

Integration of Odoo Learning Management System with Zoom Video Conferencing for K-12 Students

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Abstract—Many educational institutions use the Learning Management System as an e-learning application. However, the e-learning method is less effective to use because students cannot interact directly with the teacher, so it takes longer to get feedback. The purpose of this research is to make it easier for students and teacher to interact directly (synchronous learning) within the scheduled time according to the e-learning material. The system development method used in this study uses the waterfall methodology with the stages of communication, planning, modelling, construction, and deployment. The framework used is Odoo and Zoom application as video conferencing media. The expected result from developing this system is that students get the optimal benefits of e-learning by making face-to-face online learning schedules with instructors in an integrated Learning Management System (LMS).

Keywords— Education, e-learning, Learning Management System, Odoo, Zoom

1. Introduction

The development of science and information technology at this time is very rapid. Especially the implementation in the development of Learning Management System (LMS). Many educational institutions choose the concept of e-learning to support the learning process. However, in its implementation there are still difficulties, especially those felt by students.

During the Covid-19 pandemic in Indonesia, students were forced to study at home. E-learning applications are used to simplify the learning process at home. In practice, the concept of e-learning with the asynchronous method is considered less effective because students cannot interact directly with the teacher, so if there is material that is not understood it takes a long time to get feedback. Several educational institutions use video conferencing applications for the learning process, but they are not yet integrated with their e-learning applications.

The teaching and learning process through video conferencing is carried out face-to-face (synchronous learning) and requires agreement between students and teachers so that learning activities can run well. The synchronous learning model lacks content management features. This causes students hard to find the learning material they are taking.

Not all students have a stable internet network facility. Slow internet access will hinder the ongoing learning process. The information conveyed by the teacher is not received clearly, coordination between students is disturbed so that learning objectives are not achieved optimally.

In addition, students sometimes forget and do not know there is a zoom meeting that has been scheduled. There is no notification that reminds them to be the main factor in this problem. This of course causes students to be late and even unable to attend the meeting at all because the schedule has been missed.

A. Objectives

The purpose of this study is to integrate the Odoo Learning Management System (LMS) with Zoom video conferencing in order to support the main functions of the system, including 1) Facilitating students to learn through integrated e-learning (Odoo) and video conferencing (Zoom) applications; 2) Facilitating digital content management to support learning; 3) Provides a recording link that can be watched and downloaded from each zoom meeting; 4) Provide notification of meeting schedule alerts via web, email, and WhatsApp.

2. Literature review

A. Asynchronous and Synchronous Learning

E-learning delivery techniques can use asynchronous and synchronous methods. ^[1] In the asynchronous delivery method, teachers and students communicate via messaging (email) or discussion forums, collaborating and sharing ideas over a period of time according to the learning topic. Students can download learning materials anytime and anywhere. The chances of disrupting technological problems such as low internet access speeds are small, because this method provides sufficient time to access learning. The challenge in this asynchronous method is that the teacher must have an attractive teaching strategy in order to motivate students to remain interactive in learning. The exchange of written information through forums is also beneficial for students who do not participate actively in discussions and remain passive readers. However, this asynchronous method has drawbacks because students do not get direct feedback on questions or problems at hand. It is as if the teacher has to be on standby because this method is not limited by time. It is important for teachers to set up clear mechanisms for giving quick feedback to students so that they feel involved and valued. The spontaneity of face-to-face expression was replaced by responses built into forums and via messaging (email).

Asynchronous communication is carried out at different times, so it seems that there is a delay and an extension of time in communicating. ^[2] This communication provides a time lag for students to be able to respond to material that has been uploaded by the teacher.

Asynchronous communication offers time flexibility compared to synchronous. In the asynchronous learning process, it can determine the learning time, because in its use students do not need to worry about schedule problems. Because of this characteristic, messages intended for a wider range are not only in the form of text, audio, video, but also images, graphics, to interactive multimedia. The message conveyed through this communication is usually longer than the message in synchronous communication, thus allowing students to respond based on their personal experience. For example, a teacher provides material in the form of video, text or learning assignments via email, Google Drive, or WhatsApp which can be accessed by students at different times.

On the other hand, the synchronous method provides fast feedback, especially on questions or comments regarding learning problems faced by students. Teachers and students can interact in real time even though they are in different places. Media commonly used are video conferencing, web conferencing, audio conferencing, chat, white boarding or application sharing. The challenge in this method is that it is tied to the scheduled time and requires the availability of good internet bandwidth. Students need to read and understand quickly the written material / presentation delivered by the teacher. Likewise with teachers, they need to adjust the teaching speed according to a predetermined schedule but can accommodate student delays with slower connections.

Synchronous as real time communication. ^[3] This statement explains that synchronous communication requires communicators and communicants to communicate at the same time even though they are not in the same place. Synchronous communication allows for high learner-human interaction and avoids feelings of isolation in communication, because interactions occur between humans and humans. This makes synchronous communication increase social interaction for its users. The form of messages that are exchanged in this communication is usually text, audio, and video via live chat or instant messaging. For example, a teacher teaches mathematics through google meet on a schedule at 08.00-10.00. At the same time, students also take part in learning and interact directly with teachers and other students even though they are from different places.

B. E-learning

Initially, the function of e-learning is as an addition to learning material that students receive in the classroom. It is said to function as a supplement (addition) if students have the freedom to choose, whether to use electronic learning materials or not. ^[4]

The limited learning time in class with the number of students that is not comparable, allows e-learning as a learning supplement for students who have difficulty understanding the material presented by the teacher in the classroom. However, along with technological developments, this e-learning capability can be used as the main media for online learning activities that can facilitate meetings between teachers and students virtually through video conferencing so that two-way communication occurs as well as face-to-face learning in class. In addition, e-learning expands the boundaries of learning to become more flexible. Students can be actively involved in learning, either through discussion forums or live during video conferencing.

C. Video Conference Technology in E-learning

The existence of video conference facilities in e-learning will help the learning process because the teacher and

students are not in the same place. In general, e-learning activities use discussion forums, where students wait for replies to comments from teachers or classmates on the problems at hand. Using video conferencing technology will facilitate the delivery of information by teachers and students in real time. This video conferencing technology allows all students to see, hear and work together directly because this technology provides complete visualization using multimedia video, audio and data.

In a previous study ^[5], there were three generations of distance learning models in the use of learning media. The first generation is a correspondence model that utilizes printed media such as books, student worksheets, journals, and others as teaching materials. The communication media must be face-to-face or through manual correspondence. Then in the second generation, it developed to use additional learning media in the form of audio tapes, recorded videos, interactive videos (VCD, DVD). In this generation, teachers and teachers do not communicate directly, communication only occurs in one direction so that the weakness of this second generation is that students are not motivated to be active in learning, only as readers, listeners and spectators. Furthermore, the third generation is based on two-way communication through media such as the internet and video conferencing which allows direct interaction between teachers and students both individually and in groups. The exchange of information and a sense of community is maintained even though only through visual and audio forms. Even its use is not limited to visual or audio performances, but can send files and carry out interactions like face-to-face meetings in class, such as direct questions and answers. However, this third generation requires synchronization of time between teachers and students even though they are in different places. In addition, a good internet connection is needed so that the video does not interrupt while learning is taking place. Video recording documentation is required so that students who are lagging can repeat or watch the learning video.

Zoom is an application that provides video communication features with cloud storage that is very easy to access and operate. Zoom is the leader in the meeting solution ranks.

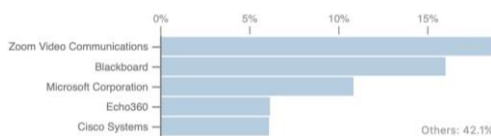


Fig. 1. Ranking of meeting solution ^[6]

References

1. Teapriangga, Archie. "Tren Target dan Realisasi Penerimaan Pajak Satu Dekade Terakhir" 05 Februari 2020. <https://news.ddtc.co.id/tren-target-dan-realisasi-penerimaan-pajak-satu-dekade-terakhir-18772>.
2. Undang-Undang No 36 Tahun 2008 tentang Perubahan Keempat Atas Undang- Undang Nomor 7 tahun 1983 tentang Pajak Penghasilan.
3. Undang-Undang Nomor 28 Tahun 2007 tentang Ketentuan Umum Tata Cara Perpajakan.
4. Undang-Undang Republik Indonesia Nomor 16 Tahun 2009 tentang Penetapan Peraturan Pemerintah Pengganti Undang-undang Nomor 5 Tahun 2005 tentang Ketentuan Umum dan Tata Cara Perpajakan menjadi Undang- Undang.
5. Wahyu, Hifayar, SE., MM Dr. Wastam. 2018. Dasar-Dasar Analisa Laporan Keuangan. Ponorogo : Uwais Inspirasi Indonesia.
6. Wira Sakti, Asrul Hidayat. 2016. Tax Amnesty Itu Mudah. Jakarta Selatan : Visimedia.
7. Yanti, Lia Dama dan Listyani Hartono, 2019. *Effect of Leverage, Profitability and Company Size on Tax Aggressiveness (Empirical Study : Subsector Manufacturing Companies Food, Beverage, Cosmetics and Household Purpose Manufacturing Listed on the Indonesia Stock Exchange for 2014- 2017)*. *International Journal of Accounting Budhi Dharma University*.
8. Zsazya." Agresivitas Pajak, Simak Pemahaman dan Risikonya di Sini!" 24 November 2019. <https://www.online-pajak.com/agresivitas-pajak>.