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E-learning Platforms for Boarding Schools

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Abstrak

Studi ini meneliti adopsi dan dampak platform pembelajaran elektronik di sekolah berasrama. Sekolah berasrama menghadirkan tantangan pendidikan yang unik, sehingga menjadikannya kasus yang menarik untuk mengeksplorasi efektivitas solusi pembelajaran digital. Studi ini dimulai dengan penilaian kebutuhan komprehensif yang melibatkan pemangku kepentingan seperti administrator, guru, siswa, dan staf TI. Area fokus utama meliputi infrastruktur teknologi, aksesibilitas internet, dan tingkat literasi digital. Studi ini kemudian beralih ke fase implementasi, menguji coba platform pembelajaran elektronik di sekolah-sekolah tertentu untuk mengevaluasi efektivitasnya. Hasil menunjukkan tantangan yang signifikan, termasuk infrastruktur yang ketinggalan zaman dan berbagai tingkat literasi digital. Namun, platform pembelajaran elektronik menunjukkan janji dalam meningkatkan hasil pendidikan dengan menawarkan konten interaktif dan meningkatkan komunikasi. Studi ini membandingkan berbagai platform, seperti Google Classroom, Moodle, dan Microsoft Teams, untuk menentukan opsi yang paling sesuai untuk lembaga-lembaga ini. Temuan menunjukkan bahwa sementara beberapa platform lebih ramah pengguna, yang lain menawarkan kustomisasi dan skalabilitas yang kuat, membuatnya lebih cocok untuk kebutuhan khusus sekolah berasrama.

Kata Kunci: Platform e-learning, Pesantren, Literasi digital

Abstract

This study examines the adoption and impact of e-learning platforms in boarding schools. Boarding schools present unique educational challenges, making them a compelling case for exploring the effectiveness of digital learning solutions. The study begins with a comprehensive needs assessment involving stakeholders such as administrators, teachers, students, and IT staff. Key areas of focus include technological infrastructure, internet accessibility, and digital literacy levels. The study then moves to the implementation phase, piloting an e-learning platform in select schools to evaluate its effectiveness. Results indicate significant challenges, including outdated infrastructure and varying levels of digital literacy. However, e-learning platforms show promise in enhancing educational outcomes by offering interactive content and improving communication. The study compares different platforms, such as Google Classroom, Moodle, and Microsoft Teams, to determine the most suitable options for these institutions. Findings suggest that while some platforms are more user-friendly, others offer robust customization and scalability, making them better suited for the specific needs of boarding schools.

Keywords: *E-learning platforms, Boarding schools, Digital literacy*

1. INTRODUCTION

In recent years, e-learning platforms have emerged as pivotal tools in transforming educational methodologies across various institutions. Boarding schools, known for their unique residential learning environments, face specific challenges and opportunities when integrating digital learning solutions. A city, a

significant educational hub in Indonesia, represents an intriguing case study for exploring the implementation and impact of e-learning platforms within its boarding schools. Adapting such technologies aims to enhance the quality of education, foster interactive learning, and provide continuous access to educational resources, irrespective of geographical constraints. The shift toward digital education is driven by the need for more flexible, scalable, and personalized learning experiences. E-learning platforms offer a range of features, including interactive content, multimedia resources, and real-time communication tools that can enrich the traditional educational model [1]-[7]. In boarding schools, where students live on-site and engage in a rigorous academic schedule, e-learning platforms can be crucial in bridging resource gaps and supporting varied learning styles. This study focuses on how these platforms can be leveraged to address the specific needs of boarding school environments in a city.

The integration of e-learning platforms in educational settings has been widely studied, revealing both the potential benefits and challenges associated with their adoption [8]-[11]. According to a study by Chan and Smith [12], e-learning platforms can significantly enhance student engagement and provide more personalized learning experiences compared to traditional classroom settings. These platforms facilitate access to a wide array of educational resources, support diverse learning styles, and offer tools for real-time feedback and assessment. The flexibility and scalability of e-learning make it particularly beneficial in settings where students are geographically dispersed or where traditional educational resources are limited. For boarding schools, the benefits of e-learning are even more pronounced. Other study [13] highlights that e-learning platforms can address the unique challenges faced by residential students, such as limited access to specialized resources and the need for continuous academic support. The integration of digital tools into the boarding school curriculum allows for a more dynamic and interactive learning environment, which is essential for maintaining student engagement and motivation [14]-[15]. Furthermore, e-learning platforms can facilitate better communication between students, teachers, and parents, enhancing the overall educational experience and fostering a more connected school community.

2. METHOD

The study on e-learning platforms for boarding schools in a city will begin with a comprehensive needs assessment to understand the unique requirements of these institutions (Figure 1). This initial phase will involve conducting surveys with key stakeholders, including school administrators, teachers, students, and IT staff, to gather insights into their current challenges and expectations for an effective e-learning platform. The study will also review existing technological infrastructure, internet accessibility, and the digital literacy levels of both students and educators. Additionally, the analysis will include a comparison of various e-learning platforms currently available, focusing on features such as user-friendliness, scalability, content management, and compatibility with the schools' educational objectives. This thorough assessment will lay the groundwork for selecting the most suitable e-learning solution tailored to the specific needs of boarding schools in the region.

Following the needs assessment, the study will proceed to the implementation and evaluation phases. The selected e-learning platform will be introduced in a pilot program within a small group of boarding schools in a city. This pilot will be closely monitored to assess the platform's effectiveness in enhancing teaching and learning experiences, particularly in the context of a boarding school environment where students have unique schedules and learning needs. Key performance indicators, such as student engagement, academic performance, and teacher satisfaction, will be measured to evaluate the platform's impact. Feedback from both students and teachers will be collected regularly to identify any areas for improvement. The findings from the pilot will inform the broader rollout of the e-learning platform across other boarding schools, ensuring a smooth transition and maximizing the benefits of digital education for all stakeholders involved.

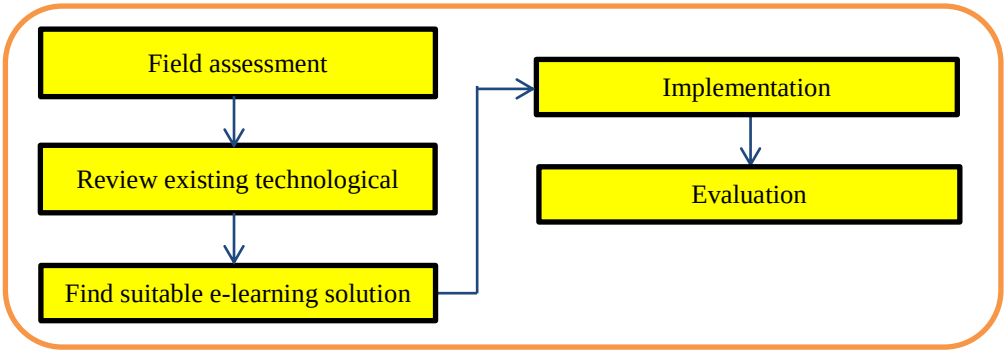

Figure 1 – The study design

3. RESULT AND DISCUSSION

Table 1 presenting examples of assessment results from key stakeholders regarding their current challenges and expectations for an effective e-learning platform, considering existing technological infrastructure, internet accessibility, and digital literacy levels in boarding schools:

Table 1 - The example of assessment results

Stakeholder Group	Current Challenges	Expectations for E-Learning Platform	Existing Technological Infrastructure	Internet Accessibility	Digital Literacy Levels
School Administrators	Limited ability to track and assess student progress due to the absence of integrated digital tools.	A platform with comprehensive analytics and reporting features for real-time monitoring of student engagement and outcomes.	Basic infrastructure with outdated computers and limited access to modern educational software.	Internet access is available but with frequent disruptions, especially during peak usage times.	Moderate digital literacy, with administrators having basic skills but requiring training on advanced digital tools.
Teachers	Difficulty in transitioning from traditional teaching methods to digital platforms, leading to reduced student interaction and engagement.	An intuitive platform that supports interactive content, virtual classrooms, and tools for collaborative learning to enhance engagement.	Classrooms equipped with projectors and basic IT resources but lacking in advanced tools for digital learning integration.	Internet is accessible in most areas, but the connection is slow, affecting the quality of live streaming and video content.	Varying levels of digital literacy; some teachers are proficient, while others struggle with using new technology effectively.
Students	Frequent interruptions in online learning due to unreliable internet connectivity and a lack of access to personal devices.	A platform that is mobile-friendly, with offline capabilities for continuous learning despite internet issues.	Limited availability of personal devices such as laptops or tablets; computer labs are shared and often overcrowded.	Internet access is sporadic in dormitories, leading to challenges in completing online assignments and attending classes.	Generally low digital literacy; students are familiar with basic apps but need guidance on more complex educational software.
IT Staff	Challenges in maintaining and integrating current systems with potential e-learning platforms, leading to frequent technical issues and downtime.	A platform that is compatible with existing systems, scalable, and provides robust technical support to minimize downtime.	Inadequate IT infrastructure with outdated servers and limited storage capacity, posing challenges for new integrations.	Internet bandwidth is limited, often causing slowdowns when multiple users are online simultaneously.	High digital literacy; IT staff are proficient in managing existing systems but require training on new platform integrations.

The assessment results reveal significant challenges across various stakeholder groups in boarding schools, particularly concerning the transition to and implementation of e-learning platforms. School administrators face difficulties in tracking and assessing student progress due to the lack of integrated digital tools. This limitation hampers their ability to monitor and improve educational outcomes effectively.

Administrators expect a platform that offers comprehensive analytics and real-time reporting features, allowing them to oversee student engagement and academic performance more efficiently. However, their existing technological infrastructure is basic, with outdated computers and limited access to modern educational software, compounded by frequent internet disruptions, especially during peak usage times. While administrators possess moderate digital literacy, they need further training to effectively use advanced digital tools. Teachers also encounter challenges, particularly in transitioning from traditional teaching methods to digital platforms, which has led to a decline in student interaction and engagement. They express a need for an intuitive e-learning platform that supports interactive content, virtual classrooms, and collaborative learning tools to enhance student involvement. Despite having classrooms equipped with basic IT resources like projectors, the lack of advanced digital learning tools and slow internet connectivity negatively impacts the quality of live streaming and video content. Teachers' digital literacy levels vary, with some proficient in using technology, while others struggle to adapt to new digital tools, highlighting the need for targeted training and support to ensure the effective use of e-learning platforms.

Table 2 shows comparison of various e-learning platforms based on key features relevant to boarding schools :

Table 2 – The comparison of various e-learning platforms

E-Learning Platform	**User-Friendliness**	**Scalability**	**Content Management**	**Compatibility with Educational Objectives**
Google Classroom	Highly intuitive with a simple interface, easy for students and teachers to navigate.	Scalable for small to large institutions, but may require G Suite for advanced features.	Basic content management with limited customization options. Supports assignment submissions and grading.	Aligned with general educational goals but may require additional tools for specific curriculum needs.
Moodle	Moderate; steep learning curve for beginners but highly customizable once learned.	Extremely scalable; suitable for institutions of all sizes with extensive plugin support.	Robust content management with full control over course materials, assessments, and forums.	Highly compatible; can be tailored to specific educational goals with custom plugins and integrations.
Microsoft Teams	User-friendly, especially for institutions already using Microsoft 365. Integrated with familiar tools.	Scalable, particularly within organizations already using Microsoft infrastructure.	Strong content management with seamless integration with OneDrive and other Microsoft services.	Well-suited for schools focused on collaboration, teamwork, and communication within their curriculum.
Canvas	User-friendly interface designed specifically for educational purposes, easy to learn.	Highly scalable; supports large institutions with extensive user bases.	Advanced content management, including multimedia support, grading, and analytics.	Strong compatibility; supports personalized learning paths and detailed curriculum alignment.
Schoology	User-friendly with an engaging interface, particularly appealing to younger students.	Scalable but may require additional features for larger institutions.	Comprehensive content management, including lesson planning, gradebook, and attendance tracking.	Compatible with a broad range of educational objectives, particularly K-12 environments, but adaptable for higher education.
Edmodo	Very user-friendly, designed for ease	Scalable for small to medium-sized	Basic content management with	Best suited for schools

	of use by both teachers and students.	institutions, may face limitations with very large user bases.	a focus on classroom communication and assignments.	emphasizing communication and interaction, though limited in advanced curriculum integration.
Blackboard	Moderate; interface can be overwhelming for first-time users, but powerful once familiar.	Highly scalable, widely used by large institutions globally.	Advanced content management, including rich media support, assessment tools, and collaboration features.	Excellent compatibility, especially for higher education institutions with complex curriculum and assessment needs.

When selecting an e-learning platform, schools must consider factors such as user-friendliness, scalability, content management, and compatibility with educational objectives. For instance, Google Classroom stands out for its simplicity and ease of use, making it an excellent choice for institutions looking for a straightforward platform that facilitates assignment submissions and grading. However, while it is scalable and can accommodate large institutions, the platform's basic content management features may require additional tools to meet specific curriculum needs. In contrast, Moodle (Figure 2), despite its steeper learning curve, offers robust customization options and extensive scalability, making it ideal for institutions that require full control over their course materials and the flexibility to tailor the platform to their unique educational goals. Microsoft Teams and Canvas offer strong integration with existing infrastructures and are particularly beneficial for schools that prioritize collaboration and teamwork. Microsoft Teams is user-friendly, especially for those familiar with the Microsoft 365 suite, and offers seamless content management through its integration with OneDrive. Canvas, with its advanced content management capabilities and support for multimedia, grading, and analytics, is well-suited for large institutions that require a platform that supports personalized learning paths. On the other hand, platforms like Schoology and Edmodo focus more on K-12 environments, offering user-friendly interfaces and comprehensive content management tailored to younger students, though they may face limitations in scalability and advanced curriculum integration. Blackboard, while powerful and widely used in higher education, can be overwhelming for new users but excels in handling complex curricula with its advanced features and scalability.

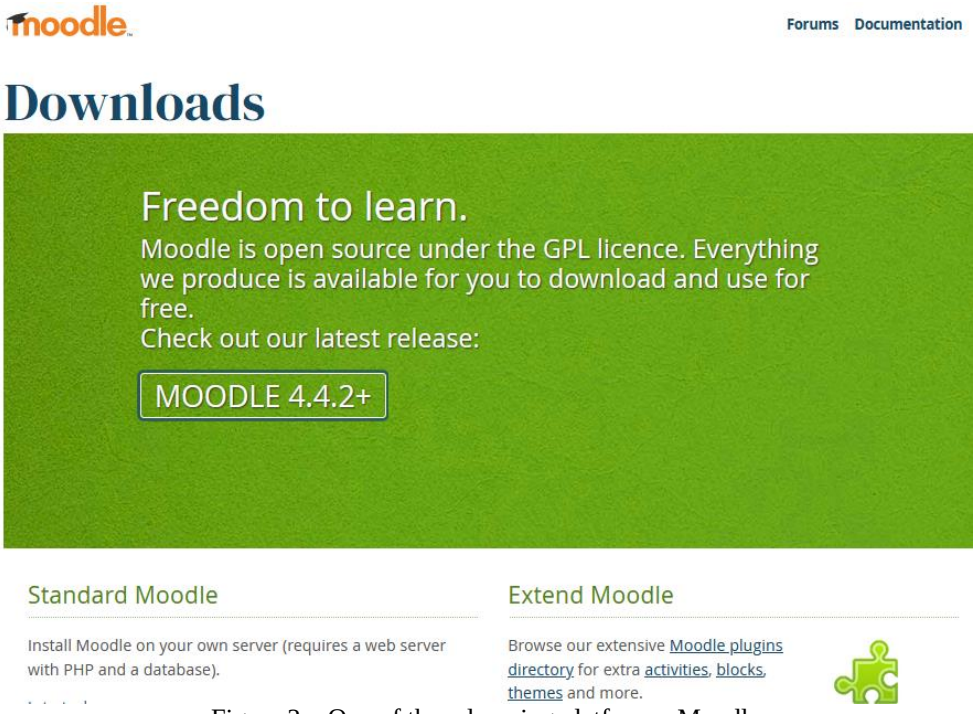

Figure 2 – One of the e-learning platforms: Moodle

4. CONCLUSION

The study on e-learning platforms for boarding schools underscores the potential of digital learning tools in enhancing the educational experience within such unique environments. Through a comprehensive needs assessment, the research identifies significant challenges related to existing technological infrastructure, internet accessibility, and digital literacy levels among key stakeholders. The evaluation of various e-learning platforms highlights the importance of selecting a solution that balances user-friendliness, scalability, and compatibility with educational objectives. The findings from this study suggest that while e-learning platforms can address resource gaps and support diverse learning styles, their successful implementation in boarding schools will require targeted efforts to overcome the identified challenges, ensuring that all stakeholders are adequately equipped to embrace this digital transformation.

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