

# **E-Learning Management on Learning Outcomes at Universities in Indonesia**

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## **Abstract**

COVID-19 has changed the normal role of education from conventional to e-learning around the world. Therefore, this study aims to analyze online policies and learning outcomes in the learning management system (LMS). A total of 308 students from the Faculty of Tarbiyah and Teacher Training at IAIN Ponorogo, UIN Surakarta, UIN Malang, and UIN Samarinda in Indonesia were selected as the participants. Data were collected from February to May 2022 using interviews with the Quality Assurance Institute (QAI). The results showed that the e-learning policy has met the students' needs because it is independent. Furthermore, it indicated educational outcomes were obtained from the quality and the implementation of the Semester Lesson Plan (RPS). More than 52% of the respondents provide a good response to learning experiences, final abilities, methods, and references. Furthermore e-learning makes students active, independent, responsible, and have critical thinking. Also, it enables undergraduates to achieve educational, collaborative, and contextual goals, as well as provide them the discussion skills. In Indonesia, e-learning failed to promote maximum cultural change because it is more individualistic even though the country has a collectivistic character.

**Keywords:** Management, e-learning; RPS, learning outcome, higher education

## **Introduction**

Historically, online learning known as e-learning was initiated in the 1950s but later developed in 1980 (Ravenscroft, 2001, Almarzooqooqooq et al., 2020). In Indonesia, Joko Widodo's government 2020 issued policies on working from home that make schools start using e-learning during COVID-19. This condition forces universities to indirectly perform a massive digital change in the country (Zamora-Antuñano et al., 2021). Furthermore, the Institut Agama Islam Negeri (IAIN) Ponorogo established online learning by selecting four platforms including Google Classroom, WhatsApp Group, Zoom, and Google Meet. This is in line with the response of other universities such as Universitas Islam Negeri (UIN) Surakarta, UIN Malang, and UIN Samarinda. The adoption of this online policy becomes the best experience for countries that are reforming their educational process (Tolsteneva et al., 2020). According to Suartama et al. (2020), this policy is used as a supplement, or substitute for learning activities in the classroom.

The analysis of the Quality Assurance Institute showed that online education failed to optimally run because of (1) technology disparities between students living in urban and rural areas, (2) limited ability of lecturers and undergraduates to use IT, (3) limited internet access, and (4) integrated relations between students and lecturers. According to an EI interview on March 3, 2021, these obstacles cause educational goals to be less than 70% in the country. Ameli et al. (2020) and Al Mawangir & Puspita (2021a) explained that the learning management system (LMS) including the implementation planning, methods, and evaluation causes e-learning to be difficult to realize because they are not well-systematized.

The above results indicated that policies are needed to prevent the educational goals from being disrupted in the Semester Learning Plan (*RPS*). Therefore, students need to access learning activities than playing games, chatting, and listening to music. *The study by Hidayat et al. (2017) reminded university leaders to develop an LMS with different features to enable students to become independent, creative, responsible, problem-solving, foster collaboration, and synergy, as well as avoid recreational activities.*

Pragmatically, e-learning completely replaces face-to-face learning in the whole world during COVID-19. Albertson (1980) used the expression of Short, William, and Christie in the book entitled "*The Social Psychology of Telecommunications*" to explain that online learning is less personal and more oriented to the tutor. This shows e-learning has limited channels that hinder social cues not to be conveyed to students. According to Walther (1995), offline and online education are not the same because they use different times in conveying information. Also, Suartama et al., (2020) indicated that e-learning becomes effective in achieving the targeted competencies.

According to Barber (2020), the students' success and satisfaction are influenced by environmental factors, motivations, strategies, methods, and the lecturers' facilitation. However, the effectiveness of online learning is highlighted through excellence, perfection or consistency, fit for purpose, collaboration, and transformation (Ajmera, 2014). Cheung, L.L.W. and Kan, A.C.N. (2002) emphasized that the independent use of tutorials is one of the factors affecting students' achievement in school. The study by Gamage et al. (2014) indicated the factors affecting the effectiveness of e-learning include interaction, collaboration, motivation, networking, and pedagogy. Meanwhile, this success is based on the relevance, attractiveness, and productivity of online education (Aslami, 2020).

Several studies focus on the success of e-learning by considering the cognitive, psychomotor, and affective aspects. Online education only helps to achieve cognitive goals but is not effective for others (Prawiradilaga, 2016). Further studies need to consider the university's policies to achieve educational goals in the Semester Lesson Plan. However, learning objectives including knowledge, skills, and attitudes are the same in both online and face-to-face schemes. These three objectives need to be achieved in a balanced way to form character with any educational model. Therefore, this study develops online learning that does not only function as a supplement but also as a

complement and substitution. This is because it tends to promote cultural changes that place e-learning as the main communication medium during COVID-19 (Williams et al., 2012).

### **Review of Literature**

The millennial era increases the learning resources and media such as e-books, e-learning, e-libraries, e-forums, and e-journals (Astuti & Febrian, 2019). According to Mtebe (2015), education was performed conventionally but later change into Learning Management System (LMS) during the pandemic. Historically, the emergence of an LMS with an open-source concept called Moodle began in 2002. This show that it is necessary to use a model that combines online with face-to-face learning (blending) in an integrated and regular manner to make the learning process meaningful (Huda et al., 2019). Furthermore, e-learning is combined with the conventional method to train Indonesian students to be more independent (Nastiti & Ni'mal'Abdu, 2020).

According to Matthew Comer Hero, online education is a media that increase motivation, communication, and efficiency while it is adequately developed in an LMS (Mtebe, 2015). Sadikin & Hamidah, and Luh Sri Damayanti (2020) emphasized that e-learning uses computer technology and internet networks as a method of delivering material, interaction, and acquiring facilities to support different communication services. This type of education is the change from conventional to the online form in terms of materials, methods, and systems. According to Horton (2011), e-learning is the use of communication and information technology (IT) to create experiences. Therefore, online learning help to provide knowledge and understanding covering different things because students not only listen to material descriptions but also need to actively observe, perform, and demonstrate them.

In the industrialization era 4.0, learning requires IT tools to form a creative, innovative, and competitive generation, as well as several predetermined experiences. Kitao (1998) explained that the use of information technology needs to be performed to produce outputs that are in line with global developments characterized by speed, network, and efficiency.

The achievement targets are cognitive, psychomotor, and affective because LMS help in designing learning experiences which are the activities that students need to perform for one semester. Each of these activities is provided through a conducive academic atmosphere created by lecturers to assist undergraduates in achieving

educational goals. *In* the Indonesian Qualification Framework (IQF), competencies are formulated with “learning outcomes” (LO) (Prasetyo et al., 2019; Frisnoiry et al., 2019). These educational goals are performances derived from Graduate Learning Outcomes (GLO) (Chan et al., 2021). LO has four elements including attitudes and values, workability, scientific mastery, as well as authority and responsibility that are needed to obtain satisfactory results (Reksiana et al., 2020).

Generally, the measurement of effective learning outcomes is indicated through success, target, and program satisfaction, as well as the input and output level (Mudamayanti & Wiryanto, 2020). This shows the ability to realize several conformities including (1) tasks and functions, (2) plans and programs, (3) rules and regulations, and (4) objectives (ZR & Saugi, 2020; Saputra et al., 2021).

## Research Method

This study is quantitative in nature because it uses a survey method conducted online (Sugiyono, 2010: 50). Data were obtained from the e-learning platform for the achievement of student competencies. A total of 308 undergraduates from four Islamic universities were selected as the participants. The students selected from the IAIN Ponorogo, UIN Samarinda, UIN Surakarta, and UIN Malang are 156 or 48.7%, 85 or 27.6%, 22 or 7.1%, and 51 or 16.6% respectively.

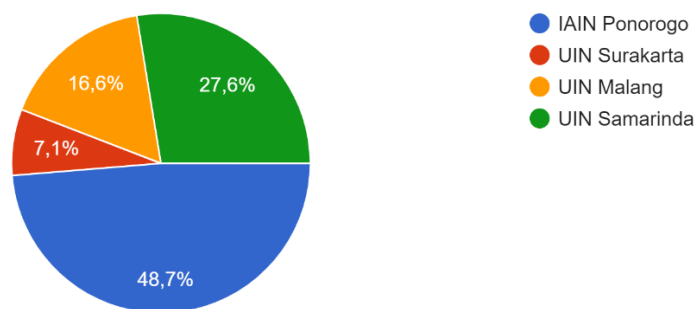


Figure 1. Number and Distribution of Respondents

This study was designed multi-side with the results of online surveys at four universities including IAIN Ponorogo, UIN Surakarta, UIN Malang, and UIN Samarinda during COVID-19. These four Islamic state universities were selected because they use the same monitoring and evaluation instruments to determine the success of learning through the online platform. Data were analyzed using the Solvin formula and the purposive sampling method (Consuelo, 2007). This is because the data become homogeneous by using the e-learning platform developed in the LMS. In this study, each

individual or certain group has the same possibility of being selected as the participants (Creswell, 2016). According to Kerlinger (2014), the majority of the population was not the school's representative because all students have an equal chance of being selected in the online learning survey.

The steps used in this study began with the development of instruments including implementation and data collection. These instruments were created by conducting an extensive literature review, content validation, and process construction in consultation with experts. Meanwhile, the implementation aspect includes the consideration of universities' policies to develop e-learning in LMS. The data instrument was based on competency achievements obtained from student responses between February to May 2022 using an online survey supported by GoogleForm with the following criteria that include 5 = excellent, 4 = good, 3 = fair, 2 = bad, and 1 = very bad. Furthermore, the survey method was used to examine the problems that are trending worldwide toward the implementation of certain policies involving online learning during the pandemic (Creswell, 2015).

## **Findings and Discussion**

### **Online Learning Policy**

From 2020 to 2022, IAIN Ponorogo, UIN Samarinda, UIN Malang, and UIN Surakarta follow the Work From Home (WFH) policy of President Joko Widodo's government by ensuring lectures are fully conducted online. Therefore, university policies that restrict students from involving in offline education were issued to prevent COVID-19 in Indonesia.

This policy was based on several considerations including needs, instructional design, the development of ICT facilities, the use of a complete prototype, and evaluation. (1) The schools consider needs because e-learning enables students to learn independently. This shows all internet users on campus have to only search for content that suits undergraduates' needs. (2) According to the MM interview on March 18, 2022, the instructional design involves the course content and learning unit, learner, context, analysis, and state objectives, as well as strategy. (3) The IAIN Ponorogo, UIN Samarinda, UIN Malang, and UIN Surakarta developed online education through ICT facilities. (4) A complete prototype is transferred to a computer (LAN) using a format such as HTML format. The interview of KH S on March 17, 2022, shows different

obstacles in the implementation of this prototype using the management course tool properly. (5) Furthermore, the schools ensure lecturers and students participated in the evaluation before the policy was issued.

### Lecturer Learning Media

The following figure shows that this study uses several media.

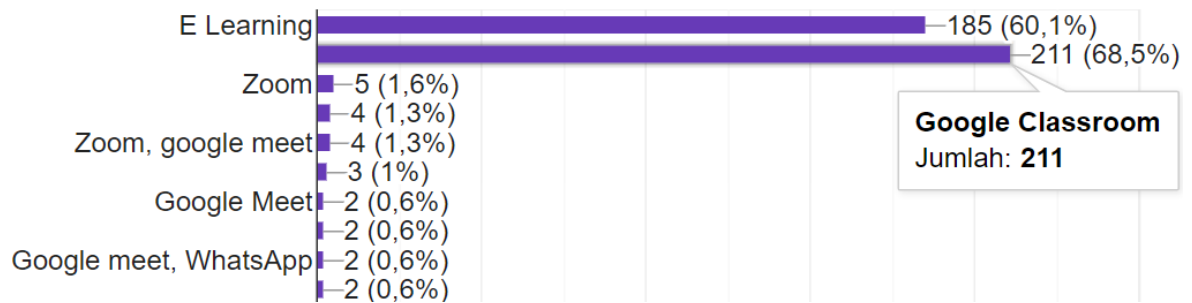


Figure 2. Lecturer Learning Media

Figure 2 shows that the media used by lecturers are Google Classroom, e-learning, and Google and Zoom Meeting at 68.5%, 60.1%, and 2.9% respectively. This indicated the media is a mixture of synchronous and asynchronous. According to an AR interview on April 17, 2022, e-learning not only reduce student boredom but is also used as a supplement, complement, and substitution.

Contrary to early 2020, there are 23 online media used in the educational process at IAIN Ponorogo. The use of WhatsApp Group, Google Classroom, and email was at 58.5%, 57%, and 22% respectively. Students and lecturers prefer the WhatsApp Group because they have been using it in the communication process before the pandemic. Meanwhile, people don't prefer using the media for lectures because universities are yet to develop a standard LMS (Mukhibat & Wilujeng, 2021). The same result was shown at UIN Samarinda where the use of WhatsApp Group, Google Classroom, and Zoom was at 57%, 21%, and 19% respectively (Al Mawangir & Puspita, 2021b).

Google Classroom is a multiplatform designed to simplify the creation and distribution of work, as well as assignments. According to Google for Education (2021), this application has multiple layers of security that tend to be accessed in 99.9% uptime. The use of Google Classroom which received about 68.5% of responses indicates that it enables students to easily submit and store their work.

Furthermore, the use of e-learning which received about 60.1% of responses shows it is more beneficial to undergraduates. According to Arif in an SA interview on

April 25, 2022, this application is easy to access and it is more flexible in determining when to start and finish lectures. Online education has several limitations including students easily losing focus because they are not supervised, it tends to be monotonous, and discussion forums are less than optimal.

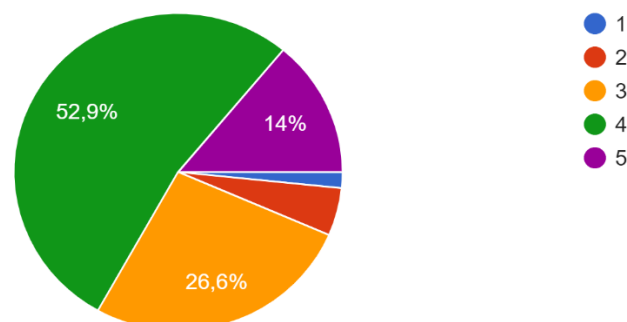
Based on the drawbacks above, most lecturers try to complement Google Classroom and e-learning with Zoom and Google Meet. The use of these new applications which received about 2.9% of responses shows that they improve students' ability to convey ideas. Also, Zoom and Google Meet allow lecturers to meet synchronously as a bridge between space and time. According to the ZA interview on April 15, 2022, these applications were selected because they provide automatic recording facilities which tend to be played back at any time during video conferencing. Istiqomah (2021) indicated that the Zoom Meeting is effective because it received about 70% responses. The study of Novita et al (2021) explained the use of Zoom and Google Meet are ineffective.

### **E-Learning Effectiveness on Learning Outcomes**

Generally, effectiveness is the success, target, and program satisfaction, as well as the level of input and output (ZR & Saugi, 2020; Saputra et al., 2021). The measurement of media on learning outcomes is classified into two categories including the implementation quality of the *RPS* and the effectiveness of e-learning.

### **Student Learning Experience**

COVID-19 attracts people's attention to study students' learning experiences in society (Baber, 2020). However, learning outcomes and undergraduate satisfaction were strongly influenced by the lecturers' ability in designing communication strategies, materials, and facilitation in RPS. The following are students' responses to the learning experience.





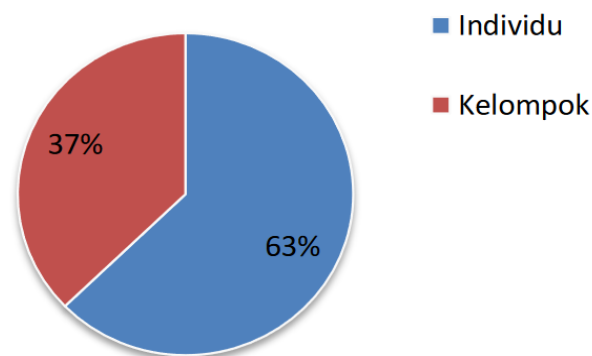
*Figure 3. Student Learning Experience*

Figure 3 shows that the learning experience embodied in the student assignments for one semester was good and very good at 52.9% and 14% respectively. Meanwhile, the experience at 26.6%, 4.3%, and 1.6% are moderate, less, and very poor. Lecturers' *RPS* serves as a guide for students to achieve predetermined learning outcomes. This shows that undergraduates still gave a positive response to the online learning process despite complaining that it is boring, enables an excessive number of assignments, and disallowed face-to-face meeting.

The above positive response was influenced by the lecturer's strategy in giving assignments to students. However, the task description in the *RPS* systematically organizes undergraduate learning experiences. Structured and measurable assignments reduce the negative effect of e-learning because lecturers tend not to supervise students all the time, specifically for those who use facilities outside the campus.

Telaumbanua (2020) suggested that the learning process is needed for the formation of associations (cognition) before entering the fixation and automation stages. At this cognition stage, students have an overview of the subject matter that helps in acquiring adequate information about their experiences and activities during one semester.

In terms of learning experiences, about 63% of students prefer individual assignments to groups. However, the majority of the undergraduates find it difficult to collaboratively work while studying from home during the pandemic. A total of 37% of respondents explained that group assignments were easier because they did them together.



*Figure 4. Students' Preferred Task Model*

### **Planned final capabilities to meet learning outcomes**

In this study, the curriculum used in the university environment contains plans and arrangements regarding learning outcomes, materials, processes, and assessments. The following is the student's response to fulfilling the learning outcomes contained in the *RPS*.

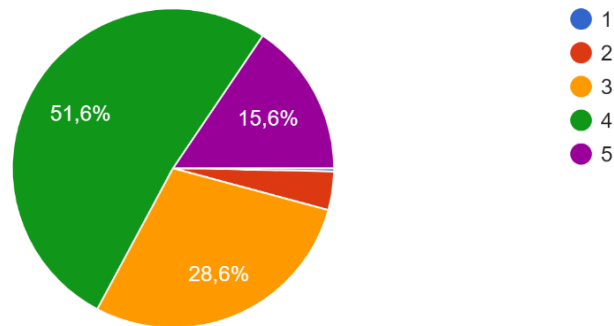


Figure 5. Planning for Learning Outcomes in *RPS*

Figure 5 above shows students' responses were very good, good, moderate, and poor at 15.6%, 51.6%, 28.6%, and 3.9% respectively. Meanwhile, the respondents failed to give a very poor answer to the final ability. The results showed that only 51.6% of the students understood the focus and formulation of learning outcomes, while about 3.9% of them failed to understand it. This indicates the lecturers' lesson plans have met the characteristics of focus and flexibility which means meeting the undergraduates' needs and learning styles. Furthermore, the *RPS* help students focus their attention on achieving certain or special learning outcomes and achievements. The majority of the benefits of an educational contract are not obtained because the undergraduates easily lose their way if there is no flexibility and focus.

### Learning Reference

The lecturer prepares the *RPS* by referring to the study program and graduates' outcomes, as well as the curriculum. Article 12 Paragraph (1) of the Regulation of the Minister of Research, Technology, and Higher Education No. 44 of 2015 specified that the learning process is based on the *RPS* prepared for each subject. According to Article 12 Paragraph (3), the *RPS* contains at least 8 aspects and one of them is a reference list that guides students not to be confused in finding reading sources. Figure 6 shows the respondents' answer to the list is in the good and very good category at 51.9% and 18.2% respectively. This response indicated that the reference list in the form of books, journals,

e-books, and e-journals enables students to be more active in digging up various information adding to their insight and intellectuality.

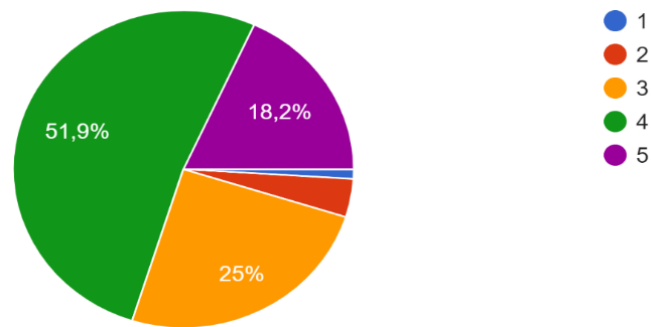


Figure 6. Learning Reference

### Students participate in learning actively, independently, and responsibly

Independence, activeness, and responsibilities are important elements and indicators of learning quality. Meanwhile, independence emphasizes undergraduate activities that are full of responsibility. The figure below shows the student responses to learning.

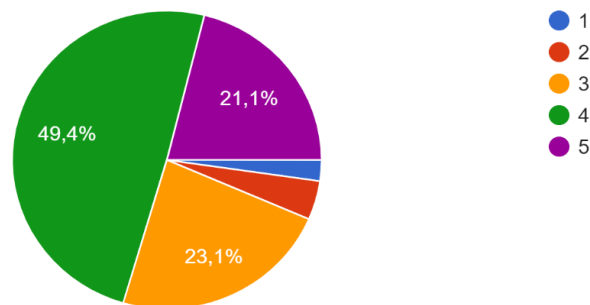


Figure 7. Active, Independent, and Responsible Learning

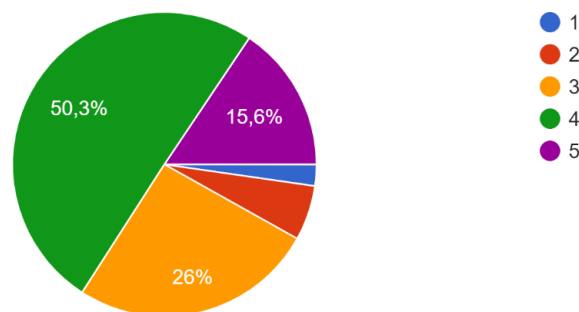
Figure 5 shows the students who answer e-learning tend to develop independence, responsibility, and activeness in a very good, good, and very bad category at 21.1%, 49.9%, and 2.3% respectively. Therefore, lecturers and universities need to consider the very bad response to evaluate the educational process. The participants' responses show that the majority of them failed to achieve active learning. Students only do the assignment by listening to the materials they were given before sending it to the lecturer. The results showed that only a few respondents tend to express opinions, refute questions or answers from friends, respect friends' opinions, and be polite in speaking. Moreover, the majority of the students only did other activities rather than asking questions related to their material.

Figure 7 shows that the Indonesian students learning motivation are more dependent on the teacher. Moreover, not all subject matter including material that requires practice and direct guidance from lecturers tends to be used with e-learning. In Indonesia, the adoption of online education still needs adjustment because independence is not fully formed in students. This condition showed that cultural change is yet to occur in e-learning (Prawiradilaga, 2016: 67).

### **Ability to improve group collaboration between students**

Collaboration skill is the ability to effectively work together and show respect for diverse teams, practice fluency, as well as make the decisions needed to achieve common goals (Scoular et al., 2020). The process of working on assignments and participating in presentations and discussions enables students to express their opinions and ideas to others. Therefore, lecturers need to consider various strategies in learning to improve the collaboration between undergraduates.

Figure 8 shows the students' answers on the lecturers' ability to increase cooperation are in good, very good, and moderate categories at 50.3%, 15.6%, and 20% respectively. This indicates that the implementation of *RPS* in learning helps to increase the collaboration between undergraduates.



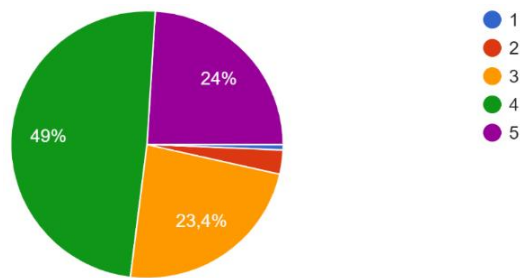
*Figure 8. Lecturer's Ability in Creating Collaboration*

The four 21st-century skills including critical thinking, creativity, communication, and collaboration help to develop education in society. Collaboration plays an important role in supporting the student while pursuing a career in social life.

### **Delivery of materials using contextual problems**

Competencies tend to increase by providing a real experience that enables students to come into direct contact with the substance they are learning. The figure below

shows the lecturers' ability in realizing undergraduates' skills to solve contextual problems.



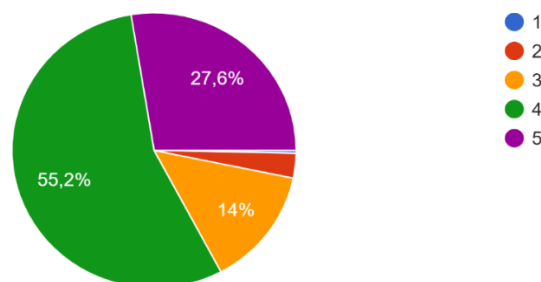
*Figure 9. Contextual Learning*

Figure 9 shows the educational materials are in very good, good, and moderate categories at 24%, 49%, and 23.4% respectively. This is because they help to develop undergraduates' abilities in solving real problems in society. The results support Kassen (2006) that contextual learning strengthens student knowledge in the real world. This condition emphasizes critical thinking, gathering, analyzing, and interpreting information from various sources and perspectives.

The education provided to the undergraduates enables them to believe this process is a direct experience. Students believe the relationship between learning experiences and real-life makes the materials become meaningful and deeply embedded in their memories.

### **Improving critical thinking skills during the learning process**

In the industrialization era, lecturers with strong core competencies, soft skills, critical thinking, creativity, communication, and collaboration are needed to make students ready to compete in society. The figure below shows the undergraduates' perceptions of e-learning to develop critical thinking skills.



*Figure 10. Lectures Improve Critical Thinking*

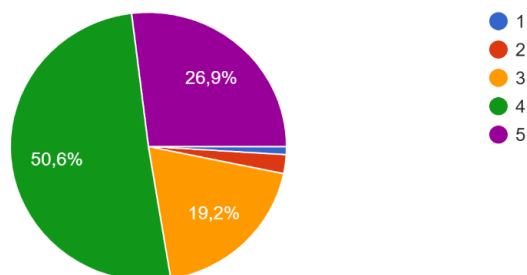
Figure 10 shows that the lectures attended by students help to develop their critical thinking skills (CTS). Also, figure 11 indicates the respondents' answers to the materials,

assignments, and quizzes are in the very good, good, and moderate categories at 27.6%, 56.2%, and 14% respectively. This shows that lecturers had good abilities in increasing students' critical thinking skills during COVID-19. Furthermore, materials, assignments, and quizzes not only fill in face-to-face vacancies but also stimulated undergraduates to perform CTS.

Figure 9 shows contextual learning promotes students to know about critical thinking and problem-solving skills, as well as to acquire essential knowledge and concepts. This makes the role of lecturers as facilitators to become visible. Therefore, teachers tend to stimulate and present thinking situations for students through the use of concepts and facts in the learning material.

### **Lecturer's ability to manage discussion**

Discussion is an interaction between students and lecturers to analyze, explore, and solve certain problems. According to Schellens & Valcke (2005), it makes undergraduates gain complete knowledge of the available tasks. The figure below shows the student responses about the lecturers' ability with the discussion method.



*Figure 11. Lecturer's ability to manage discussion*

Figure 11 shows that the respondents' answers on the lecturer's ability to manage discussions are in the very good, good, moderate, and poor categories at 26.9%, 50.6%, 19.2%, and 2.3% respectively. This is because online learning not only facilitates the communication process but also manages discussions for 30 students without using limited internet data and access from each individual. Averagely, the students make a good response to the lecturers' ability.

### **Conclusion**

The online policy in the learning management system (LMS) considers the students' needs because it is independent. A total of 308 undergraduates at IAIN Ponorogo, UIN Surakarta, UIN Malang, and UIN Samarinda were selected as the

respondents of this study. The results showed that the use of Google Classroom and e-learning have about 68.5% and 60.1% responses from the students. However, the learning achievement is indicated in the quality and implementation of *RPS*. This quality is shown through the student's very positive, average good, and very good responses on the learning experience, final abilities, methods, as well as references. E-learning makes undergraduates active, independent, creative, responsible, and critical thinking. Also, it enables students to achieve educational, collaborative, and contextual goals, as well as provides them with discussion skills. These results showed that the adoption of e-learning by the four universities failed to fully help learning outcomes in society. The presence of new information technology (IT), unstable internet access, limited infrastructure, and the dominant teacher-oriented culture greatly affect the acceptance of online education. In Indonesia, e-learning failed to promote maximum cultural change because it is more individualistic even though the country has a collectivistic character. People accept online education depending on the technical, organizational, and cultural aspects. However, e-learning facilitates the lecturers' task in overcoming the limitations of infrastructure during the pandemic.

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