



Integration of Information Technology-based Management Processes in the Educational Environment

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Abstract. The use of information technology aims to determine the increase in people's productivity so that they can be more creative, innovative and also affective. Therefore, information technology should be applied to the planning, implementation and evaluation of education. This application aims to improve the effectiveness and quality of education in managing the educational institutions they live in. The researcher chose research using a literature review approach by describing in full about the use of information technology in educational institutions. Based on the results of the research that the application of information technology for planning, implementation and evaluation of education carried out in educational institutions is quite good, and also in its implementation it is also seen to be quite good. However, the information channel has not run optimally. Educational decision makers have an important role in education management information systems, especially in planning, monitoring and evaluation. the use of information technology is a major need for the academic community because with this information technology it can make it easier to access information and carry out learning.

Keywords: Information Technology, Planning, Implementation, Evaluation, Education.

1. Introduction

Information technology is a technology that is used with the aim of finding and retrieving data, processing data, manipulating data in order to produce information that is useful for personal, business and government purposes that can be used as accurate decision making. With the emergence of information technology in this society, it spurs changes in human behavior such as a way of communicating where humans do not need to meet face to face with each other but can be through the internet. This has pros and cons which can have a negative or positive impact depending on how society responds.

The role of information technology has been widely used in various agencies, companies and other fields, one of which is the field of Education which can improve

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the quality of an education in a region or country. With the ease of technology in this day and age, many educational institutions try to use technology in their teaching and learning activities in the classroom, because it is estimated to be more effective and efficient if there are elements of technology in it. One platform that is now quite widely used in education in the world is the Learning Management System (LMS).

Learning Management System (LMS) is a software application used to assist in learning processes in E-learning (1). This Learning Management System can also be said to be an application that automates the administration, tracking, and reporting of training events. So that teachers or lecturers can provide materials, learning videos and assignments in the LMS application and students or students can access them easily anytime and anywhere. Therefore, with the existence of LMS, it can provide flexibility to its users to be able to create and manage learning in accordance with learning objectives and objectives.

The use of information technology at this time has not been implemented evenly, especially in Indonesian Education. The use of LMS is also only widely used in higher education institutions in Indonesia, but for elementary schools, junior high schools and high schools, most still do not use LMS as a tool in teaching and learning activities. This is very unfortunate for Education in Indonesia because the existence of this LMS can provide flexibility to students in accessing materials, communicating between students and teachers and others.

With the writing of this scientific article, the author's hope is to be able to provide insight into the Learning Management System to educational institutions in Indonesia. The use of this LMS can have a major impact on education in Indonesia because it will be easier to access information, also carry out learning and provide freedom for students to access learning materials and videos provided without the need to be limited to face-to-face learning in the classroom.

2. Method

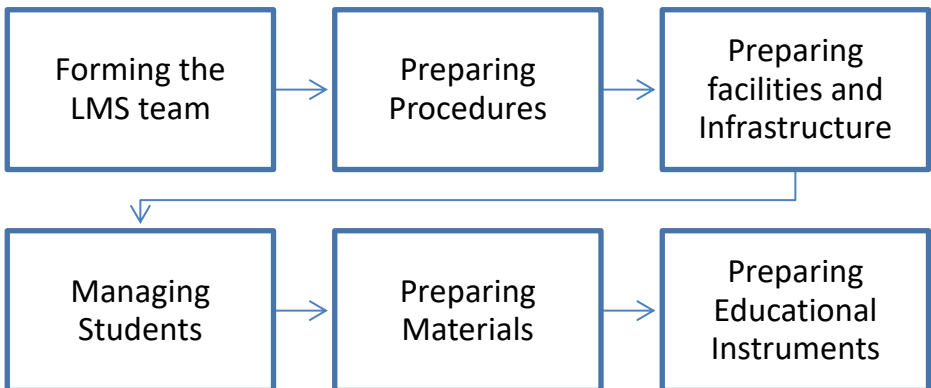
This article uses an analytic-type approach based on a literature review study. Literature study research briefly summarizes and evaluates a collection of writings on a particular topic (2). In general, a literature review has two key elements. First, it should summarize the findings or claims that have arisen from previous research efforts on a subject. Second, the literature review must reach a conclusion about how accurate and complete the knowledge is.

3. Result and Discussion

The main objective of learning is the transfer of knowledge, the factor influencing the learning objectives is knowledge and the effective way to convey knowledge itself. A good process of learning and teaching activities (KBM) will ensure effective knowledge transfer.

LMS Planning

Learning patterns have undergone a very big change after the conditions experienced by Indonesia in particular and the world in general related to the pandemic that occurred. Educational Institutions require activities that were originally face-to-face to turn online so that the knowledge transfer process can continue to run maksimal. according to the results of a survey conducted by Hutubessy in a research article written that students also revealed that they need a video discussion of the material directly by the lecturer because sometimes the material presented by others has not been able to accumulate the discussion of the material provided by the lecturer(3). Therefore, many educational institutions have used this Learning management system, one of which is Moodle-based. Moodle or Modular Object-oriented Dynamic Learning Environment is a platform that is specifically used as a learning management system. that is, if you want to make e-learning so that teaching and learning activities are easier, more effective, Moodle can be an option for agencies that want to implement LMS. According to Lim (4) in the article there are several steps that can be exemplified to plan the use of LMS, namely the formation of an LMS team, then the preparation of procedures, the preparation of facilities and infrastructure, the management of students, the preparation of materials, and the preparation of educational instruments.



LMS Implementation

Research related to the implementation of LMS in learning in schools has previously been carried out by (5) which in the results explained that in the implementation of LMS-assisted learning several supporting factors and inhibiting factors were found. Factors supporting the implementation of LMS-assisted learning are the availability of facilities and infrastructure and mastery of the LMS used. Moreover (5) explained that in addition to the supporting factors above, inhibiting factors also have a major

influence on the implementation of learning, namely student motivation seen from the perspective of teachers and learning assistance at home.

Research related to the implementation of LMS in learning in schools has previously been carried out by (6) relating to LMS media. The difference between the two lies in the research method. In this study only used the literature review research method, while in research conducted by (6) using evaluative research methods with CIPP evaluation model types (con-text, input, process, product).

Further research conducted by Fitriani in (7) which both discuss the Learning Management System. The only thing that distinguishes the research conducted by Fitriani Learning management system is used not only one but also Google Classroom, Edmo-do, moodle, and SEVIMA Edlink.

LMS Evaluation

The main features of the Learning Management System (LMS) are determined based on the needs of the LMS from two perspectives, namely: development and user (8). By (9) In his article entitled The Effectiveness of Using Online-Based Learning Management Systems, LMS is very effective to use and is quite helpful for students and teachers as a means of Virtual Class, this is shown by an Asymptotic Significance value of 0.000 which is smaller than 0.005 which means LMS is considered easy for respondents to use. In addition to the effectiveness of use from LMS, the ease of use obtained resulted in an average of 3.92 with a maximum value indicator of 5 and a minimum value of 1. With regard to the effectiveness of LMS, Kestha (10) have tested the effectiveness of LMS-assisted blended learning in writing learning. The average post-test findings in the experimental group reached (29.9), while the average control group was (23.60). Therefore, it shows that by using LMS in student learning media, it can develop students' writing skills. This is also supported by research conducted by Melton et al. That is, there is a significant difference between classes that use a blended learning model and classes that use conventional models, both learning motivation, and level of understanding (11).

According to (12) The results of testing on 30 students of SMA Aisyiyah 1 Palembang were given 20 questions in the form of multiple choice, the results given showed the need for learning by implementing e-learning tools in the learning process. This aims to increase knowledge that will have a cognitive impact on students on simple harmonic motion material. According to the article written by Imam and Hasan (13) that to be able to achieve students who include affective, cognitive, and psychomotor aspects, it is important that there is character learning that is implemented by teachers to support the strengthening of student character. Because strengthening student character in principle cannot be separated from learning activities, because strengthening student character is also included in the substance that must be taught and realized by students. Therefore, with the use of the Learning management System in educational institutions, it will be able to shape a person's character to be able to develop students' knowledge and mindset.

4. Conclusion

In conclusion, this article underscores the pivotal role of Information Technology, particularly Learning Management Systems (LMS), in transforming the education landscape. It highlights how the adoption of technology has the potential to enhance the quality of education by providing flexibility and accessibility to learning materials, even more so in the face of challenges such as the COVID-19 pandemic. The article also discusses the importance of effective planning, implementation, and evaluation of LMS to ensure its successful integration into educational institutions.

Furthermore, it is evident that LMS, with Moodle as a prominent example, is becoming increasingly vital in facilitating e-learning and adapting to the changing educational environment. The article underscores the need for dedicated LMS teams, clear procedures, infrastructure, and material preparation to harness the full potential of these platforms. Additionally, it emphasizes the role of student motivation and support from educators as crucial factors in the successful implementation of LMS-assisted learning.

Lastly, the article highlights the positive impact of LMS on learning outcomes, citing research that demonstrates improved writing skills, motivation, and understanding among students. It is clear that LMS has the potential to reshape education by providing educators and students with valuable tools to navigate the challenges of modern education effectively.

References

1. Simanullang NHS, Rajaguguk J. Learning Management System (LMS) Based on Moodle to Improve Students Learning Activity. In: *Journal of Physics: Conference Series*. Institute of Physics Publishing; 2020.
2. Knopf JW. Doing a Literature Review Knopf [Internet]. Vol. 39, *Political Science & Politics*. 2006. Available from: <http://hdl.handle.net/10945/50674>
3. Hutubessy ED, Triswantini E, Nur M, Asnur A. Eksplorasi Perencanaan Pembelajaran Bahasa Jerman Berbasis Moodle dengan Integrasi Keterampilan Abad XXI. Vol. 1, *Brila: Journal of Foreign Language Education*. 2021.
4. Iim Wasliman H, Handajani S. Pelayanan Pendidikan yang Prima Melalui Learning Management System (LMS) Berbasis Moodle untuk Mewujudkan Sekolah Efektif pada Masa Pandemi Covid-19 di SMP Negeri 1 Kebumen. *Jurnal Kajian Manajemen Pendidikan Islam dan Studi Sosial* [Internet]. 2022;6(1):2580–9385. Available from: <https://ejournal.iainu-kebumen.ac.id/index.php/cka>
5. Dwi Rusdina A, Restiyanti Pratiwi D. Implementasi Pembelajaran Bahasa Indonesia Materi Menggali Informasi Teks Eksposisi Berbantuan Learning Management System bagi Siswa Kelas X SMA. *Indonesian Journal of Educational Science (IJES)* [Internet]. 2021;04. Available from: <http://lms.smansa.top:1233/>
6. Putra RL, Maulana A, Iriani T. EVALUASI PROGRAM PELAKSANAAN UJIAN ONLINE DENGAN MENGGUNAKAN LEARNING MANAGEMENT

SYSTEM MOODLE BERBASIS ANDROID DI SMK NEGERI 1 JAKARTA. *Jurnal PenSil*. 2019 Apr 10;8(1):47–54.

7. JISICOM (Journal of Information System, Informatics and Computing) [Internet]. Available from: <http://journal.stmikjayakarta.ac.id/index.php/jisicomTelp.+62-21-3905050>,
8. Studi Sistem Informasi P, Komputer J, Caltex Riau Jl Umbansari No P, Lestari Jurusan Sistem Informasi I, Komputer F, Caltex Riau P. Evaluasi Fungsionalitas Learning Management System Berdasarkan ISO/IEC 9126-2 Indah Lestari. *Jurnal Sains, Teknologi dan Industri* [Internet]. 2015;13(1):123–9. Available from: <http://ejournal.uin-suska.ac.id/index.php/sitekin>
9. Sudiana R, Si M. EFEKTIFITAS PENGGUNAAN LEARNING MANAGEMENT SYSTEM BERBASIS ONLINE [Internet]. Available from: www.quipper.com
10. Keshta AS. The Effectiveness of a Blended Learning Program on Developing Palestinian Tenth Graders' English Writing Skills. *Education Journal*. 2013;2(6):208.
11. Melton BF, Bland H, Chopak-Foss J. Achievement and Satisfaction in Blended Learning versus Traditional General Health Course Designs. *International Journal for the Scholarship of Teaching and Learning*. 2009 Jan 1;3(1).
12. Wati DS, Siahaan SM, Wiyono K. EFEKTIVITAS LEARNING MANAGEMENT SYSTEM CHAMILO MATERI GERAK HARMONIK SEDERHANA TERHADAP HASIL BELAJAR PESERTA DIDIK. *LENSA (Lentera Sains): Jurnal Pendidikan IPA*. 2021 Oct 31;11(2):100–9.
13. Imam S, Hasan Argadinata G. DAMPAK PEMBELAJARAN BERKARAKTER TERHADAP PENGUATAN KARAKTER SISWA GENERASI MILENIAL [Internet]. Vol. 3, *JAMP: Jurnal Adminitrasi dan Manajemen Pendidikan*. 2020. Available from: <http://journal2.um.ac.id/index.php/jamp/>

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