ISSN: 3026-0442

Proceedings of the 2nd International Conference on Education, Science Technology and Health 2nd ICONESTH 2024 Universitas Bina Bangsa Getsempena, Dec 10-12, 2024, Banda Aceh, Indonesia

Development of Interactive Wordwall Media Using the PjBL (Project-Based Learning) Model in Science Subjects for 4th Grade Elementary School

Sofiyan Siregar[1], Dzikrul Rizki[2]

[1]Universitas Bina Bangsa Getsempena, Banda Aceh, Indonesia
[2]Universitas Syiah Kuala, Indonesia

Sofiyan@bbg.ac.id

ABSTRACT

This research is motivated by the use of IT available in schools that has not been used optimally by teachers. Inadequate development of innovative, interactive and fun media for students and the lack of development of technology-based learning media. Based on these problems, this study aims to develop learning media in the form of interactive wordwall media using the Project Based Learning (PjBL) model in science learning in grade IV elementary schools that is valid, practical and effective. This type of research is development research (R&D) using the ADDIE model. The ADDIE model consists of five steps, namely: analysis, design, development, implementation and evaluation. The designed media is then validated by the validator using a validation sheet in the form of a questionnaire. Product validation consists of material experts, media experts and language experts. For the practicality of the product, it is done by filling out the student's response questionnaire. The subjects of this study were divided into small group trials and field trials with 8 people each in the small group test and 20 people in the field trial.

Keywords: *Development, Student Learning Creativity, Project Based Learning, ADDIE.*

INTRODUCTION

The use of media is one of the essential elements in achieving learning objectives. The development of media in the learning process is closely tied to advancements in technology. Various types of media can be developed using the technology available today. This aims to ensure that the learning process continues to meet the needs of students. Educational media helps provide convenience for both teachers and students in conducting a conducive learning process, and it can enhance the meaningfulness of the learning experience. In implementing learning with media, teachers are required to

bring students into real-life situations to create more meaningful learning by utilizing technology (Hamimah & Latif, 2021).

Educational media directs students to gain ease in the learning process. The use of media can influence the effectiveness of the learning process (Azrianti & Sukma, 2020). However, simply using educational media is not sufficient; an appropriate teaching model is also required. An appropriate teaching model, when paired with media usage, can expand the potential of educational media by providing meaningful learning to students. Students who enjoy the use of learning media will feel more enthusiastic about the learning process. Additionally, the use of media is accompanied by the teacher's efforts to understand the characteristics of students, who at this age possess curiosity, strong desires, and a willingness to try new things around them. Given the diversity of students, the teacher strives to balance these differences with the help of appropriate learning media (Handayani & Muhammadi, 2020).

Based on the observation conducted by the researcher in class IV of SDN 57 Banda Aceh, the researcher found that the learning process was not yet effective in educating the students. The teacher still uses the lecture method, causing students to become bored and often not pay attention during the learning process. This approach tends to hinder growth during the lesson. This situation should not be allowed to continue, as it may negatively impact students' academic performance. Given that teachers play a significant role in the success or failure of a learning process, it is essential for teachers to implement creative and engaging teaching models and media to enhance the quality of education. A solution to address this issue is to choose an innovative and appropriate teaching model that aligns with the material being taught, which can foster creativity in students and make them the primary focus of the learning process, exposing them to real-life experiences that motivate them to be more focused on learning. One teaching model that can be used to enhance students' creativity is the PjBL (Project-Based Learning) model (Nurhayati, 2021).

The PjBL (Project-Based Learning) model is an innovative 21st-century learning approach that is student-centered, positioning the teacher as a facilitator and giving students the freedom to engage in independent learning. In this model, students can identify problems, enhance creativity, find unique solutions based on their experiences and thinking, and create more meaningful and memorable learning activities (Andita, 2018).

Based on the description above, the researcher intends to provide efforts to address these issues in order to increase students' motivation, especially in science education. Therefore, the researcher is motivated to conduct a study entitled "Development of Interactive Wordwall Multimedia Using the PjBL (Project-Based Learning) Model in Science Education to Enhance Creativity in Learning for Grade IV Students at SDN 57 Banda Aceh."

METHODS

This research uses a development model, also known as Research and Development (R&D). Development research is a research method used to produce a specific product and to test the effectiveness of that product (Sugiono, 2015: 407).

This development research uses the ADDIE model. The ADDIE model consists of five stages: Analysis, Design, Development, Implementation, and Evaluation.

Data collection techniques involve tests, interviews, and the distribution of questionnaires. The research instrument used to obtain data in this study is a questionnaire. A questionnaire is a data collection technique conducted by providing a set of written questions or statements to respondents, which they are then required to answer (Sugiono, 2016: 199).

RESULTS AND DISCUSSION

Interactive Media Wordwall

Wordwall media is an engaging multimedia-based learning tool that can be accessed through a browser and printed in image form. This application is specifically designed as a learning resource, media, and an assessment tool that makes learning enjoyable for students. On the Wordwall page, examples of teacher-created content are also provided, allowing new users to get an idea of how to create their own content (Sherianto, 2020). Wordwall learning media is characterized by being active, innovative, creative, and enjoyable. Wordwall is an interactive application based on an official website and offers 18 templates that are easily accessible; moreover, this application is free (Sari W, 2021).

According to Puspaardini, 2019 (Arimbawa, 2021), Wordwall is an educational game designed for the learning process, but it can be considered both learning and playing because it contains templates similar to games. This way, children are less likely to get bored or frustrated when solving problems given by the teacher through Wordwall. This aligns with the view of Maghfiroh (2018), who in his research stated that Wordwall media can create interactions that benefit students. Wordwall media can make the classroom atmosphere more dynamic, which will ultimately boost students' enthusiasm for learning and create a more enjoyable learning environment (Sinaga & Soesanto, 2022).

Advantages and Disadvantages of Wordwall Interactive Media

According to A.A. Mujahidin et al. (2021), Wordwall interactive media has both advantages and disadvantages, as follows:

Advantages:

a. It provides a meaningful learning system that is easy to follow for both elementary and higher-level students.
b. The assignment model is available in the Wordwall software, which can be accessed by students through their mobile phones.
c. It is creative in nature.

Disadvantages:

a. Its usage is susceptible to cheating, and the font size cannot be changed.
b. It requires more time to create content.
c. It can only be viewed as it is a visual-based medium.

Definition of the Project-Based Learning (PjBL) Model

The PjBL model is a learning approach that involves a series of activities or projects. This model educates students by allowing them to directly experience the content they are learning. The learning is carried out in groups, encouraging students to communicate with their peers to complete the project on time. Throughout the project, students learn and experience many things that provide a deeper and more lasting understanding. Project-Based Learning (PjBL) focuses on student activities to collect information and apply it, thereby producing results or something that can be used in students' personal lives or for others, in alignment with curriculum standards and competencies (Nakada, 2018).

The Project-Based Learning (PjBL) model is one form of innovative 21st-century learning that is student-centered, positioning the teacher as a facilitator, and providing students with the freedom to engage in independent learning. In this model, students can identify problems, enhance creativity, find unique solutions based on their experiences and thoughts, and create more meaningful and impactful learning activities (Andita, 2018).

According to Arifianti (2020), the advantages of the PjBL model are as follows:

a. It increases students' motivation to learn.
b. It hones students' problem-solving skills.
c. Students become more active in solving the problems presented.
d. It encourages students to develop and practice communication skills.
e. It provides students with experience in learning and project creation practice.
f. It offers a learning experience that involves students.

According to Anggraini (2021:295), the PjBL model also has some disadvantages, including:

a. Students' active participation can lead to less conducive classroom situations.
b. It requires significant time allocation for project creation.

In line with this, Daryanto (2014:146) mentions that the disadvantages of the PjBL model include:

a. It requires a lot of time to create the project.
b. It requires a substantial budget for project creation.
c. It needs quite a bit of equipment for conducting experiments.
d. Students may have difficulty with experiments and gathering information.

Daryanto (2018) outlines the steps in the Project-Based Learning model, which include:

a. Defining essential questions.
b. Designing the project plan.
c. Scheduling.
d. Monitoring students and project progress.
e. Testing results.
f. Evaluating the experience.

Research conducted by Novianti et al. (2018) shows that the implementation of the Project-Based Learning model can improve students' understanding of mathematical concepts. Rahayu (2018) argues that understanding the material is a crucial condition for the development of students' knowledge. Without understanding, further

development of the material is difficult for students to do on their own and thus requires continuous encouragement from the teacher.

Definition of Student Creativity

Creativity refers to students' ability to create new works that are products of their own creations. It is the ability to think about something in a new way and generate unique solutions to problems. Creativity helps motivate students to learn, and it is hoped that this will lead to improved learning outcomes. To foster the development of students' creativity, patience in the learning process and strong mental resilience are needed to create new products, works, and good ideas (Huda, 2017).

Huda (2017) concludes that several indicators of student creativity in learning are as follows:

a. Critical thinking skills, which refer to the ability to think fluently (to generate many ideas, answers, and problem-solving strategies).
b. Flexible thinking skills (the ability to produce varied statements or ideas).
c. Originality skills (the ability to produce new and unique expressions).
d. Detailing or elaborating skills (the ability to enrich and develop ideas or products).
e. Evaluation skills (the ability to set evaluation standards, such as determining whether a question or statement is correct).

A sense of curiosity, imagination (the ability to visualize), and a drive to solve problems are also essential elements.

CONCLUSION

Learning media is intended to help students achieve ease in the learning process. However, the use of learning media alone is not enough; a suitable learning model is also required. A proper learning model that integrates with the use of media can enhance the media's potential, making learning more meaningful for students. Students who enjoy using learning media are more likely to feel enthusiastic about the learning process. The use of learning media is also accompanied by the teacher's efforts in the classroom to understand the characteristics of students, who, at their age, are naturally curious, eager to learn, and interested in trying new things in their surroundings.

Teachers are expected to be able to apply various creative and engaging learning models and media to ensure quality education. A solution to address this issue is to choose an innovative and appropriate learning model that aligns with the material being taught to students. This approach can enhance students' creativity while making them the central role in the learning process, engaging them with real-life situations to motivate them to focus more on learning.

ACKNOWLEDGEMENT

The author would like to express sincere gratitude to all parties who have supported and contributed to the completion of this research. First and foremost, the author extends the highest appreciation to the teachers and students of SDN 57 Banda Aceh for their cooperation and participation in the research process. Their enthusiasm and willingness to engage with the learning models and media have been invaluable to this study.

The author also wishes to thank the scholars and experts whose works have informed this study, particularly in the fields of multimedia learning media, Project-Based Learning (PjBL), and creativity in education. Special thanks to Sugiono, Azrianti, Hadi, Maghfiroh, and others whose writings have provided a strong foundation for the development of this research.

Finally, the author would like to express gratitude to colleagues and mentors for their guidance, feedback, and encouragement throughout the research process. This research would not have been possible without their support.

REFERENCES

Azrianti, V. P., & Sukma, E. (2020). Pengembangan Media Pembelajaran Tematik Menggunakan Aplikasi Macromedia Flash untuk Menanamkan Karakter Positif. E- Journal Pembelajaran Inovasi, Jurnal Ilmiah Pendidikan Dasar,8(4),97107. http://ejournal.unp.ac.id/students/index.php/pgsd/article/view/9065

Mujahidin, A. A., Salsabila, U. H., Hasanah, A. L., Andani, M., Aprillia, W., & Dahlan, U. A.(2021). Pemanfaatan Media Pembelajaran Daring (Quizizz, Sway, dan Wordwall) Kelas 5 di SD Muhammadiyah 2 Wonopeti. INNOVATIVE: JOURNAL OF SOCIALSCIENCE RESEARCH, 1(2), 552–560.

Sinaga, Y. M., & Soesanto, R. H. (2022). Upaya Membangun Kedisplinan melalui Media Pembelajaran Wordwall dalam Pembelajaran Daring pada Siswa Sekolah Dasar. Jurnal Basicedu, 6(2), 1845–1857. Arimbawa, I. G. P. A. (2021). Penerapan Word WallGame Quis Berpadukan Classroom Untuk Meningkatkan Motivasi dan Prestasi Belajar Biologi. Indonesian Journal of Educational Development, 2(2), 324–332. https://doi.org/10.5281/zenodo.5244716

Maghfiroh, K. (2018). Penggunaan Media Word Wall untuk Meningkatkan Hasil Belajar Matematika Pada Siswa Kelas IV MI Roudlotul Huda. Jurnal Profesi Keguruan, 4(1),64– 70.

Sari W. (2021). Wordwall sebagai Media Belajar Interaktif daring dalam Pendahuluan Pendidikan Kegiatan Yang Berbagai Dalam Meningkatkan

Aktivitas Ddan Hasil Belajar Mahasiswa Geografi Pada Mata Kuliah Geografi Desa Kota di Masa Pandemi.Jurnal Ilmiah Media Publikasi Ilmu Pengetahuan Dan Teknologi, 10(1), 1–15.

Sugiyono. (2015). Statistika Untuk Penelitian. Bandung: Alfabeta.

Huda, Miftahul. (2017). Model-Model Pengajaran Dan Pembelajaran. Yogyakarta: Pustaka Pelajar.Imam R, Normansyah .2017. Penerapan Model Pembelajaran PJBL (Problem Based Learning) Untuk Meningkatkan Keterampilan Peserta Didik Dalam Menggambar Ragam Hias Pada Mata Pelajaran Semester Genap Kelas XI IIS 5 SMANegeri 1 Teras Boyolali Tahun Ajaran.