques courses, as well as to measure their effectiveness in improving students' understanding and skills. The Physical Education, Health and Recreation (PJKR) Study Program, State University of Medan allocates 2 credits for badminton courses. Macromedia Flash is software used by web professionals (web designers) to produce internet networks. In addition, facilities are available to create programs using Action Script (Fitriasari & Kartikasari, 2021). In providing badminton material, it is not enough to only have 2 credits in blended learning conditions, because students will not be able to understand just by listening to the explanation because the basic badminton technique course is a practical course, not a class course. The solution provided for a successful learning is the use of macromedia flash software for the basic badminton technique course that has been designed by the lecturer very completely, with the media that will be designed, namely macromedia flash software for the basic badminton technique course, students are expected to be able to find and develop new knowledge and skills according to the knowledge they have. Thus, they will better understand and give more meaning to their knowledge. However, until now, there has been no virtual reality technology media available in the learning process at the Physical Education, Health and Recreation Study Program (PJKR) of the State University of Medan which is actually very much needed. Basic badminton techniques are one aspect used as a reference for developing self-potential, so that education in Indonesia includes it in the curriculum as one of the courses that must be studied at the university level. Based on the author's experience as a lecturer and coordinator of in the badminton field in the PJKR study program. The author obtained findings in the form of learning problems that are currently still felt to be lacking in utilizing advances in science and technology in badminton lecture activities, learning so far still uses theories about learning basic badminton techniques in online learning conditions which sometimes make students bored and lazy to follow the learning. Therefore, macromedia flash software media is needed for basic badminton techniques courses which are expected to be able to explain some materials and series of movements in the form of animation. This is also in line with the demands of the 21st century learning paradigm, one of which is blended learning, so that macromedia flash software-based learning media is needed for basic badminton techniques courses. Interesting learning media that can trigger an increase in student reasoning, namely Macromedia Flash software learning media for basic badminton techniques courses. Basically, learning based on Macromedia Flash software media for basic badminton techniques courses is a teaching system that is compatible with the brain that produces meaning by connecting academic content with the context of technology. The description above encourages the author to conduct research with one of the utilization and use of Macromedia Flash software technology for basic badminton techniques courses which have better hopes in improving students' basic badminton technique learning outcomes in everyday life and the many sectors that use basic badminton techniques as an important reference in all aspects.

2 Method

The data sources in this study are primary data sources and secondary data sources. To collect data from the field in this research activity, the author uses the observation method, interview method, and documentation method. Primary data (main data) is the data source obtained by observation, questionnaire and interview methods. In general, this research study aims to see the extent to which the feasibility of the learning media developed using macromedia flash for the basic badminton technique course. This study uses the Research and Development (R&D) research method. This method was chosen because to produce certain products and test the results of a product of a technology development product that supports learning and in the field of sports. The development research model that will be used by this researcher uses the research and development (R & D) method, namely the ADDIE model. Investigation and Creation With the ADDIE paradigm (Analysis, Design, Development and Production, Implementation, Evaluation), open materials are made with the Macromedia Flash 8 application. (Dewi Padmo, 2014) states that there are five steps in the media preparation process. These stages include: Analysis Stage (Analysis), Planning (Planning), Development and Production (Development and Production), Trial (Trial), and Evaluation (Evaluation), depending on the type of R&D (Research and Development).

3 Results and Discussion

3.1. Result

The evaluation results showed that the teaching materials developed using Macromedia Flash received positive responses from students. Students reported an increase in their understanding of basic badminton techniques and felt more motivated to practice. The use of animation and interaction helped them understand the techniques better compared to traditional methods. The development of interactive teaching materials using Macromedia Flash for the basic badminton techniques course resulted in several main components of basic badminton technique animations, interactive modules with exercises and quizzes, and additional materials such as technique guides and demonstration videos. The trial of these teaching materials was conducted on a group of students involved in a badminton training program. Evaluation was carried out through a student satisfaction survey and an understanding test. Quantitative methods were used to measure improvements in knowledge and skills, while qualitative methods were used to collect feedback from students. The design of teaching materials for the basic badminton techniques course using Macromedia Flash included the creation of animations that display basic badminton techniques, such as serves and smashes. This design process began with designing a clear visual flow for each technique, ensuring that students could understand the steps required through detailed and structured animations. The graphics used must be clear and representative, providing an accurate visual representation of the techniques being learned. Design elements include Graphics Images and illustrations that show body position, racket movement, and shuttlecock direction. The implementation of the development of this teaching material involves the creation of animations and interactive modules using Macromedia Flash for the Basic Badminton Techniques course. This process begins with designing content that includes animations of basic badminton techniques, such as strokes, serves, and footwork, presented in an attractive and easy-to-understand format. The interactive modules are also designed to allow students to practice independently and receive instant feedback on their

performance. After the teaching materials were developed, the content was trialed on a group of students who were the subjects of the study. This trial aims to assess the extent to which the interactive teaching materials are effective in helping students understand and master basic badminton techniques. During the trial, students were asked to use the materials in practice sessions and classes, while providing feedback on ease of use, clarity of animations, and the overall benefits of the module.

3.2. Discussion

Feedback collected during the trial was used to evaluate the quality and effectiveness of the teaching materials, this process includes an analysis of the extent to which the teaching materials can improve students' understanding of badminton techniques and their engagement in learning. Based on this feedback, adjustments and improvements were made to the interactive module to ensure that the learning materials met educational needs and could be effectively applied in teaching basic badminton techniques. This higher student engagement contributed to better understanding and faster mastery of the techniques. These findings are consistent with theories on motivation and engagement in technology-based learning, which suggest that interactive and visual elements can enhance learning effectiveness. However, some shortcomings were also identified, such as limitations in the simulation that may not fully replicate real-world conditions. This suggests the need for further development to create more realistic simulations and the integration of additional features that can more closely approximate the learning experience in a real-world environment. Overall, this study provides a strong foundation for the use of interactive technology in sports education and paves the way for further research in the development of multimedia-based learning materials. Graphics used should be clear and representative, providing an accurate visual representation of the technique being learned. Design elements include Graphics Images and illustrations that show body position, racket movement, and shuttlecock direction. Graphics should be high quality and easy to understand. Captions and short explanations that accompany each animation to explain the technique and the steps to be taken. Text should be concise, clear, and support visualization. Interactive Animations. Motion simulations that allow students to view the technique from various angles and interact with animated elements, such as selecting and manipulating specific parts of the technique. These animations should be intuitive and responsive to facilitate the learning process. The design of this teaching material aims to create an interesting and effective learning experience, by utilizing the interactive features of Macromedia Flash to improve students' understanding of basic badminton techniques.

4 Conclusion

The development of teaching materials using Macromedia flash has proven effective in improving the quality of learning in the basic badminton technique course. The interactive teaching materials produced can help students understand basic techniques more deeply and practically. Learning in the basic badminton technique course requires a teaching method that is able to convey techniques clearly and effectively. Traditional methods often cannot provide adequate visualization for complex techniques, so students may have difficulty understanding and applying the techniques. In today's digital era, interactive media offers a potential solution to overcome this challenge. Macromedia flash software, with its ability to create dynamic animations and multimedia content, can be used to develop teaching materials that are more interesting and easy to understand. The use of Macromedia flash in creating teaching materials

aims to improve students' learning experience by providing clear and interactive visualizations of techniques. Through animation and simulation, students can see demonstrations of badminton techniques in detail, which can accelerate understanding and mastery of basic skills. This study aims to develop and evaluate Macromedia Flash-based teaching materials for the basic badminton technique course, as well as to measure its effectiveness in improving students' understanding and skills.

References

- [1] Cahyadi A. (2019). *Pengembangan Media dan Sumber Belajar Teori dan Prosedur*. Serang Baru: Laksita Indonesia
- [2] Dewi Padmo. (2014). *Peningkatan Kualitas Belajar Melalui Teknologi Pembelajaran*. Pusat Teknologi Komunikasi dan Informasi Pendidikan.
- [3] Fahmi, S. (2013). *Pengembangan Multimedia Macromedia Flash Dengan Pendekatan Kontekstual Dan Keefektifannya Terhadap Sikap Siswa Pada Matematika*. *Agrisains*, 5(2), 1–109.
- [4] Faude, O., Meyer, T., Rosenberger, F., Fries, M., Huber, G. and Kindermann, W. 2007. "Physiological Characteristics of Badminton Match Play". *Eur J Appl Physiol* 100:479–485
- [5] Fitriyani dan Kartikasari. (2021). *Penerapan Model Pembelajaran Snowball Throwing Berbantuan Macromedia Flash Dalam Meningkatkan Keterampilan Menulis Teks Eksposisi*. *Jurnal Pendidikan Bahasa Dan Sastra Indonesia*, 4(1), 17–25.
- [6] Hamid, A., & Aminuddin, M. (2019). *Pengaruh latihan footwork terhadap agility pada pemain bulu tangkis PBSI Tanah Laut usia 12-15*. *Multilateral: Jurnal Pendidikan Jasmani dan Olahraga*, 18(1).
- [7] Jeyaraman, R. and Kalidasan, Dr. R.. 2012. "Prediction of Playing Ability in Badminton from Selected Anthropometrical Physical and Physiological Characteristics among Inter Collegiate Players". *IJAIR*, ISSN: 2278-7844
- [8] Nurhayati, I. , K. M. , & Y. (2018). *The Effectiveness Of The Use Of Video Media On Learning On The Competence Of Scalp And Hair Care Of Vocational High School Student Of Beauty Department*. *JVCE*, 3(1), 66–71
- [9] Rahmat Dian, D., Jasman, Irzal, & Adri, J. (2020). *Penerapan Multimedia Interaktif Menggunakan Macromedia Flash Terhadap Hasil Belajar Materi Las Oksi-Asetilen Pada Siswa SMK Jurusan Teknik Las*. 2(4), 117–121.
- [10] Rina Candra Noor Santi, H. Y. S. E. (2023). *Pengenalan Aplikasi Macromedia Flash Sebagai Pendukung Pembuatan Animasi Bagi Tenaga Pengajar*. *Jurnal Media Abdimas* , 3(2).