Finger

OPEN ACCESS

Jurnal Ilmiah Teknologi Pendidikan
https://ejournal.1001tutorial.com/index.php/finger

Analysis of the Need for Padlet-Based Learning Media Development to Improve Understanding of Concepts in Class XI Circular Motion Material at SMA Kota Bengkulu

Tri Yulistia

Universitas Bengkulu
Bengkulu, Indonesia
triyulistia17@gmail.com*

Article Information:
Received July 27, 2023
Revised January 25, 2024
Accepted February 04, 2024

Keywords:
Learning; Media; Padlet

Abstract

An effective learning tool is one that can boost students' interest and motivation. Padlet is an easy-to-use, maintain, and set-up collaborative platform. This study set out to find out what educators and students needed in order to create lesson plans for high school students using the Padlet software. The methodology used in this study was qualitative descriptive. The data was gathered through observations, interviews, and literature research. This research instrument consists of these observation and interview sheets. The technique for data analysis is qualitative descriptive data analysis. The results of the learning materials, interviews, and observations that were done show that there is still space for development in the students' conceptual understanding, especially when it comes to the material on circular motion. because students still find it difficult to understand the material they are studying and professors still use a traditional teaching methodology. Therefore, it can be said that Padlet-based development media are still needed at SMAN 1 Kota Bengkulu, SMAN 3 Kota Bengkulu, and SMAN 9 Kota Bengkulu in order to support students' learning and help them understand concepts. This is based on the needs analysis that was conducted at these schools.

A. Introduction

Education is one of the factors supporting the progress of a country. Education is essential in this globalized era since it is a process of learning and a means of enhancing human knowledge and abilities. Because curriculum and material changes can be considered progressive, it is unclear where Indonesian education will end up as of yet. At the center of the fourth industrial revolution is information technology. Modern information technology has several uses that decide how infinitely useful it can be, leading to an astounding amount of tools for simplifying life. This technology is also employed throughout the widespread COVID-19 epidemic (Rodionov et al., 2022).

Indonesia itself is one of the countries that is very concerned about educator empowerment (Kurniawati, 2022). In Indonesia, education has characteristics and local wisdom that is not owned by other countries (Qiptiah, 2023). Education as a human endeavor to cultivate and mold a person's personality in line with cultural and societal principles (Ebohon et al., 2021). It is currently possible to say that Indonesian education quality has declined, with the general public believing that conditions for schooling both before and after the Covid-19 pandemic were equal (Safitri et al., 2021). The Covid-19 outbreak and global school closures caused a sudden shift in education toward online or remote learning. Teachers and students switch from in-person instruction to online or remote instruction, which has an impact on pedagogy, curriculum, and student results in a variety of subject areas (DeCoito & Estaiteyeh, 2022).

How to Cite : Yulistia, Tri. (2024). Analysis of the Need for Padlet-Based Learning Media Development to Improve Understanding of Concepts in Class XI Circular Motion Material at SMA Kota Bengkulu . FINGER : Jurnal Ilmiah Teknologi Pendidikan, 3(1), 102–107. https://doi.org/10.58723/finger.v3i1.201
ISSN : 2830-6813
Published By : Asosiasi Profesi Multimedia Indonesia

The outbreak of Covid-19 has completely shifted the education process to a new phase (Al-Mwzaiji & Alzubi, 2022). The COVID-19 pandemic has affected government, business, and social services. Due to the Covid-19 pandemic, learning that was previously limited to offline settings is now taking place online. However, students and teachers find that there is little opportunity for in-person interaction when learning online, which has a detrimental effect on students' satisfaction (Ebohon et al., 2021). effects of student learning in the same classroom before and during the COVID-19 pandemic using surveys to gauge engagement and learning (Fricker et al., 2023).

The curriculum for autonomous study is an extensive and varied extracurricular program designed to optimize learning so that students have ample opportunity to delve into topics and hone their skills. The goal of independent learning is to provide students more opportunities to explore their individual interests and talents so they can select the best course of study. The independent curriculum wants to create a happy learning atmosphere (Amelia, 2019). The emergence of an independent curriculum supports the spread of education in Indonesia evenly. The concept of this curriculum is the formation of freedom in thinking (Rahmadayanti & Hartoyo, 2022). The curriculum can begin by teaching concepts through a direct and concrete activity before moving on to more abstract material allowing best suited to provide information (Hayes & Kraemer, 2017). With the implementation of this curriculum, which is taught by teachers to students, it can support students against curriculum procedures (Gale et al., 2020).

Learning media is a tool that makes it easier to provide learning messages from a teacher to students. Students that are engaged and motivated to follow the learning process will benefit from interactive learning materials. There are several methods for creating interactive learning materials (Octavina & Susanti, 2021). Understanding is an important goal for education (Son et al., 2018). Because applying information in new settings is the anticipated learning process, learners can build an integrated understanding of ideas and how to apply them in new situations (Shuker & Burton, 2021). Adults have personal qualities associated with motivation to study since adult engagement and training in education depend on motivation to learn (Yamashita et al., 2022).

Concept comprehension is one of the most crucial aspects of teaching physics since it affects students' learning outcomes (Azizah et al., 2020). The relationship between students' learning and thinking styles and their level of conceptual understanding in physics, as well as an examination of the learning and thinking styles that most influence conceptual understanding (Devy et al., 2022). Hard-to-understand physics concepts lead students to believe that physics lectures are challenging, which lowers their enthusiasm to learn and increases their inability to comprehend physics concepts (Nurulhidayah et al., 2020). Test results show the ability to understand how well students performed on assignments; in order to solve problems and find solutions, students need to be able to understand the concepts that were taught during the learning process (Riwanto et al., 2019).

Media is defined as a learning resource that can stimulate learners to learn (Fauziah et al., 2020). Written or unwritten materials are meant to be used as teaching resources. The significance that teaching materials have in providing students with the information they need is significant. Utilizing innovative teaching strategies is crucial to enhancing students' knowledge. A variety of instructional resources will enable the desired level of quality, and comprehension of the content will have an impact on improving learning outcomes (Nuryasana & Desiningrum, 2020). Teaching materials are included in step-by-step instructions to cover student assignments, instructor achievements, data sets, lesson notes with time suggestions and activity logistics, formative and summative assessments, references as additional learning resources (Teasdale et al., 2020).

A good learning medium is a medium that can increase the motivation and interest of students' talents. Learning media can be presented textually, animation, video and images. By using these learning media, it is hoped that students will motivate students more and not be boring for students (Fauziah et al., 2020). Padlet is an easy-to-use, maintain, and set-up collaborative platform. The app makes it possible to share information or have conversations easily using posts, reactions, and comments. The Padlet app is also an interactive platform used for web-based collaborative learning to create online virtual walls or pin boards to share relevant content in the form of posts (Shuker & Burton, 2021). Video is a learning medium that is increasingly used in education, with pictures and videos learning facilities will continue to develop expression, especially for you young people. Knowing the limited resources available allows for a better orientation with the planning and implementation of learning activities using videos and images for students (Arruabarrena et al., 2021). Education today focuses also on engagement on learning technologies (Nkomo et al., 2021).

The importance of unique learning traits in the situational learning process and simulation results as an educational technology tool. When it comes to applying a person-centered approach to learning, the results highlight the significance of individualization because students demonstrate through simulation how learning experiences and results are influenced by individual learner characteristics (Nickl et al., 2022). Self-regulated learners typically have autonomous learning processes because they have the ability to manage their emotions, motivation, and behavior to meet their learning objectives (Cho et al., 2021).

Based on studies carried out by (Khairuman et al., 2022) claimed that Pedlet's online learning materials were practicable to use based on the findings of validation testing, practicality, and efficacy. This rationale led the author to conduct a study aimed at investigating the needs of teachers and students on the development of learning resources for high school students that utilize the Padlet application.

B. Research Methods

The study was conducted at three schools in Bengkulu City: SMAN 1 Kota Bengkulu, SMAN 3 Kota Bengkulu, and SMAN 9 Kota Bengkulu. Three assessment indicators were used in this study: interview indicators, teaching material indicators, and facilities and infrastructure indicators. In-depth descriptive approach was utilized in this investigation. The goal of the qualitative descriptive technique is to analyze problems based on facts through observation, interviews, and document analysis (Yuliani, 2020). Teachers and students might be observed and interviewed in order to apply this strategy. The study employed observation and interview sheets as its instruments. Qualitative descriptive data analysis is the method used for data analysis.

In order to evaluate predefined hypotheses, research data are gathered using research instruments and quantitative or statistical data analysis. Qualitative research methods are grounded in the positivist philosophy and are utilized to investigate a specific population or sample. An investigation of the media requirements for learning was done in this study. An extensive examination of the way teaching materials are used in schools was carried out. Next, the infrastructure and amenities employed by the school, followed by teacher interviews. Three indicators will be used to gauge the demands of learning media in this survey, allowing for an analysis of the needs of both teachers and students to be formed from the data collected.

C. Results and Discussion

Based on the findings of the interviews with physics professors at SMAN 1 Kota Bengkulu, SMAN 3 Kota Bengkulu, and SMAN 9 Kota Bengkulu. Calm infrastructure and facilities, like electrical and internet networks, labs, study spaces, and school buildings, are the first sign. Teachers typically respond that the internet network in schools is limited to the teacher's room and that it is still too expensive for classroom use, forcing students to continue utilizing data packages for online learning. Each school's laboratory has been well-managed, but some of the equipment still needs to be upgraded for the internship process. Despite this, teachers still frequently use projectors to carry out instruction inside the classroom rather than outside, depending on the subject matter they are expected to teach.

The second measure is the resources, activities, media, and teaching materials that are utilized in classrooms. Following an interview, the average response from the instructor regarding the teaching materials utilized in the learning process was that PowerPoint (PPT) was still used for non-print media, based on the content the teacher was going to teach. Certain educators continue to employ basic teaching resources, like conducting PowerPoint and video demonstrations of electronics in front of the class. For student learning interest activities, the typical learning medium combines lecture techniques, discussion, and questions and answers. However, many students still struggle to understand the physics content.

The conversation concluded with a discussion of each school's merits, including study hours, punishments, and the ability to carry communication equipment. Students are free to bring cell phones to class, but they are not permitted to use them for academic purposes unless the instructor instructs them to do so. Regarding the penalty, every school has a teacher room and two hours of study time for physics twice a week, but despite this, instructors still feel unprepared because there is also a practicum that takes a lot of time in addition to the curriculum. According to the interview's findings, the teacher encountered some challenges when working on the physics content because there weren't enough learning resources available.

This study supports the findings of another study (Khairuman et al., 2022) that Pedlet's online learning resources are valuable. He adds that there are benefits and drawbacks to the pedlet application. The pedlet application has the advantages of being accessible from anywhere at any time, without requiring any storage

space, and not requiring installation on our devices. While the drawback of the pedlet application is that this application is the latest application so that the menus in it cannot be used in full, cannot make material sub-menus. It is also possible to construct padlet-based learning materials, per research by (Artanto et al., 2022) The average qualification score for media experts was 4.00 good, for material experts it was 4.90 extremely good, for student responses it was 4.49 very good, and for educator responses it was 5.00 with very good credentials, according to the statistics. These results align with the research findings of this investigation. Therefore, it can be concluded that primary schools should make use of Padlet's learning tools, which are imbued with character education ideas. Teachers and students require educational resources to be developed in order to support learning. Students are supposed to be independent learners since they have the flexibility to study and increase their knowledge whenever and wherever they choose (Yunita, 2022)

So many factors that affect the success of students that play the most role is the educator in this case is the teacher. Currently, the 2013 curriculum guides teachers as mediators and as facilitators in learning. In order for students to conveniently access knowledge, teachers serving as facilitators need to be able to offer a variety of learning resources (Anita Azmi et al., 2020). Teachers and students still require interactive multimedia based on padlets on circular motion material, according to the needs analysis that was conducted by concentrating on three indicators: facilities and infrastructure indicators, teaching material indicators, and interview indicators.

D. Conclusion

Based on the study's findings and discussion, it is feasible to conclude that Padlet-based development materials are still required for the educational process and for assisting students at SMA Negeri 1 Kota Bengkulu, SMA Negeri 3 Kota Bengkulu, and SMA Negeri 9 Kota Bengkulu in understanding concepts.

E. Acknowledgment

The author would like to thank all the lecturers in the Physics Education study program who permitted them to be involved in MBKM research efforts. The license to conduct research was granted by SMA Negeri 1 Kota Bengkulu, SMA Negeri 3 Kota Bengkulu, and SMA Negeri 9 Kota Bengkulu, for which the researcher is grateful.

References

Al-Mwzaiji, K. N. A., & Alzubi, A. A. F. (2022). Online Self-Evaluation: The Efl Writing Skills In Focus. *Asian-Pacific Journal Of Second And Foreign Language Education*, *7*(1). https://doi.org/10.1186/s40862-022-00135-8

Amelia, C. (2019). Problematika Pendidikan Di Indonesia. *Prosiding Seminar Nasional Fakultas Ilmu Sosial Universitas Negeri Medan*, *3*, 775–779.Google Scholar

Anita Azmi, R., Rukun, K., & Maksum, H. (2020). Analisis Kebutuhan Pengembangan Media Pembelajaran Berbasis Web Mata Pelajaran Administrasi Infrastruktur Jaringan. *Jipp*, *4*(2), 303–314. https://doi.org/https://doi.org/10.23887/jipp.v4i2.25840

Arruabarrena, R., Sánchez, A., Domínguez, C., & Jaime, A. (2021). A Novel Taxonomy Of Student-Generated Video Styles. *International Journal Of Educational Technology In Higher Education*, *18*(1). https://doi.org/10.1186/s41239-021-00295-6

Artanto, T. T. R., Widoyoko, S. E. P., & Khaq, M. (2022). Pengembangan Media Pembelajaran Berbasis Padlet Terintegrasi Nilai Pendidikan Karakter Pada Tema 7 Sub Tema 1 Untuk Peserta Didik Kelas V Sd. *Jote: Journal On Teacher Education*, *4*(1), 432–441. https://doi.org/https://doi.org/10.31004/jote.v4i1.6424

Azizah, Z., Taqwa, M. R. A., & Assalam, I. T. (2020). Analisis Pemahaman Konsep Fisika Peserta Didik Menggunakan Isntrumen Berbantukan Quizizz. *Edu Sains Jurnal Pendidikan Sains & Matematika*, *8*(2), 1–11. https://doi.org/10.23971/eds.v8i2.1707

Cho, H. J., Melloch, M. R., & Levesque-Bristol, C. (2021). Enhanced Student Perceptions Of Learning And Performance Using Concept-Point-Recovery Teaching Sessions: A Mixed-Method Approach. *International Journal Of Stem Education*, *8*(1), 1–17. https://doi.org/10.1186/s40594-021-00276-1

Decoito, I., & Estaiteyeh, M. (2022). Online Teaching During The Covid-19 Pandemic: Exploring Science/Stem Teachers' Curriculum And Assessment Practices In Canada. *Disciplinary And Interdisciplinary Science Education Research*, *4*(1). https://doi.org/10.1186/s43031-022-00048-z

Devy, N. K., Halim, A., Syukri, M., Yusrizal, Y., Nur, S., Khaldun, I., & Saminan, S. (2022). Analysis Of Understanding Physics Concepts In Terms Of Students' Learning Styles And Thinking Styles. *Jurnal Penelitian Pendidikan Ipa*, *8*(4), 2231–2237. https://doi.org/10.29303/jppipa.v8i4.1926

Ebohon, O., Obienu, A. C., Irabor, F., Amadin, F. I., & Omoregie, E. S. (2021). Evaluating The Impact Of Covid-19 Pandemic Lockdown On Education In Nigeria: Insights From Teachers And Students On Virtual/Online Learning. *Bulletin Of The National Research Centre*, *45*(1). https://doi.org/10.1186/s42269-021-00538-6

Fauziah, L. R., Jalinus, N., & S, W. (2020). Analisis Kebutuhan Pengembangan Media Pembelajaran Interaktif Berbasis Adobe Flash Cs6. *Al Murabbi*, *5*(2), 1–7. https://doi.org/10.35891/amb.v5i2.2135

Fricker, A. D., Perri, K., & Abdelhaseib, M. (2023). A Covid-19 Shift To Online Learning: A Comparison Of Student Outcomes And Engagement For The Bacterial Unknown Identification Project. *Education Sciences*, *13*(7). https://doi.org/10.3390/educsci13070702

Gale, J., Alemdar, M., Lingle, J., & Newton, S. (2020). Exploring Critical Components Of An Integrated Stem Curriculum: An Application Of The Innovation Implementation Framework. *International Journal Of Stem Education*, *7*(1), 1–17. https://doi.org/10.1186/s40594-020-0204-1

Hayes, J. C., & Kraemer, D. J. M. (2017). Grounded Understanding Of Abstract Concepts: The Case Of Stem Learning. *Cognitive Research: Principles And Implications*, *2*(1). https://doi.org/10.1186/s41235-016-0046-z

Khairuman, K., Zakir, S., & ... (2022). Desain Media Pembelajaran Online Menggunakan Aplikasi Padlet Pada Mata Pelajaran Simulasi Dan Komunikasi Digital Di Smk Swasta Muhammadiyah Singkil. *... Indonesian Journal ...*, *01*(01), 26–41. Google Scholar

Kurniawati, F. N. A. (2022). Meninjau Permasalahan Rendahnya Kualitas Pendidikan Di Indonesia Dan Solusi. *Academy Of Education Journal*, *13*(1), 1–13. https://doi.org/10.47200/aoej.v13i1.765

Nickl, M., Huber, S. A., Sommerhoff, D., Codreanu, E., Ufer, S., & Seidel, T. (2022). Video-Based Simulations In Teacher Education: The Role Of Learner Characteristics As Capacities For Positive Learning Experiences And High Performance. *International Journal Of Educational Technology In Higher Education*, *19*(1). https://doi.org/10.1186/s41239-022-00351-9

Nkomo, L. M., Daniel, B. K., & Butson, R. J. (2021). Synthesis Of Student Engagement With Digital Technologies: A Systematic Review Of The Literature. *International Journal Of Educational Technology In Higher Education*, *18*(1), 34. https://doi.org/10.1186/s41239-021-00270-1

Nurulhidayah, M. R., Lubis, P. H. M., & Ali, M. (2020). Pengaruh Model Pembelajaran Discovery Learning Menggunakan Media Simulasi Phet Terhadap Pemahaman Konsep Fisika Siswa. *Jurnal Pendidikan Fisika*, *8*(1), 95. https://doi.org/10.24127/jpf.v8i1.2461

Nuryasana, E., & Desiningrum, N. (2020). Pengembangan Bahan Ajar Strategi Belajar Mengajar Untuk Meningkatkan Motivasi Belajar Mahasiswa. *Jurnal Inovasi Penelitian*, *1*(5), 967–974. https://doi.org/10.47492/jip.v1i5.177

Octavina, M. T., & Susanti, S. (2021). Pengembangan Media Interaktif Program Lectora Inspire Berbasis Android Pada Materi Jurnal Penyesuaian Perusahaan Jasa Kelas Xi Akuntansi Dan Keuangan Lembaga Smk Negeri 10 Surabaya. *Jurnal Pendidikan Teknologi Dan Kejuruan*, *18*(2), 142. https://doi.org/10.23887/jptk-undiksha.v18i2.34341

Qiptiah, M. (2023). *Penerapan Kurikulum Merdeka Dan Mbkm (Merdeka Indonesia Saat Ini)*. 1–9. https://doi.org/https://doi.org/10.31237/osf.io/z4x2u

Rahmadayanti, D., & Hartoyo, A. (2022). Potret Kurikulum Merdeka, Wujud Merdeka Belajar Di Sekolah Dasar. *Jurnal Basicedu*, *6*(4), 7174–7187. https://doi.org/10.31004/basicedu.v6i4.3431

Riwanto, D., Azis, A., & Arafah, K. (2019). Analisis Pemahaman Konsep Peserta Didik Dalam Menyelesaikan Soal-Soal Fisika Kelas X Mia Sma Negeri 3 Soppeng. *Jurnal Sains Dan Pendidikan Fisika*, *15*(2), 23–31. https://doi.org/10.35580/jspf.v15i2.11033

Rodionov, D., Gracheva, A., Konnikov, E., Konnikova, O., & Kryzhko, D. (2022). Analyzing The Systemic Impact Of Information Technology Development Dynamics On Labor Market Transformation. *International Journal Of Technology*, *13*(7), 1548–1557. https://doi.org/10.14716/ijtech.v13i7.6204

Safitri, A., Putri, F. S., Fauziyyah, H., & Prihantini, P. (2021). Pendidikan Di Masa Pandemi Covid-19 Dalam Penerapan Kurikulum 2013. *Jurnal Basicedu*, *5*(6), 5296–5304. https://doi.org/10.31004/basicedu.v5i6.1631

Shuker, M. A., & Burton, R. (2021). Educational Technology Review: Bringing People And Ideas Together With 'Padlet.' *Journal Of Applied Learning And Teaching*, *4*(2), 121–124. https://doi.org/10.37074/jalt.2021.4.2.9

Son, J. Y., Ramos, P., Dewolf, M., Loftus, W., & Stigler, J. W. (2018). Exploring The Practicing-Connections Hypothesis: Using Gesture To Support Coordination Of Ideas In Understanding A

Complex Statistical Concept. *Cognitive Research: Principles And Implications*, *3*(1), 1–13. https://doi.org/10.1186/s41235-017-0085-0

Teasdale, R., Ryker, K., Viskupic, K., Czajka, C. D., & Manduca, C. (2020). Transforming Education With Community-Developed Teaching Materials: Evidence From Direct Observations Of Stem College Classrooms. *International Journal Of Stem Education*, *7*(1). https://doi.org/10.1186/s40594-020-00251-2

Yamashita, T., Smith, T. J., Sahoo, S., & Cummins, P. A. (2022). Motivation To Learn By Age, Education, And Literacy Skills Among Working-Age Adults In The United States. *Large-Scale Assessments In Education*, *10*(1), 1–20. https://doi.org/10.1186/s40536-022-00119-7

Yuliani, W. (2020). Metode Penelitian Deskriptif Kualitatif Dalam Perspektif Bimbingan Dan Konseling. *Quanta*, *4*(1), 44–51. https://doi.org/10.22460/q.v1i1p1-10.497

Yunita, T. (2022). Analysis Of The Needs Of Developing Teaching Materials Based On Learning Management System. *Finger : Jurnal Ilmiah Teknologi Pendidikan*, *1*(2), 42–52. https://doi.org/10.58723/finger.v1i2.69