

# Benefits and Challenges of E-learning: Review in Politeknik Negeri Semarang

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## ABSTRACT

In this paper, we evaluate the advantages and challenges of E-learning in Politeknik Negeri Semarang. The advantages of E-learning are: the students think that E-learning is very convenient because they can reduce print work, get the material efficiently, get a real-time score after examination, have a more interactive class. The challenges of E-learning such as the interface is less user-friendly, do not have a mobile version, no feature for creating a user and forget the password. Also, E-learning has advantages for lectures in the multimedia facility as a form of variation of learning methods. So that the existence of this facility can reduce the saturation in learning. On the other hand, plagiarism and time preparation is the biggest challenges for lectures.

**Keywords:** E-Learning, Benefits, Challenges.

## 1. INTRODUCTION

Present-day, the E-learning system becomes a popular method for supporting teaching and learning in many universities in the world [1]. Many universities and institutions tend to offer E-learning services for students, customers, and staff in order to improve knowledge transfer processes and enhance the efficiency of the education process in general [2]. E-Learning is learning by utilizing an extensive array of electronic technologies on delivery methods to the educational curriculum [3]. E-learning system becomes a popular method for supporting teaching and learning in many universities in the world. The advantages of e-learning are recognized worldwide, but its impact on learning achievement and knowledge transferring is not confirmed clearly [1]. The Ministry of Education (MOE) in Indonesia is implementing learning methods using E-learning in every university to improve the quality of education, increase the teaching quality and help the student in the class. Therefore, the MOE gives points to the campus that uses e-learning for accreditation in study programs and institutions. It means that all campuses in Indonesia should adopt the system by using e-learning in order to get more scores for the accreditation

process. Although the e-learning system can help students to access learning materials, and to make it easy for the learning and teaching process, the using rate is still low, and the real effectiveness of the e-learning system on learning achievement and knowledge transfer processes are not measured precisely [1]. E-learning may not fit every learner. Thus, identifying specific characters of learners and learning systems may contribute to the success of online electronic platforms, predicts results and help to manage the appropriate ways to accompany learners [4]. In Politeknik Negeri Semarang (POLINES), an e-learning system based on Moodle (an open-source platform) has been implemented and deployed to support the learning process. POLINES uses an e-learning system for uploading the material of the teacher and the student can download the material from everywhere. Furthermore, another function is an online assessment. The students can directly answer the question in the system. Implementation of E-learning is considered very helpful for teachers and students in the learning process and can also be used for the collection of daily tasks. However, there are still some challenges faced by the campus in the implementation of e-learning. In the implementation of E-Learning, the university does not just apply

technologies and upload learning content. Universities also need to have mature and fundamental planning. The failure of E-Learning is often caused not by technological matters but the inability of educators and universities in providing the planning of the learning process and less attention to non-technical domains [5]. In this research, the authors identify challenges, benefits, and possibilities to integrate learning in the Politeknik Negeri Semarang.

## **2. LITERATURE REVIEW**

This section defines E-learning, critical success factors, E-learning in Polines and Moodle as a Learning Management System.

### **2.1. E-learning**

E-learning (abbreviation for electronic learning) is a computer-based education that allows students to learn without restrictions of time and place [6]. E-learning is a modern educational technology to facilitate the learning and learners, with the help of software applications and a virtual learning environment. There are various similar concepts to E-learning, such as Computer-based training (CBT), Internet-based training (IBT), and Web-based training (WBT) [7].

E-learning tools such as the web have been used to distribute course material due to its usability and accessibility. However, the quality of learning needs to be concerned as it relates to the quality of web-based teaching in delivering the material and it differs from the traditional learning-based method in which the learning environment is face-to-face [8].

The student can access the material from a learning management system that is already provided by the lecturer before the class begins. To construct the knowledge, student to lecturer and student to student can discuss the material through forum discussion or chatting room. Assessment for learning being conducted through an assignment can also be given through the learning management system [9].

Besides, more academicians and institutions are concerned with the students' quality in performing assessments such as in a test or quiz by using E-learning. That is difficult to control and regulate harmful activities like cheating, plagiarism and copy and paste [10].

In this paper, we aim E-learning as a form of distance learning using information technologies dedicated to education (IT4E) as the use of the internet to interact with distance learners and deliver academic material to allow students and teachers to achieve their learning objectives [11].

### **2.2. Critical Success Factors in E-learning**

Critical success factors of E-learning include intellectual propriety, courses adaptation to an E-learning environment, online training success measurement, technology simplification for users, interactions between peers and other elements [11].

According to Selim [12], critical success factors of E-learning can be classified into four kinds: 1) instructors' characteristics, 2) students' characteristics, 3) technological infrastructure and background, and 4) institutional sustain.

To support the successful implementation of E-learning, it should be noted that higher education institutions are required to build a learning culture to gain learners' motivation as well as technical knowledge of learners and lecturers, e-learning materials, and also user perceptions as needed. to be considered in implementing E-learning [9].

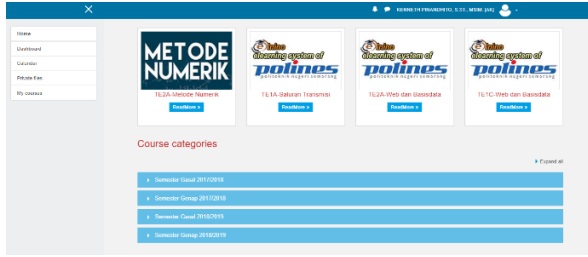
Govindasamy reported seven critical factors for e-learning implementation including institution support, faculty support, student support, teaching and learning, course structure, evaluation and assessment. Strong pedagogical foundations, especially content issues, student support and assessment, are essential for the success of e-learning implementation [13].

According to Volery [14], technological factors (ease of access, support interaction, design, etc.), instructors' characteristics (attitude toward students, teaching style, technical competence, encourage students interaction, etc.) and students' characteristics impacted online delivery effectiveness.

### **2.3. Use of E-Learning in Indonesia: Politeknik Negeri Semarang**

POLINES has adopted E-learning as early as the year 2015. E-learning of POLINES System is an electronic learning system that is a complementary learning method at POLINES.

POLINES uses Moodle as a platform to establish an E-learning system (see Figure 1). With the look of a web page in general, Moodle has a feature for the class (of course), where teachers can upload materials, questions, and tasks. Students can log in to Moodle, continue to choose which is available or registered for it. Student activity in Moodle will be monitored progress and its score.



**Figure 1.** E-learning POLINES

E-learning in POLINES is one form of learning method perceived as student-centered. Utilization of E-learning in order to motivate improving the quality of learning and teaching materials, the quality of

activities and independence of students, as well as communication between lecturers with students and among students.

In lecturing activities, POLINES provides convenience to students with the E-learning formed by UPT IT (IT Department), which is a learning website where all the lecture materials can be obtained by downloading students. In addition, students can also collect lecture assignments by uploading them to the site. As well as with E-learning students can also do exam questions online and can know the score on the spot.

**Table 1.** Interview questions with category clusters and superordinate topic areas

Superordinate topics	Category clusters	Allocated questions
General benefits and challenges	Students	What do you see as the advantages or disadvantages of E-learning in the class?
Suggestion for E-learning in the future	Students	What kind of feature want to add to the e-learning system?

**2.4 Moodle**

Moodle (Modular Object-Oriented Dynamic Learning Environment) is an Open Source e-learning platform. Moodle is a Course Management System (CMS) - a software package designed to help educators to create quality online courses [15].

Considering that nowadays Moodle is one of the most used LMS (7600 websites over 230 countries) our proposal as well as this section is focused on those projects and researches that implement this LMS as a solution to provide e-learning [16].

**3. RESEARCH METHODOLOGY**

We used a qualitative research approach to investigate the advantages and challenges when the student uses the E-learning system. We chose a semi-structured interview as the evaluation procedure because, in addition to allowing open questions and answers, it also ensured the comparability of the interviews [17].

**3.1. Participants**

Qualitative research: This is made through direct interviews with 12 students (4 people every class), who already used the E-learning system at POLINES.

Among the respondents was 42.3% male and 57.7% female respondents. 12% of respondents were the second, 60% the third, and 28% four years of the study. The purpose of this stage is to select the best appropriate perception of the advantages and drawbacks of using E-Learning.

**3.2. Data collection**

The interviews are conducted using social media and telephone to students. In order to obtain accurate data, we ask the students who understand the use of the menu in an e-learning system and request directly to the head of the study program. Because not all students ever or understand e-learning.

**3.3. Data analysis**

According to Keis [18], interviews question can be divided into superordinate topics, category clusters, and allocated questions. Interview responses focused on student perspective, which in turn were assigned to the two superordinate topic areas ‘General advantages and disadvantages and ‘Suggestion for E-learning in the future’ (see Table 1). The first topic area required the students to give their perspective on a higher level of abstraction, whereas the second reflected their viewpoint.

## 4. RESULTS AND DISCUSSION

### 4.1 Benefits of E-Learning

The adoption of E-learning in education, especially for POLINES has several benefits, and given its several advantages and benefits, e-learning is considered among the best methods of education.

Based on our interview with 12 students, almost all the students think E-learning is useful. Some of the advantages that the adoption of E-learning in POLINES, obtained from students includes the following:

1. The first time 83% of students think that E-learning is so complicated because they never use it before, but after some use, they believe using E-learning is helpful. For example, they can upload the assignment in E-learning, so they don't need to print it out.

2. E-learning enhances the efficacy of knowledge and qualifications via ease of access to a massive amount of information.

3. Furthermore, the students can directly download the material from E-learning everywhere and every time, so when they need to study the material again, they can quickly get it.

4. 75% (9 Students) feel that using E-learning can directly know the score when assignment. Because the student thinks it can be more excited when the score instantly shows.

5. 8 students said that using E-learning can be more productive in the class because students were asked to study first at home before they go to class. In class, students discuss cases that have been given to the teacher so that the learning process in class is more interactive and students understand better the material presented. The students do not feel boring like when teachers all the time explaining the material.

Therefore, it can be concluded that students prefer to combine face-to-face directly with E-learning because it helps students to understand the lessons and collect the homework for the lecture and make the condition in the class more fun.

E-learning, in spite of the advantages that it has when adopted in education, also has some disadvantages. The disadvantages of e-learning that have been given by interview include the following:

1. Some students said that the interface of the E-learning looked less interesting, compared with another platform like "Edmodo" or "google classroom".

2. View menu log in E-learning there is only options login as a user and log in as a guest without the feature register new account and password forgot feature.

3. To enter an e-learning account must use an account that has been created by the institution or can use the login as a guest feature, but this system still has many weaknesses such as passwords are created equal, log in as a guest who must have an account like user

4. Most students think that Internet connection is a big problem when accessing E-learning. Internet connection on campus sometimes not working so student need to use their own connection. In case, when the teacher does some final exam using E-learning the students need to find the Wi-Fi in order to finish the exam, even the internet connection of students runs out of quota while doing an exam. If a student has a problem when doing the final exam using E-learning, the system will restart from the beginning. So it makes students felt annoying.

5. Another problem is about battery laptop because in POLINES not all class has a computer. So, the students need to bring their own laptops. It will become trouble when the teacher uses E-learning in the last class so students don't have enough power to turn on the laptop.

6. If a student cannot use the laptop then they use their mobile phone. But the E-learning system is not suitable for the mobile phone version. So, the students need more time in order to access the E-learning.

### 4.2 Challenges of E-Learning

E-learning, despite the advantages that it has when adopted in education, also has some disadvantages. The disadvantages of e-learning that have been given by interview include the following:

1. Some students said that the interface of the E-learning looked less interesting, compared with another platform like "Edmodo" or "google classroom".

2. View menu log in E-learning there is only options login as a user and log in as a guest without the feature register new account and password forgot feature.

3. To enter an e-learning account must use an account that has been created by the institution or can use the login as a guest feature, but this system still has many weaknesses such as passwords are created equal, log in as a guest who must have an account like user

4. Most students think that Internet connection is a big problem when accessing E-learning. Internet connection on campus sometimes is not working so students need to use their connection. In case, when the teacher does some final exam using E-learning the students need to find the Wi-Fi in order to finish the exam, even the internet connection of students runs out of quota while doing an exam. If a student has a problem when doing the final exam using E-learning, the system will restart from the beginning. So, it makes the student felt annoying.

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## 5. CONCLUSION AND FURTHER WORK

Implementation of E-Learning can be crucial for the university, including the Politeknik Negeri Semarang, to provide value-added services in the learning process. However, to implement E-Learning properly, it needs to be measured to obtain more advantages for students.

In conclusion, the advantages of E-learning are: the students think that E-learning is very convenient because they can reduce print work, get the material easily, get a real-time score after examination, have a more interactive class.

On the other hand, the challenges of E-learning such as the main problem of E-learning is about technology, the student sometimes need to bring their own connection in order to do exercise in the class, the template of E-learning is not interactive, demanding to be accessed when using a mobile phone.

In the future, based on the recommendation from both participants, we think that the E-learning system, especially in Politeknik Negeri Semarang needs to upgrade the system so that it can be faster and more stable when accessed by students. E-learning in the mobile phone version can be more confident in the future because nowadays almost all students have high technology in the mobile phone.

Due to restraints and limitations in presenting education to students, education through E-learning had become trends in education institutions whereby the institution is lacking professional skills and learning equipment.

There are several limitations of this research, including: First, the small and limited sample size, Second, the lack of evaluating the impact of E-learning for students

We plan to extend this research with more participants further and do some questionnaires in order to know the related E-learning in student activity in the class.

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## REFERENCES

- [1] Pham, Q. T., & Huynh, M. C. (2017). Impact factor on learning achievement and knowledge transfer of students. 2017 International Conference on Computing Networking and Informatics (ICCNI). doi:10.1109/ICCNI.2017.8123796
- [2] Mahmud, M. A., Ali, A. B. M., Ahlan, A. R. B., Shah, A., & Seman, M. S. A. (2017, 23-25 Nov. 2017). E-learning in Iraqi universities: A review. Paper presented at the 2017 International Conference on Computing, Engineering, and Design (ICCED).
- [3] Keong, W. E. Y. (2017). Importance-Performance Analysis of e-Learning Technologies in Malaysian Higher Education. 24-28. doi:10.1109/iset.2017.14
- [4] Castillo-Merino, D., & Serradell-López, E. (2014). An analysis of the determinants of students' performance in e-learning. *Computers in Human Behavior*, 30, 476-484.
- [5] Frimpon, M. F. (2012). A Re-Structuring of the Critical Success Factors for E-Learning Deployment. *American International Journal of Contemporary Research*, 2(3).
- [6] LLC, E. (2014). E-LEARNING CONCEPTS, TRENDS, APPLICATIONS. In.
- [7] Tavangarian, D., E Leypold, M., Nölting, K., Röser, M., & Voigt, D. (2004). *Is e-Learning the solution for individual learning (Vol. 2)*.
- [8] Baomin Qi, L. L., Chengbo Wang. (2009). E-learning Tools to Improve Students' Learning Experience a case study. *International Journal of Modern Education and Computer Science (IJMECS)*, 1(1), 1-9.
- [9] Asalla, L. K., Putri, M. R., & Pradipto, Y. D. (2017, 15-17 Nov. 2017). The critical success factor of E-learning in higher education: A systematic literature review. Paper presented at the 2017 International Conference on Information Management and Technology (ICIMTech).
- [10] Arkorful, V., & Abaidoo, N. (2015). The role of e-learning, advantages and disadvantages of its adoption in higher education. *International Journal of Instructional Technology and Distance Learning*, 12(1), 29-42.
- [11] Yassine, S., Khalifa, M., & Franck, P. (2017). Towards a Multidimensional Model to Study a Critical Success Factors Affecting Continuity and

- Success in E-Learning Systems. 10th International Conference on Developments in eSystems Engineering, 129-134. doi:10.1109/DeSE.2017.26
- [12] Selim, H. M. (2007). Critical success factors for e-learning acceptance: Confirmatory factor models. *Computers & Education*, 49(2), 396-413.
- [13] Govindasamy, T. (2001). Successful implementation of e-Learning: Pedagogical considerations. *The Internet and Higher Education*, 4(3), 287-299.
- [14] Volery, T., & Lord, D. (2000). Critical success factors in online education (Vol. 14).
- [15] Chourishi, D., Chanchal, D., Buttan, K., Chaurasia, A., & Soni, A. (2012). Effective E-Learning through Moodle.
- [16] Casadei, V., Zaina, L., Pinheiro, E., & Granollers, T. (2016). Accessibility Evaluation of Design Patterns on Moodle Mobile. Paper presented at the Anais do XXVII Simpósio Brasileiro de Informática na Educação (SBIE 2016).
- [17] Blandford, A. (2013). Semi-structured qualitative studies. In: *Interaction Design Foundation*.
- [18] Keis, O., Grab, C., Schneider, A., & Ochsner, W. (2017). Online or face-to-face instruction? A qualitative study on the electrocardiogram course at the University of Ulm to examine why students choose a particular format. *BMC Med Educ*, 17(1), 194. doi:10.1186/s12909-017-1053-6