

Five E-Learning for Education in Indonesia

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Abstract. The development of technology is a key factor in the change in the education system. One important issue in organizing the National Education System is determining what efforts should be made to improve the quality of education. This study aim was to find out what e-learning has been developed in Indonesia. At present, E-learning has been implemented in various schools, universities, institutions and industries. They combined two components: computer technology and computer network to do distance learning. They allowed students to learn through computers in their respective places without attended the classes. Currently it was widely used in Indonesia, especially for secondary schools, namely Edmodo, Schoology, Moodle, Quipper and Ruangguru.

Keywords: *E-learning, education in Indonesia*

I. INTRODUCTION

Bishop G. (1989) predicted that future education would be flexible, open, and accessible to anyone who need it regardless of gender, age or experience previous education. While Mason R. (1994) argues that future education will be more determined by information networks to interact and collaborate. Education has an important role in improving people's welfare [1]. Improving the quality of education is one of the main strategies besides equal opportunity and access to education and increasing relevance and efficiency. One way to improve the quality of education in Indonesia is by increasing the competence of educators through continuous professional development [2].

The educators competence can be improve by conducting training. Yet, in Indonesia this implementation is still not optimal. This is due to the lack of implementing agencies and the number of informants compared to the number of educators who should receive the training. The other reason is the educators also have limited time so they cannot just leave school teaching activities [2].

Before they found e-Learning, in late 1997, Elliott Masie's learning teacher said, "Online learning is the use of network technology to design, deliver, select, manage, and expand learning." In 1998, I wrote, "E-learning is learning about Time Internet, the convergence of learning and networking. E Learning is a vision of what can be corporate training. [3]

E-learning is an educational method that aims to provide education or training programs for students or training participants anytime and anywhere using information and communication technology (ICT). E-learning has witnessed increased use and research in the last decade. [5] Some considerations as to why e-learning began to be adopted and

implemented, among others because e-learning is a relatively fast way to distribute teaching materials and the material can be updated quickly. E-learning can be accessed by more than one user [6].

Zinn (2000) states that E-learning is a concept that developing, rooted in the concept of Computer-Assisted Instruction (CAI) [7]. Historically, there have been two common e-learning m Odes: distance learning and computer assisted instruction. Learning distance uses information technologies to deliver instruction to learners who are remote locations from a central site. Computer assisted instruction (also called computer-based learning and computer-based training) uses computers to aid in the delivery of stand-alone multimedia packages for learning and teaching [12].

Indonesia has used a lot of e-learning to help the learning process [8] [9] [10] [11]. Reference [10] [11] making e-learning as a teaching material that is very helpful in explaining the material being studied. Currently, Indonesia is ranked as the 8th highest e-learning growth in the world [13]

II. E-LEARNING

E-learning is no longer an unfamiliar word a few years back. E-learning technology includes all parts of applications and processes, including Computer Based Learning, Web based Learning, Virtual Classroom and Digital Collaboration [14]. Electronic learning (e learning) is a transformation from textbooks to electronic books equipped with interactive media that can be delivered to the educational needs of students and postgraduate learners [15].

E-learning, is rapidly become the preferred route to build and maintain an advance of performance capabilities through improve efficacy and effectiveness [16]. This technology will potentially improve the learning process, not replace lecturers or teachers. For lecturers and students, the implications of E-learning are very broad [17]. E-learning is able to explain things that cannot be explained by the teacher verbally. E-learning has five types [18]. The types of E-learning are:

A. Learner-Led E-Learning

Learner-Led E-Learning aims to provide an effective learning experience for independent students. Other names of this type are self-directed e-learning. Learning materials presented in the form of multimedia presentation, HTML, and other interactive media are packaged and delivered through internet networks or websites.

Advantages of Learner-Led E-Learning:

- Learners are not required to conform to the instructor's schedule.
- Learners are empowered by the ability to learn when, where, and as much as they wish.
- Learners develop self-reliance.
- All learners get the same quality of learning experience.
- Learners are not intimidated by an instructor. They do not feel they are being judged.
- Learner-led courses are less expensive to deploy and conduct

B. Instructor-Led E-Learning

Instructor-Led E-Learning aims to convey learning as in conventional or face-to-face classes, so that the learning technology used is real time. For example, video conferencing, audio, chat, bulletin boards, and the like. Instructor-Led E-Learning Benefits:

- The instructor can answer questions and solve problems as they arise.
- Instructors provide authority that some learners need for motivation.
- An instructor can adjust the course to suit the needs of specific learners.
- Instructors can grade activities and tests too subtle for automated scoring.
- Instructors can sympathize, empathize, urge, cajole, and inspire learners.
- Instructor-led courses are quicker and less expensive to develop.

C. Facilitated E-Learning

Facilitated e-learning combines the reliance on Web content found in learner-led e-learning with the collaborative facilities found in instructor-led e-learning (discussed later). It works well for learners who cannot conform to the rigid schedule of classroom training but who want to augment learning through discussion with other learners as well as with a facilitator. Assignments are typically made by posting them to a class discussion forum, where learners can also "hand in" their completed homework.

Independent learning materials and interactive and collaborative communication are shared through the website. Independent learning materials in the form of audio, video, text and others. While interactive communication in the form of discussion forums, video conferencing, and chat.

D. Embedded E-Learning

E-learning is designed to provide immediate assistance or right away. Aimed at people who want to master a certain skill or knowledge with the help of an application. In Indonesia the example is the Ruangguru application. With this application, if you have difficulty while doing homework, you can be assisted by professional teachers directly. Here you do not need a lot of cost, time, and effort in doing homework because consultation can be done through chat and telephone.

E. Telementoring and E-Coaching

Telementoring and E-Coaching are used to provide remote guidance and training. Here tools such as audio or video conferencing, chatting, instant messaging, or telephone are used to guide students.

III. E-LEARNING TRENDS IN INDONESIA

A. Moodle

Moodle is a name for an application program that can transform a learning media into a web form. This application allows students to enter into "digital classrooms" to access learning materials. By using Moodle, we can create learning materials, quizzes, electronic journals and others. Moodle stands for Modular Object-Oriented Dynamic Learning Environment, which was first introduced by Martin Dougiamas. He is a computer scientist and educator, who developed an LMS at one of the Perth, Australia colleges [20]. Moodle is one example of open source that is free and freely obtained through <http://moodle.org>. The advantages of moodle with other LMS are easy to use in developing an e-learning. Besides that moodle can be made according to the situation needed. Currently, there are more than 49 thousand e-learning sites spread over more than 210 countries that were developed with moodle (<http://moodle.org/sites>). Whereas in Indonesia, there are more than 594 e-learning sites that are developed by moodle [20].

Moodle also has several features: Assignment, chat, forums, quizzes, and surveys. Assignment is useful for giving assignments to learners' online, and collect by sending the task file in the space provided. Then, chat is a place for online conversations. The forum is used for discussions to discuss material that has been and will be studied. The quiz allows the instructor to hold examinations online. The survey is used to carry out opinion polls online.

Moodle also provides convenience to replace e-learning website themes using template techniques. Moodle provides many interesting theme models. In addition, it does not rule out the possibility for us to design and make the forms themselves. Some language choices have also been provided by the Moodle application. Support for this particular language continues to grow and can be obtained by downloading it from the website www.Moodle.org. Currently the use of Indonesian has also been supported by Moodle. So that the learning website that we make appears in Indonesian. Moodle supports the distribution of learning packages in SCORM format (Shareable Content Object Reference Model). SCORM is a standard distribution of electronic learning packages that can be used to

accommodate various types of learning material formats, both in the form of text, animation, audio and video.

By using the SCORM format the learning material can be used anywhere in the application of other e-learning that supports SCORM. Currently there are many e-learning applications that support this SCORM format. Thus, between educational institutions, schools or campuses can exchange e-learning material to support each other this electronic learning material. Lecturers or instructors simply make an e-learning material and store it in a file with the SCORM format and provide the learning material wherever the lecturer or instructor is on duty.

B. Edmodo

Edmodo is a free and secure learning platform available at www.edmodo.com. This website looks similar to Facebook, but it is much more private and safe for a learning environment [21]. Edmodo provides a safe and easy way to communicate and collaborate among students and teachers, sharing content in the form of text, image links, video and audio. Edmodo aims to help educators utilize social networking facilities in accordance with the conditions of learning in the classroom [22].

Edmodo is an educational technology company that offers communication, collaboration and guidance tools for teachers and K-12 schools. Edmodo Network allows teachers to share content, distribute quizzes, assignments, and manage communication with students, colleagues, and parents. Edmodo was established on September 1, 2008, its headquarters is located in San Mateo, California, USA.

Founded by Nic Borg, Crystal Hutter, Jeff O'Hara. The features contained in Edmodo, namely polling:

- Polls: items that can only be used by the teacher to find out student responses to certain things.
- Gradebook: similar to student grades. This feature also allows a teacher to manage the assessment of learning outcomes from all students. The teacher can easily add the assessment period to the Progress Book, add assignments and values using the computer, and then monitor the values of each student easily. Organized data also makes it easier for teachers to monitor the progress of each student, his progress in the learning process, and the ranking of students in a class.
- File and Links: to send notes with file attachments and links. Sometimes the teacher needs additional material such as pictures so students can better understand the lessons provided, with this feature the teacher can provide links that can be accessed by students.
- Quiz : This feature can only be made by the teacher, while students do not have access to create quizzes. They can only work on the quiz questions given by the teacher. The quiz is used by the teacher to provide online evaluations to students in the form of multiple choices, short entries and description questions.
- Library: teachers can upload teaching materials such as material, presentations, pictures, videos, reference sources, and function as a container to accommodate various files and links that are owned by the teacher and students.

- Assignment: used by teachers to assign assignments to students online, equipped with deadlines, attach file features that allow students to send assignments directly to the teacher in the form of document files (pdf, doc, xls, ppt), and also the "Turn in" button on assignment assignments that function marks that students have completed their assignments.
- Badge Awards: used to give an award to students or groups as a form of appreciation for their achievements. This adge can also be a motivation for students to do various tasks well.
- Parent Code: Every time a student creates a student account in Edmodo, the student will automatically get a unique Parent Code that can be used by his parents to also create a special account for parents. Every parent only needs one Parent Account, which can monitor all groups followed by students. If a parent has more than one child, the parent only needs one account that can monitor the learning process of all his children only from that one account. With this feature, parents can monitor the learning activities of their children. To get the code, parents can get it by clicking on the name of the class / group of their children in Edmodo or can get it directly from the teacher in question.

Some studies [22] [23] are examples of the use of edmodo as a medium for learning. [23] it can be concluded that the use of Edmodo is very helpful to support learning process. Especially, in Basic Vocational Competencies it can be seen from the student's responses and learning outcomes. Edmodo has many advantages in terms of the features offered, but it has the disadvantages too.

C. Schoology

Schoology is a web-based learning tool that prepares features for collaboration and learning that are used by Farmington. Schoology allows access between teachers and teachers, teachers and students, as well as students with other students who are in a safe and user-friendly environment [24].

Schoology has a design similar to Facebook, from conversations, messages, status and information shared. There are two main contexts in schoology: 1) interactive communication and information exchange, 2) academic [27]. Schoology provides the features of schoology as follows: Courses, Discussion Groups, Resources, Quiz, Attendance and Analytics [25]. From these features the teacher can make discussion questions and assignments to create interactions between students and teachers. Students can also ask questions and send comments. Schoology facilitates academic information for students so students can access teacher grades, attendance, notes, and feedback on electronically delivered tasks [27].

The Schoology application is also available for iPad, iPhone, Android, and Kindle mobile devices to make it easier for users to access this application [28]. The use of schoology encourages students to voluntarily carry out activities inside and outside the classroom. Rather than relying too much on old methods of teaching and learning, combining teaching in this digital era can help students become more involved in their studies.

Likewise, Greenwich Public Schools in Connecticut, USA has decided to implement Schoology recently. According to Phillip Dunn, the director of technology and digital learning of the said institution, the new system will support communications among teachers, students, parents and administrators; store digital assignments and assessments that can be easily used in classroom when teaching; enable teachers to set up online groups to share best practices and allow students to submit homework online and get feedback from their teachers [29].

D. Quipper School (QS)

Quipper is an educational technology company with the mission of providing the best education to remote areas. First established in 2010 in London - England, Quipper services can now be enjoyed in several countries such as Japan, Philippines, Mexico and Indonesia. Since 2015, Quipper has become part of the Indonesian education ecosystem by contributing to improving, and distributing quality education for teachers and students.

The quipper service in Indonesia is divided into four, namely Quipper School (QS), Quipper Video, Quipper Video masterclass and Quipper Campus. QS is a learning management system for teachers and students. Quipper Video is an online video-based e-learning for independent learning. Quipper The masterclass video is a quipper video with additional consulting services with private tutors & tutors. Whereas Quipper campus is the most complete and quality campus information portal.

Quipper School is a learning media with the latest open source based e-learning system, and was launched in February 2014. Quipper School is a method of giving assignments online to students. The flow of a teacher makes the class along with the class code, then students register to enter the online class, then students work on the questions given by the teacher, anywhere as long as the area is connected to the internet [30]. Quipper School can be accessed by teachers and students who have registered themselves at the <http://www.quipperschool.com/> site and users are free or free. Quipper School can be accessed by students through electronic devices / gadgets in the form of smartphones, BlackBerrys, PCs / Computers, Laptops and Tablets [32].

A study investigating the affordability of Quipper School revealed that QS had at least three features that other LMS platforms such as Moodle and Claroline did not have. First, QS does not require installation on an existing hosting site. It provides teachers and students with a web-based learning application that is ready for use. Second, QS gives teachers virtual storage that allows them to upload and store their teaching materials and media such as PowerPoint presentations, PDF files, images and videos. Third, the storage available on the website helps teachers to maintain a record of their teaching and learning activities, so that they can monitor student learning activities [31].

A study found that (1) the application of Quipper School had a positive influence on aspects of educational technology in enriching mathematics learning students of Class VIII SMP PGRI Kramatwatu to be more involved in classroom learning activities, (2) students of Class VIII Kramatwatu PGRI Middle School with Quipper School assisted learning has a higher value acquisition and has a

positive effect on learning independence especially in flat wake material [30].

Quipper School is suitable for use as a medium of teaching with students today, because: First, students are familiar with the use of smartphones and personal computers. Second, involving students with online learning will increase their motivation [31]. Quipper School Learning Management System is effective for increasing student motivation and learning outcomes [32].

E. Ruang Guru

Ruangguru is the largest and most comprehensive technology company in Indonesia that focuses on education-based services, it has more than 6 million users and has managed more than 150,000 teachers offering services in more than 100 subject areas. The company was founded in 2014 by Belva Devara and Iman Usman, both them managed to enter the ranks of successful entrepreneurs under 30 years through Forbes 30 under 30 for consumer technology in Asia [33]. The teacher room is the first e-learning by Indonesian children to get various awards such as Google Launchpad Accelerator 2016, UNICEF Youth Innovation Forum 2015, Bubu Awards 2016 - Indonesia's Best Education Web and so on.

Ruangguru is committed to being a partner for local governments to provide quality education through the Learning Management System (LMS). Last year, Ruangguru managed to work with 32 (out of 34) provincial governments and more than 326 city and district governments in Indonesia. In addition, Ruangguru also offers subscription learning videos, private tutoring marketplaces, on-demand tutoring services, online exam tryouts, etc. [33].

Ruangguru Mobile Application is a learning application with the most complete learning solutions for all learning difficulties. In this application, students can understand the material more easily with videos, quizzes, infographics, difficult questions and material consultations with online tutors, ordering private tutors (not only academic teachers but also non-academics), and taking part in the Final Examination tryout, University Entrance Exam called SBMPTN, and other exams. The features available in the Ruangguru Mobile Application include:

- Ruangbelajar : Ruangbelajar is a place for independent online learning through learning journeys consisting of thousands of videos, infographic summaries, and thousands of quizzes and practice questions for each sub-topic lesson. In addition, students can also monitor the progress of learning directly every day through study room report cards.
- Digitalbootcamp: Digitalbootcamp is an online guide supporting all preparation for learning starting from 6th grade to 12th grade high school to SBMPTN. Learning facilities provided are group chat subjects with brother tutor standby, learning modules, online tryout, and other exciting learning facilities.
- Ruangles: Ruangles can improve students' abilities both academically and non-academically by ordering private tutors who are experienced in their fields to come and teach at home.
- Ruanglesonline: Ruanglesonline provides facilities for students to ask lessons to tutors via the application.

- Ruanguji: Ruanguji is a place to measure readiness to take an exam by doing a tryout. Not only the National Examination, but also can find questions about Uniniversity Entrance Exam, Final Examination in School and other examinations. After completing work, students also get discussion, analyze topics of weaknesses and rank directly

IV. CONCLUSION

E-learning has been implemented in various schools / universities, institutions and industries. E-learning allows students to learn through computers in their respective places without attend the classes. Indonesia has used a lot of e-learning to help the learning process. E-learning is currently widely used in Indonesia, especially for the Middle School level namely Edmodo, Schoology, Moodle, Quipper and Ruangguru.

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