

Validation of Lecturer Competency Model on E-Learning in Medan State University

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Abstract

The policy of maintaining physical distance during the Pandemic made every lecturer to conduct e-learning so that learning continued. This certainly forces lecturers to improve their competence. To determine the success of this learning system, an evaluation of the process and competence of lecturers in implementing e-learning is carried out. This study aims to determine the profile of the implementation of e-learning in the Faculty of Education during the Pandemic and to validate the competency model framework of lecturers in managing e-learning. Validation of this competency model is carried out using the Delphi method. The instrument used was a questionnaire containing a list of competency indicators that included planning and preparation, learning environment, instruction in learning, professional responsibility. The research panelists were 5 experts in the development of e-learning based on their experiences, research and scientific publications, 10 lecturers who used to organize e-learning, and 15 students who did e-learning. Panelists are asked to provide an assessment of the list of competencies provided. This research was conducted in three Delphi rounds. The first round produced 100 competency indicators with an 82% approval rate. In the second round, the competent indicator changed to 68 indicators with an approval rate of 90%. In the final round, this study succeeded in validating 40 models of lecturer competence in conducting e-learning. All of the competency models were approved by all panelists with an approval rate reaching 100%. The implementation of e-learning does not only focus on placing students at the center of the learning process but must still focus on learning objectives. The application of this competency model needs to consider several things related to the following matters. As for what needs to be considered is the readiness of the lecturers themselves in conducting e-learning which is marked by their competencies, as well as the availability of other supporting devices.

Keywords

competency; lecturer; e-learning; student; education; science; learning approaches



I. Introduction

Due to the increasingly widespread of the Covid19 outbreak, the Indonesian government has adopted policies regarding physical distance. The Minister of Education and Culture of the Republic of Indonesia, Nadiem Anwar Makarim, also issued several policies to regulate learning activities during this pandemic.

Medan State University as one of the educational institutions under the auspices of the Ministry of Education and Culture, has also made a similar policy regarding the teaching and learning process of lecturers and students so that the implementation of

learning activities is carried out from home and relies on internet networks and application applications that support learning activities. This policy changes the way students learn and teach lecturers. During this time it was held in classrooms on campus, changing into a study from home policy. This has certainly greatly changed the study habits, learning behavior and teaching methods of lecturers.

One learning model that can accommodate learning from home is e-learning. E-learning is a distance learning process that combines principles in the learning process and technology (Chandrawati, 2010). This learning system can be implemented without having to meet face to face (Ardiansyah, 2013).

In the implementation process, learning from home is expected not only to be done, but also to be able to maintain or perhaps improve the quality of the learning itself. A lecturer has an obligation to produce graduates who are critical, intelligent, open, productive and have noble character as mandated by various demands of stakeholders. Therefore competence is a must. If you want to improve the quality of learning, it should be marked by an increase in learning outcomes. (Nature, 2017). However, in an effort to increase the acquisition of this learning ability, Abbasi and Mir (2012) state that this is strongly supported by the qualifications and teaching styles of the lecturers. Ganyaupfu, (2013) argues that one of the important factors in the learning system itself is the competence of lecturers in carrying out the learning they design.

Competence is a set of knowledge, skills and behaviors that a person must possess and master in performing his professional duties. Lecturers in this case must have a set of knowledge, skills and behavior in carrying out their duties as educators, teachers, mentors and directors. Danim (2008; in Murti and Prasetyo 2018).

In the implementation of e-learning, each lecturer has a different philosophical and operational perspective in its implementation. This philosophical perspective appears in the form of normative assumptions, principles, values and beliefs that form the basis for determining learning objectives, pedagogical orientation, views of students and what should be taught (Starratt, 1994). Meanwhile, the operational perspective appears in the level of ability to master and use technology which is the basis for determining the application used in the teaching process starting from the preparation and presentation of teaching materials to its evaluation. The difference between the philosophical and practical perspectives of the lecturers has a big impact on this e-learning process.

The declaration of e-learning at Medan State University may still cause debate among lecturers at the philosophical and operational levels. Therefore, exploration and validation in the implementation of learning is needed to minimize these differences. Edwards (2012: 2) says that e-learning that is implemented properly will create a more motivating learning environment because students can access learning according to their individual needs, and remain sustainable. However, this learning also has drawbacks, especially if it is done incorrectly, namely: the values formed in this learning process will be formed very slowly due to the lack of interaction between lecturers and students or even between students themselves, the tendency to ignore academic or social aspects and vice versa encourage the growth of business / commercial aspects, the learning and teaching process tends towards training rather than education, the change in the role of lecturers from being educators to merely teaching or tutors, students who do not have high learning motivation will tend to fail, and not all lecturers master technology well, so that in the end, only rely on simple applications that do not optimally support the learning process, as well as a lack of knowledge of coding languages.

II. Review of Literatures

According to Rusman, (2012, p. 317), explains e-learning philosophically as follows: First, e-learning is the delivery of information, communication, education, online training. Second, e-learning provides a set of tools that can enrich the value of conventional learning (conventional learning models, studies of textbooks, CD-ROMs, and computer-based training) so as to answer the challenges of globalization. Third, e-learning does not mean replacing conventional learning models in the classroom, but strengthening the learning model through content enrichment and the development of educational technology. Fourth, ability of students varies greatly depending on the form of content and the way it is delivered. The better the alignment between content and delivery tools with learning styles, the better the capacity of students which finally will give good results. In practice, in theory this learning includes training, education, learning and knowledge, application of technology and research on user segments (Bowles, 2004: 3).

E-learning allows students to access accurate and up-to-date information without the barriers of space and time. Ease of accessing E-learning allows students to learn from anywhere and anytime as long as they have an adequate internet connection. The conclusions are: (1) Students can easily take courses anywhere without being limited to institutional and country boundaries; (2) Students can easily learn and discuss with experts or experts in the fields of interest; (3) Lecture materials can even be easily taken in various parts of the world without depending on the college where students study (Mutia and Leonard, 2013). E-learning has changed the paradigm of teacher-centered learning to student-centered learning. Learning is no longer dependent on the teacher because the teacher is no longer the only source of knowledge for students. E-learning allows students to access accurate and up-to-date information without the barriers of space and time. The ease of accessing E-learning allows students to learn from anywhere and anytime as long as they have an adequate internet connection. E-Learning based learning can have a new impact or atmosphere which usually only takes place face to face (Situmorang, 2019). By developing online-based teaching materials, it is expected that the quality of students (Siregar, 2020). It can be said simply that all learning is done by utilizing internet technology and as long as the learning process is felt to occur by those who follow it, then the activity can be referred to as webbased learning (Syakur, 2020).

While the components of E-learning according to Gottschalk (1995), consist of: 1) Learners. Find the needs of students is the basis of any effective e-learning. When instruction is delivered remotely, new challenges will arise as learners are separated from one another with different backgrounds. 2) Instructor. The success of E-learning depends on this component. The role of the instructor in E-learning is: a) understanding the characteristics and needs of students without direct contact, b) applying teaching methods that are in accordance with learning expectations, c) developing delivery technologies, while still focusing on their role as teachers, and d) functioning effectively. effectively as a skilled facilitator. 3) Facilitator. A facilitator must understand the needs of the learner and the expectations of the instructor. Most importantly, the facilitator must be willing to follow the teacher's directions. A facilitator who provides equipment, collects assignments, oversees exams, and acts as the instructor's senses. 4) Support staff. Support staff ensure that the details necessary for the program's success are used effectively. Most successful E-learning programs use support staff to take care of study registration, duplication of material distribution, textbook ordering, facility scheduling, grade processing, and more. 5) Administrators. Administrators function as agreement makers, decision makers and mediators. They ensure technology resources are used effectively to further the institution's academic mission and keep academic focus on track.

In addition to the above components, e-learning must have the following elements:

- 1) Student activity centered; as a community website based distance learning, it must be able to make this facility a place for student activities, where students can increase their abilities, read lecture material, find information and so on.
- 2) Interaction in groups; students can interact with each other to discuss the materials given by the lecturer. Lecturers can be present in this group to provide a little review of the material they provided.
- 3) Student administration system; where students can see information about student status, student achievements and so on.
- 4) deepening of materials and exams; Usually, lecturers often hold short quizzes and assignments aimed at deepening what has been taught and conducting tests at the end of the study period. This must also be anticipated by a website based distance learning.
- 5) Digital library; In this section, there is a variety of library information, not limited to books but also digital libraries such as sounds, images and so on. This section is as a support and in the form of a database.
- 6) Online materials outside of lectures; To support lectures, reading materials from other websites are also needed. Therefore, in this section, lecturers and students can be directly involved in providing other materials to be published to other students through the website (Wahono, in Mutia and Leonard, 2013).

According to Government Regulation No. 19 of 2005 concerning National Education Standards and Law No. 14 of 2005 concerning Teachers and Lecturers, the ability of lecturers includes:

- (1) Pedagogic ability is the ability to manage student learning which includes the ability to design, manage, and assess learning: (a) able to understand the characteristics of students, (2) apply learning theories, learning theories that are relevant to students and in accordance with the characteristics of the subjects they have (2) Able to manage learning in accordance with the characteristics of students; (a) able to design interactive learning, (b) inspiring, fun, challenging, motivating, students to participate actively, and provide sufficient space for initiative, creativity, and independence in accordance with the talents, interests and physical and psychological development of students.
- (3) Personality ability is a personality that is steady, stable, mature, wise, and wise, authoritative, being a role model for students, having noble character, evaluating one's own performance, developing oneself in a sustainable manner; (a) able to act consistently in accordance with the norms of religion, law, social and national culture of Indonesia (b) able to present oneself as a person who is steady, stable, mature wise, authoritative, and has a noble character.
- (4) Have a sense of pride in being a lecturer, able to work independently, have a work ethic, self-confidence, and high responsibility.
- (5) Social Ability, is a lecturer's ability which includes the ability to: (a) communicate orally, in writing or sign (b) use communication and information technology functionally (c) interact effectively with students, fellow educators, education staff, people parents / guardians of students and get along politely with the surrounding community.
- (6) Professional abilities include: (a) broad and in-depth mastery of learning materials (b) ability to design, implement, and compile research reports, (c) ability to develop and disseminate innovations in the fields of science, technology and/or art; and (d) the ability to design, implement and evaluate community service.

III. Research Methods

This research is problem solving which aims to validate the competence of lecturers in implementing e-learning based on literature studies and the criteria for lecturer competence. Therefore, the descriptive method was applied. The purpose of this study was to develop a lecturer competency model in carrying out e-learning, and then validation by e-learning experts to obtain agreement on the competency model that was designed by

researchers, so the approach of this research is to apply the Delphi method (Delphi method). Linstone and Turoff (1975; in Adiyatma Rum & Heliati, 2018) state that the Delphi method can be applied to the education sector on the topics of planning curriculum for lectures, compiling educational models, and managing human resources.

The research was conducted at the Faculty of Education Medan State University in 2020. The subjects of this study were selected using a purposive sampling technique, adjusted to the inclusion criteria. The criteria for selecting participants used were (a) 5 expert lecturers on e-learning, selected based on research and scientific work produced, experience in administering e-learning-based classes; (b) 10 FIP lecturers are selected based on their level of experience in holding e-learning classes; and (c) 15 students were selected based on their experience in taking e-learning-based classes.

Data collection in this study was carried out with a questionnaire as the instrument. In the questionnaire, the researcher presents a series of statements, in which the panel is asked to clearly assess whether the statement is important in the formulation of lecturer competence in e-learning. The contents of the statement in the form of a lecturer competency framework and its indicators in e-learning are derived from the literature and findings of previous research, such as the Republic of Indonesia Government Regulation No. 14 of 2005 concerning Teachers and Lecturers, Teacher Education Based on the Competency Approach by Oemar Hamalik, Teacher Professionalization and Implementation of Competency-Based Curriculum by Yamin Martinis, Interaction and Teaching Learning Motivation by Sardiman, Learning Achievement and Teacher Competence by Syaiful Bahri Djamarah and other sources based on research needs.

In the first Delphi round, questionnaires were distributed to the Delphi panel to determine the competency framework for lecturers in e-learning. The panel was asked to check the list of competency frameworks deemed important and add components and competency indicators that were not listed in the list. After all the questionnaires in the first round are returned, the researcher summarizes what competency frameworks are important to be included in the next Delphi round. The competency framework enters Delphi in the second round if there are at least seven panels stating that the item is important and also if a new competency framework is added by the panel in the first round.

In the second round of Delphi, the panel was asked to give an assessment based on a 1-4 Likkert scale depending on how important the competency components can be used by lecturers in e-learning. The greater the value, the more important the competence is likewise in the third round.

IV. Discussion

The implementation of e learning has been going well, but student satisfaction is still low. Based on the three aspects of e-learning that were asked of students, namely the readiness of human resources and technology, the e-learning learning process and assignments and evaluation of learning outcomes, it was found that the lowest student satisfaction was in the readiness of human resources and technology. Next is the aspect of assignment and evaluating learning outcomes. Meanwhile, the aspects of the e-learning process were considered the most satisfying by students compared to the other two aspects.

From the list of competency indicators given to the panelists, the researcher only chooses the indicators that have the highest relevance to e-learning. The cut-off point selected is the average item relevance score above 4.5. Of the 82 competency items provided, based on the criteria, 18 items of competency were added. Several components assessed by the panel need to be added to achieve e-learning success by the lecturers. From the list of indicators selected the researcher gave the panel the opportunity to enter

feedback, panel members selected the item option that best represented their recommendation.

Delphi in the first round was conducted with 30 panelists, which indicated that there was no agreement between the panelists. During the first round, the panel agreement only reached an overall acceptance rate of 82%. However, panel members still provided suggestions for changes and additions to the competency indicators. This procedure was carried out for three rounds until it resulted in an agreement between panelists of 100 percent and the number of competency items agreed upon to be 40.

Table 1. Statistic Table

Statistic	Explo ration	Delphi Round		
		1	2	3
Indicators	82	100	68	40
Panelists	30	30	30	30
Agreement	100%	82 %	90 %	100%

The following are the competency indicators approved by all panelists. List of Competency Indicators Approved by Panelists

1. Master the use of IT in online learning
2. Understand the virtual world
3. Plan communication tools
4. Mastering aspects of online communication
5. Showing professionalism as a lecturer
6. Able to design activities in accordance with the learning output
7. Able to build student independence in learning
8. Actively conducting scientific development research
9. Able to build student independence in learning
10. Able to take advantage of open learning resources found on the Internet
11. Use supporting media in the form of text, audio, visual, video
12. Have a structured teaching program in online learning
13. Master a variety of online learning strategies
14. Has an online lecture format
15. Have the motivation to conduct learning
16. Develop an online teaching philosophy
17. Formulate clear procedures regarding the ethics of communicating in the network
18. Build good relationships with students
19. Personalized education to reduce transactional distance
20. Applying learning theory to the online environment
21. Translate real world concepts to virtual worlds
22. Discussion-based teaching
23. Have awareness of student needs and differences in ability
24. Responsive to feedback

25. Listen and care online
26. Able to manage learning problems that arise
27. Have a strategy for managing ethical issues
28. Avoid feeling overwhelmed
29. Develop cognitive presence through active learning strategies
30. Able to encourage students to actively express their opinions
31. Conduct online tests and assessments
32. Interactive examination and assignment system
33. Reflect on problems encountered during learning
34. Able to develop an accurate assessment
35. Able to ask questions that stimulate critical thinking
36. Able to determine operational or measurable learning outputs
37. Capable of designing assessment targets that are appropriate to the learning output
38. Provides assessment guidelines
39. Provide an assessment of the work of groups and individuals, quality of responses during discussion, synchronous online conversations, multiple choice
40. Make reports on student learning progress

The findings of this study indicate that in the implementation of e-learning whoever the implementer should have the competence to do so. In general, the forty competencies that have been previously mentioned consist of three aspects namely human resources and technology readiness, online learning process and assignment and evaluation of learning outcomes. This competency is expected to be possessed by lecturers so that learning runs well and learning objectives are achieved optimally

V. Conclusion

The application of e-learning in educational institutions should not only focus on placing students at the center of the learning process or even as objects that are taught, but also must remain focused on the learning objectives and competencies to be achieved. The application of the e-learning competency model needs to consider that not all lecturers are enthusiastic about using technology as the main tool in conducting learning. This is indicated by the emergence of an indication that not all lecturers feel it is important to increase their knowledge in the use of computer devices and e-learning features. In addition, not many lecturers have succeeded in developing e-learning teaching strategies that can increase students' interest in learning. Most of the lecturers believed that e-learning was only effective in increasing students' understanding, but not attitudes or behavior.

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