

Feasibility study of Massive Open Online Course (MOOC) in supporting self determined learning in state islamic higher education

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ABSTRACT

The learning model in the digital era has changed from traditional face-to-face learning to online learning. It causes stuttering and uncertainty for educational institutions, including the State Islamic Higher Education, especially the readiness of lecturers. Each lecturer has different models, strategies and learning media in managing the class according to their understanding and ability in online learning. This study aims to see the readiness of lecturers for online learning through MOOCs media with a heutagogy approach using the e-learning system at their respective universities. The quantitative research method uses 5 elements of heutagogy and 1 element of MOOCs with 52 sampling data on State Islamic Higher Education lecturers. The results show that the lecturers have competence and readiness in using online learning technology, but there are weaknesses in lecturers' understanding in using the heutagogy approach in learning.

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1. INTRODUCTION

Self Determined Learning is an independent learning aided by online learning technology tools. So far, Information and Communication Technology (ICT) offers many methods and models to improve the teaching and learning of blended learning and distance learning[1]. The role of technology in implementing the latest curriculum and technology also has the potential for development. Teaching has the potential to change in accordance with the development of ICT. Far on Higher Education, things that need to be prepared for distance learning are: a) preparation of more innovative learning system, competitive and skilled graduates, especially in the aspects of data literacy, technological literacy and human literacy, b) a daptive reconstruction of higher education institutional policies and responsiveness to the industrial revolution 4.0 in developing transdisciplinary sciences, c) Preparation of responsive, adaptive and reliable human resources to face the industrial revolution 4.0. d) Infrastructure and development of education, research, and innovation infrastructure to support the quality of education, research, and innovation. One of the innovative learning medias is e-learning. There are five types of e-learning, namely self-determined-learning, Instructor-Led E-Learning, Facilitated E-Learning, Embedded E-Learning, Telementoring and E-Coaching[2]. Heutagogy is a form of implementation of self-determined learning that uses a holistic approach in developing students' abilities through an active and proactive learning process. Self-determined Learning requires internet media to facilitate students in accessing modules, assignments, communications, exams. The involvement of lecturers and students in sharing experiences will enrich the cognitive and dextrous acquisition of students[3].

The emergence of various online learning sites is the result of the digital revolution that has changed many things, one of which is how humans gain knowledge easily. Massive Open Online Courses or MOOCs is a form of e-learning that offers an independent learning model (Self Determined Learning) involving many learners from across areas and over time. MOOC trends have emerged such as Coursera,

LangMOOCs, MOOCs4inclusion. LMOOCs for language learning such as edX is developed by MIT and Harvard University, Udacity's MOOCs for computer science classroom learning is developed by Stanford University. MOOCs Udemy offers technical skills programs to support the world of work. MOOCs in Indonesia were developed by several universities and for-profit institutions such as IndonesiaX, Udayana University holding limited MOOCs for several subjects, UNAIR MOOCs, Ciputra University UCEO, Focus from Gadjah Mada University and MOOCs from the Open University. The nature of learning MOOCs with an open and non-linear environment for sharing information and knowledge gives students the freedom to define learning goals and design their own learning paths. The heutagogy approach offers greater flexibility and autonomy in students' independent learning so that they are able to reflect on themselves and know their needs. Self-determined learning through MOOCs offers a range of advanced learning skills according to student needs[4].

Each university at State Islamic Higher Education has the autonomy to use the e-learning system to support their learning according to their respective characteristics[5]. The existence of e-learning to accommodate maximum pedagogical practice by taking into account the principles of development involving users. This development principle covers all the needs of online learning tools, namely resources, learning activities, digital materials, mentoring processes and it is to do the assessment and reflection[6]. MOOCs environment is ideal for applying heutagogical principles, namely offering open content access. Students can choose content according to their interests, supports non-linear learning and knowledge is presented as a result of recycling[7]. Heutagogy has the potential to support distance learning theory so that aspects of heutagogy can be used to measure students' readiness to learn using MOOCs[8].

Mapping the use of e-learning for each State Islamic Higher Education can find out which components are in accordance with modern learning principles or have not fulfilled them. This modern learning principle is important as a reference for the development of e-learning which seeks to make education a process in which students have independent thinking, autonomous and independent actions, and construct knowledge into lifelong learning[9]. Previous research has stated that the use of the curriculum in higher education is not yet compatible with the existing educational structure. The assessment model for students needs to be aligned with the student's willingness and ability. Students are given the opportunity to measure and self-assess the learning they have done[10].

This research is important to do to obtain data and information related to the level of readiness of State Islamic Higher Education to reach a future full of opportunities and challenges in implementing independent learning. MOOCs learning in the Higher Education environment is a necessity in increasing the gross enrollment rate (GER) of lecturers in the implementation of online learning using a heutagogy approach. Learning is student-centered and determined by the students themselves, carrying out the process of self-reflection and metacognition, double loop learning, non-linear learning, student abilities from learning outcomes, and the use of MOOCs elements as learning media. Fostering a "culture of shifting" through a more mature process of technology requirements and information systems in accordance with State Islamic Higher Education aspiration become a World Class University. The results of this study can be used as a reference for the State Islamic Religious University in developing an online learning framework in accordance with the culture of each university through a heutagogy approach. Each Higher Education has a different level of learning conditions, both advantages and disadvantages each of them. The readiness of educators to the learning model that is expected in the future is collaborative learning between universities which is systematically organized using a joint MOOCs system.

2. RESEARCH METHOD

The feasibility study of massive open online courses in supporting self-determined learning at State Islamic Higher Education uses the basic concept of heutagogy as a reference using the 5 principles of heutagogy [10] and MOOCs [11], [12].

1. Heutagogy: Student-centered and student-defined
2. Heutagogy: Self-reflection and metacognition
3. Heutagogy: Two-round learning
4. Heutagogy: Nonlinear learning
5. Heutagogy: Ability
6. MOOCs: Open and massive online lectures

The research method uses a quantitative descriptive survey. There were 5 aspects of heutagogy and 1 aspect of MOOCs that were investigated, namely student-centered and student-defined, self-reflection and metacognition, two-round learning, nonlinear learning, ability, open online lectures and the magnitude of MOOCs. The survey was conducted on the lecturers at State Islamic Higher Education in the even semester of 2020/2021 academic year. The author conducted an online survey by google form to the lecturers in the

State Islamic Higher Education. The samples are 52 lecturers. The main elements of the instrument are presented in table 1.

Table 1. Elements of field evaluation instruments

Element	Evaluation Items
1	Learning is student-centred and determined by the students themselves. This section means that students are the center of the whole learning process, independent, self-motivated, self-directed, and self-determining (deciding how and what to study and assess)
2	Self-Reflection and students' metacognitive abilities. This section is intended how students reflect on what has been learned and how it is learned to be conveyed in lectures.
3	double loop learning This section means that students undergo a process of self-reflection and metacognition in which they also question their beliefs and assumptions about learning and engage both psychologically and behaviorally.
4	Assessment related to non-linear learning. This section is intended that the learning path is flexible, students carry out non-linear learning not limited by their field of knowledge
5	Student abilities. This section is intended that the concept of holistic learning includes creativity, self-efficacy, and collaboration, namely the ability to use competencies in each situation.
6	Learning using MOOCs. This section is intended that the learning character according to MOOCs has been used in the e-learning system (although the learning system has not been named MOOCs).

3. RESULTS AND ANALYSIS

3.1. Student-centered learning

The diverse nature of MOOCs learners and the inherently flexible nature of digital learning environments is as well as the distance between learners. Technology is a solution as a communication medium that connects learners through structured learning designs and meets the rules of learning theory. This is the key to successful learning using MOOCs that emphasizes learner-centeredness. According to George Siemens as quoted, [11] it states that "In a true learner-centered environment, the learner is the starting and ending point of the learning process, and the need is the focus of the course/program/organization. Basically, not the instructor, organization, or software that controls the learning experience but the learner."

Student-centered as the implementation of the humanistic concept is the answer to the mechanistic psychology of behaviorism. With this approach, student learning becomes a personal experience that places the learner at the center of the educational process as an active agent. The idea that the learner is at the center of the educational process became a common feature of all the concepts that later emerged in the field of educational technology: self-directed learning or self-determined learning (heutagogy). Self-determined learning requires more learner autonomy and allows more flexibility.

The role of the lecturer as a learning facilitator has a very close relevance in the student's independent learning process as well as a supporting peripheral in self-determined learning so that students can decide how and what to learn. Finally, in self-determined learning, the learner participates actively in designing the curriculum – flexible and subject to change at any time – choosing the content and form of assessment.

One of the main elements supporting State Islamic Higher Education readiness in independent learning is the readiness of lecturers. The understanding of lecturers towards students carries out independent learning activities and determines their own learning requires a similar frame with the lecturer. The extent to which the lecturer's understanding supports students to learn independently, the extent to which the lecturer supports the students to determine and decide how and what to study independently, the extent to which the lecturer facilitates and provides space for students at the beginning of the lecture to make corrections to the material in the semester lesson plan, the extent to which the lecturer facilitate and provide space for students at the beginning of the lecture to add other material to be studied, the extent to which lecturers encourage students to solve problems by involving interaction in groups.

Table 2 shows the survey results of the mean and standard deviation with a Likert scale of 1-5, the average score ranging from 3.98 to 4.67 representing the level of readiness of lecturers in student-centered learning. The findings show that respondents have the highest level of readiness in terms of encouraging students to solve problems by involving interaction with groups (mean score 4.67). While the lowest level of lecturer readiness is to facilitate and provide space for students at the beginning of the lecture to make corrections to the material in the semester lesson plan (mean score 3.98). However, the lecturer readiness score from the dimension to face the student-centered learning model is determined by the students having a high score of 4.25

Table 2. Dimensions of learning are student-centered and self-determined

Items	Average	Standard Deviation
I support students to do their own learning.	4,35	0,96
I support students to determine and decide how and what to study independently	4,10	0,90
I facilitate and provide space for students at the beginning of the lecture to make corrections to the material	3,98	1,07
I facilitate and provide space for students at the beginning of the lecture to add other material to be studied	4,13	0,92
I encourage students to solve problems by involving interactions with groups.	4,67	0,73

3.2. Self- Reflection and metacognition process

The process of self-reflection and metacognition is a process in which students reflect on what have been learned and how it was learned. Lecturers and students together to carry out lesson plans since the learning activity begins. One of the important and fundamental parts of independent learning is the process of self-reflection and student metacognition [12]. This process requires the role of the lecturer in providing space for students. The extent to which lecturers explain the directions and goals in each lesson with students, the extent to which lecturers encourage students to reflect and independently evaluate their learning experiences, the extent to which lecturers provide feedback responses to students based on their independent learning outcomes, the extent to which lecturers encourage students to relate one knowledge to another other knowledge in order to form metacognition, the extent to which lecturers respond to questions from students during lectures, the extent to which lecturers provide time and opportunities for students to convey learning outcomes in lecture forums.

Table 3 shows the results of the survey of the mean and standard deviation with a Likert scale of 1 - 5, the average score ranging from 4.37 to 4.67 representing the level of readiness of lecturers in the process of reflection and metacognition towards students. The findings show that respondents have the highest level of readiness in terms of direction and purpose in each lesson with students (mean score 4.67). While the lowest level of lecturer readiness is to provide feedback to students based on their independent learning outcomes (mean score 4.37). Similarly, lecturers encourage students to reflect and independently evaluate their learning experiences having the lowest level of readiness (mean score of 4.37). However, the score of lecturers' readiness to face the process of self-reflection and metacognition has a high score, which is an average of 4.50.

The inability of some students to conduct self-assessment could be due to the lack of reflective and metacognitive skills from the students. Reflection is the act of making judgments about what has happened. While metacognition is the sensitivity and knowledge possessed by a person about his own thought process and the strategies he has done, and his own ability to evaluate and regulate his own thought process. Reflection and metacognitive skills applied to the implementation of the assessment are finally transformed into a self-regulation [4].

Lecturers have a responsibility in creating a learning environment that can provide emotional security and higher opportunities for student involvement and responsibility through self-assessment activities, so that self-efficacy and motivation in student learning increases. This self-assessment is very helpful in building students' sense of responsibility in learning, self-monitoring in learning activities, instilling awareness to improve self-efficacy, and building logical arguments [13].

Table 3. Self- Reflection and metacognition process

Items	Average	Standard Deviation
1. I explain the direction and purpose of each lesson with students	4,67	0,51
2. I encourage students to do self-reflection and self-evaluation of their learning experience	4,37	0,62
3. I provide feedback to students based on their independent learning outcomes	4,37	0,73
4. I encourage students to relate one knowledge to another in order to form metacognition.	4,40	0,77
5. I respond to questions from each student during the lecture	4,63	0,56
6. I give time and opportunity to students to convey learning outcomes in lecture forums	4,54	0,60

3.3. Double loop learning

Double-loop learning actually provides opportunities and space for students to conduct studies that review and analyze theories and problems, assumptions and personal values in order to strengthen new understanding of the iterative learning process. The role of lecturers is important in double-cycle learning to facilitate students in developing their competencies. Besides, double-cycle learning also carries out scientific construction so that the role of the lecturer is more needed, namely the extent to which the lecturer understands the concept of theoretical studies or models from lectures delivered to students, the extent to which lecturers use discussion forums with students to examine theoretical concepts or models of teaching

material. The extent to which lecturers use discussion forums with students to discuss feedback, the extent to which lecturers use discussion forums with students to conduct critical studies of theories, assumptions or strategies from teaching materials holistically, the extent to which lecturers provide space for students to seek opportunities the formation of a strategy or method or a new model based on the results of the process of reflection and self-evaluation.

Table 4 shows the results of the survey of the mean and standard deviation with a likert scale of 1-5, the average score ranging from 4.31 to 4.66 represents the level of readiness of lecturers in the multiple-cycle learning process. The findings show that respondents have the highest level of readiness in terms of using discussion forums with students to discuss feedback (mean score 4.46). In addition, lecturers also have the highest level of readiness in evaluating the learning process that has been carried out by students (mean score 4.46). While the lowest level of lecturer readiness is in providing space for students to seek opportunities for the formation of a new strategy or method or model based on the results of the process of reflection and self-evaluation (mean score of 4.31). However, in general, lecturers have high readiness in conducting dual learning with a high score (mean score 4.40).

Table 4. double-loop learning

Items	Average	Standard Deviation
1. I understand the concept of theoretical or model studies that are conveyed in lectures that are delivered to students.	4,44	0,54
2. I use discussion forums with students to examine theoretical concepts or models of teaching materials	4,37	0,67
3. I use discussion forums with students to discuss feedback.	4,46	0,57
4. I use discussion forums with students to conduct critical studies of theories, assumptions or strategies from teaching materials holistically.	4,38	0,61
5. I provide space for students to look for opportunities to form a new strategy or method or model based on the results of the process of reflection and self-evaluation.	4,31	0,60
6. I evaluate the learning process that has been carried out by students	4,46	0,57

3.4. Non-Linear Learning

The last basic element of the heutagogical learning approach is nonlinear learning. Students are responsible for learning independently and determine the path of learning independently as well; through non-linear learning makes students have varied experiences, the paths taken can be different and unpredictable but still under control. Students are actively involved in learning as a process of discovering and interpreting new information and building new knowledge based on existing understanding models and by thinking and reflecting on what has been learned [14]. Students have the opportunity to do nonlinear learning so that new instructions grow that can be adapted to their original knowledge. In adapting to the learning path determined by students as adults, the role of the lecturer in the learning process serves as a mentor and guide for the learning experience. Lecturers also play this role as learning leaders, demonstrating the ability to deal with ambiguity, the capacity of lecturers also to maintain student involvement in independent learning and independent learning that applies open systems thinking [15].

The readiness of lecturers in preparing students for non-linear learning is inseparable from several things, namely, the extent to which lecturers encourage students to explore learning materials from various points of view, the extent to which lecturers encourage students to strengthen their personalities and attitudes through learning from the surrounding environment, the extent to which lecturers do diagnostic test to students, whether they have studied other sciences in supporting scientific strengthening from the material, the extent to which lecturers conduct learning at the beginning of the lecture by asking students to define the initial understanding and expected abilities of the course, the extent to which lecturers encourage students to find and solve course learning problems using a available resources and their respective situations..

Table 5 shows the survey results of the mean and standard deviation with a Likert scale of 1-5, the average score ranging from 3.90 to 4.58 represents the level of lecturer readiness in non-linear learning. The findings show that respondents have the highest level of readiness in terms of encouraging students to explore learning materials from various perspectives (mean score 4.58). While the lowest level of lecturer readiness is in terms of conducting diagnostics to students whether they have studied other sciences in supporting scientific strengthening of the material being discussed (mean score 3.90). However, in general, lecturers have high readiness in conducting non-linear learning with a high score (mean score 4.28).

Table 5. Non-Linear Learning

Items	Average	Standard Deviation
1. I encourage students to explore learning materials from various points of view	4,58	0,51
2. I encourage students to strengthen their personality and attitudes through learning from the surrounding environment.	4,40	0,75
3. I do diagnostics to students whether they have studied other sciences in supporting scientific strengthening of the material being discussed	3,90	0,94

4.	I do learning at the beginning of the lecture by asking students to define the initial understanding and abilities expected from the course	4,17	0,76
5.	I encourage students to find and solve subject learning problems using existing resources and their respective situations.	4,35	0,63

3.5. Student Ability (Self Efficacy)

Self-efficacy is an important element to build student abilities. Ability comes from a sense of self-efficacy so that ability cannot develop without self-efficacy. Students who have better self-control can show a higher level of self-efficacy as well. A good lecturer is able to see that his students have high self-efficacy abilities in adapting to different conditions, have life skills to face all challenges and opportunities. The paradigm shift in the function of lecturers in preparing their students to have high self-efficacy can be seen from several parameters, namely, the extent to which lecturers see all students enthusiastically and honestly conveying their understanding of the material they are studying independently, the extent to which lecturers see students as being able to carry out scientific development constructively through independent learning in accordance with their respective learning styles, the extent to which lecturers see students as being able to convey the learning experiences of independent learning outcomes to peers as a transfer of knowledge, the extent to which lecturers see students being able to listen and understand the results of peer learning experiences as reinforcement of new knowledge, to what extent lecturers see that all students can take part in online learning based on e-learning websites, the extent to which lecturers see students are able to meet competency standards through learning that is directed and determined by students (heutagogy). The extent to which, the lecturers see that students do not experience technological stuttering problems in using online learning media.

Table 6 shows the results of the average survey and standard deviation with a Likert scale of 1-5, the average score ranging from 3.77 to 4.08 represents the level of lecturers' readiness in conducting self-efficacy assessments of students. The findings show that respondents have the highest level of readiness in terms of I see students being able to convey the learning experiences of independent learning outcomes to colleagues as a transfer of knowledge (mean score 4.08). While the lowest level of lecturer readiness is in terms of I see students are able to meet competency standards through learning that is directed and determined by students or heutagogy (mean score 3.77). Overall, the dimensions of student self-efficacy or self-efficacy, lecturers do not have readiness less than 4 and this is still relatively low (mean score 3.92).

Table 6. Students ability (*self efficacy*)

Items	Average	Standard Deviation
1. I see that all students are enthusiastic and able to convey their understanding of the material they are learning.	3,88	0,82
2. I see that students are able to carry out scientific development constructively through independent learning in accordance with their respective learning styles	4,00	0,76
3. I see that students are able to convey the learning experiences of independent learning outcomes to their colleagues as a transfer of knowledge.	4,08	0,70
4. I see students are able to listen and understand the results of the learning experiences of their peers as reinforcement of new knowledge.	4,02	0,66
5. I see that all students can take part in online learning based on the elearning website.	3,81	0,94
6. I see that students are able to meet competency standards through learning that is directed and determined by students (heutagogy).	3,77	0,87
7. I see that students do not experience technological stuttering problems in using online learning media.	3,90	0,80

3.6. Open and massive online lectures

Lecturers are one of the important components in the teaching and learning process. As the estuary of all theoretical knowledge, basic skills, and in-depth understanding of learning objects and learning situations, lecturers must have the ability to make teaching preparations using learning technology. In the digital era, the competence of lecturers in the use of learning technology becomes very important when learning requires that it will be done online using internet facilities. One of the e-learning that has a well-ordered construction is MOOCs (massive open online course) media which has standard characteristics in accordance with learning theory that uses an independent learning approach (heutagogy). The competence to prepare e-learning is that lecturers are familiar in using e-learning websites in online learning. Familiar lecturers use various types of collaborative learning resources such as videos, lectures, quizzes, practice, exams, assessments. In addition, the familiar lecturers to use laptops / computers for online learning, the lecturers have the ability to add lecture materials, announcements, assignments, evaluations, assessments, discussion forums, attendance through elearning websites. Besides, lecturers have the ability to record learning videos and upload lecture videos into elearning websites / other media.

Familiar lecturers are involved in discussions and interact with students online through the e-learning website, familiar lecturers download and check student work through the e-learning website.

Lecturers are familiar and understand the different language styles of students with different language abilities. Familiar lecturers guide students in online learning through the e-learning website. Lecturers know several online learning media that have implemented MOOCs media both nationally and internationally such as coursera, edx, indonesiaX, and others. Familiar lecturers provide feedback and feedback to students through the e-learning website.

The ability of lecturers to prepare students for e-learning and make learning transitions work well must also be followed by their ability to use the technology used by their students. The competence of lecturers in implementing e-learning is important because in carrying out e-learning, the lecturer must change the role of being a facilitator or tutor, where the focus is not only on the content of the material but also on the formation of a learning community. The purpose of establishing this community is to encourage collaborative learning and develop reciprocal cooperative relationships between students. At this stage the aspect that must be considered is the ongoing interaction between lecturers and institutions, lecturers with students, as well as controlling interactions between students.

Table 7 shows the results of the average and standard deviation survey with a Likert scale of 1-5, the average score ranging from 3.81 to 4.58 representing the level of lecturers' readiness in using e-learning, especially MOOCs. The findings show that lecturers have the highest level of readiness in terms of being familiar with using laptop/computer devices for online learning (mean score 4.58). While the lowest level of lecturer readiness is in terms of getting to know several e-learning learning media that use the MOOCs concept such as coursera, edx, indonesiaX, and others (mean score 3.81). Overall, the instrument for the dimensions of e-learning is high (mean score 4.34).

The researcher conveyed to the respondents that this massive online and open learning was carried out in direct and indirect language using the term MOOCs. However, the instrument presented using indirect language is a characteristic or indicator that online learning conducted by lecturers is part of the MOOCs concept. If it is stated in direct language with the term MOOCs, there are still many lecturers who are not familiar with the term.

There are two types of MOOCs, connectivity-based and instructional classroom-based. However, in this study, the instrument developed is more on the use of MOOCs-based instructional class MOOCs (xMOOC) with the consideration that the transition process of changing learning media requires a large effort with unequal resources, especially lecturers who are spread throughout Higher Education. In the context of instructional MOOCs, the massive attribute clearly refers to a very large number of participants. The term Open refers to the open and free access of every learner to teaching materials and is otherwise available only to students from local colleges.

Table 7. E-Learning MOOCs

Items	Average	Standard Deviation
1. I am familiar with using e-learning websites in online learning.	4,44	0,64
2. I am familiar with using various types of collaborative learning resources such as videos, lectures, quizzes, practice, exams, assessments.	4,54	0,59
3. I am familiar with using laptop/computer devices for online learning	4,58	0,62
4. I have the ability to add lecture materials, announcements, assignments, evaluations, assessments, discussion forums, attendance through the e-learning website.	4,42	0,72
5. I have the ability to record learning videos and upload lecture videos into e-learning websites / other media.	4,33	0,66
6. I am familiar with engaging in discussions and interacting with students online through the e-learning website	4,38	0,67
7. I am familiar with downloading and checking student work through the e-learning website.	4,42	0,67
8. I am familiar with and understand the different language styles of students with different language abilities.	4,33	0,72
9. I am familiar with guiding students in online learning through the e-learning website	4,31	0,72
10. I know several national or international learning media such as coursera, edx, indonesiaX, and others	3,81	0,92
11. I am familiar with giving feedback and feedback to students through e-learning websites	4,21	0,75

4. CONCLUSION

The conclusion of the study is a note on the readiness of lecturers in online learning using MOOCs media with a heutagogy approach. In general, lecturers have competence and readiness in using online learning technology using the internet. As for online learning that puts forward learning the heutagogy approach, there are notes related to an important element in learning heutagogy from each dimension. The lowest lecturer readiness under the value of 4 of the 6 dimensions is

- 1) Facilitate and provide space for students at the beginning of the lecture to make corrections to the material in the semester lesson plan

- 2) Doing checks or diagnostics to students whether they have studied other sciences in supporting scientific strengthening of the material being discussed
- 3) Seeing all students enthusiastically and honestly conveying their understanding of the material they are studying independently.
- 4) Seeing all students can take part in online learning based on the elearning website.
- 5) Seeing students able to meet competency standards through learning that is directed and determined by students (heutagogy).
- 6) Seeing that students do not experience technological stuttering problems in using online learning media.
- 7) Get to know some national or international learning media such as coursera, edx, indonesiaX, and other.

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