The COVID-19 impact on statistical learning at State Islamic University in East Indonesia

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Abstract. This research aims to describe the portrait of statistical learning before COVID-19 at State Islamic University in east Indonesia, the transformation of the blended learning to full e-learning in statistical courses as the impact of the COVID-19, as well as the challenges and opportunities of statistical courses with full e-learning in COVID-19 situations. The type of this research is descriptive qualitative. Data obtained by telephone interviews with five lecturers from State Islamic University in east Indonesia. The data analysis technique consists of data reduction, data display, and verification. The results of this research show that lecturers have applied e-learning in statistics courses at State Islamic University before the COVID-19. Although face to face learning methods is more dominant used in statistical courses than e-learning methods. The dominant learning media used by lecturers in statistics courses during COVID-19 are WhatsApp and Google Classroom. The biggest challenges faced at statistical courses by e-learning systems are the availability of a stable internet network, and some students do not have personal computers and even mobile phones. As good news, this situation can challenge lecturers and students to be more literate and accustomed to technology. Some lecturers even make YouTube account to support statistical learning.

1. Introduction
The first case of COVID-19 in Indonesia was announced on March 2, 2020. Based on the data released by the Ministry of Health Republic of Indonesia, until this paper was written on July 8, 2020, it confirmed that there are 68,079 people positive cases COVID-19 in Indonesia. COVID-19 in Indonesia affects all sectors. The education sector is one of the affected sectors of the increase in the COVID-19 case in Indonesia, especially the State Islamic University. Based on the circular letter of the Ministry of Education and Culture Republic of Indonesia Number 3 the year 2020 concerning the prevention of COVID-19 in education, all universities in Indonesia took a decisive step to conduct learning activities from home.

This situation has made all universities in Indonesia face new challenges, especially in this study, State Islamic University in east Indonesia. The organizers of State Islamic University are required to adapt and innovate, especially in the learning process. Some of Indonesia's State Islamic Universities have implemented a learning system based on technology, which is a blended learning system. Blended
learning is known roughly as combining the traditional instructor-led classroom learning and technology-based e-learning [1]. Since the effect of COVID-19, then the whole process of learning at University in Indonesia, especially in this research of State Islamic University, is required to implement a learning system based on technology, in this case, using a full e-learning system. E-learning is the use of electronic media for a variety of learning purposes that range from add-on functions in conventional classrooms to complete substitution for face-to-face meetings by online encounters [2]. According to González-Videgaray M, e-learning is learning based on information and communication technologies with pedagogical interaction between students and the content, students, and the instructors or among students through the web [3].

Currently, the State Islamic University in Indonesia is in the transformation phase of the blended learning system to a full e-learning system. Applying the transformation of a combined learning system to the whole e-learning system in Indonesia has challenges and opportunities. Indonesia is a large country, and information technology is not evenly distributed in some areas in Indonesia, especially in the eastern region of Indonesia. The problem of the application of information technology (IT) in State Islamic University in Indonesia is one of the themes that appeal to researchers and practitioners in the information systems discipline since two decades ago [4].

The statistical course is one of the general courses at State Islamic University in Indonesia, so all the students in all majors in State Islamic University Indonesia study this course. Lecturers who teach courses of statistics on students in social majors have their challenges in knowledge transfer, where students need more intense mentoring from lecturers who teach the subject. In COVID-19 situations, lecturers who teach statistics in social majors are required to innovate and be creative in the e-learning process, so students can more easily understand the learning material and maintain student enthusiasm in learning.

The purpose of this study is to describe the portrait of statistical learning before COVID-19 at State Islamic University in east Indonesia, the transformation of the blended learning method to full e-learning in statistical courses, as well as opportunities and challenges in learning statistical with a full e-learning system in COVID-19 situation.

2. Methods
This research was conducted for one week, from August 31 to September 6, at a state Islamic university in East Indonesia. This research is qualitative research, where the researchers are the key instrument. Data collection was carried out through in-depth interviews by telephone. Interviews were conducted with five statistics lecturers from state Islamic universities in East Indonesia. These universities are UIN Alauddin Makassar, UIN Mataram, and STAIN Majene. In this research, the researcher tried to obtain a portrait of statistics learning at state Islamic universities in East Indonesia before and during COVID-19. The impact of COVID-19 on the statistics learning process, which includes learning methods, media, and evaluation, as well as the challenges and opportunities faced by statistics lecturers in the learning process during COVID-19. Stages analyzed the interview data obtained; reduction, display, and verification of data.

3. Result and discussion

3.1. Portrait of statistical learning based on blended learning at State Islamic University in East Indonesia before COVID-19
Some of State Islamic University in east Indonesia has implemented an information technology-based learning system that uses an e-learning system combined with a face to the face learning system. The method is also referred to as the blended learning method [5][6][7][8]. Although the portion of the implementation of face to face learning systems is more dominant compared to the use of e-learning, especially in statistical learning.

It is in line with the results of interviews with Ichsan Nawawi, a lecturer from UIN Alauddin Makassar, Darwis, a lecturer from STAIN Majene, and Hesikumalasari, a lecturer from UIN Mataram
who teach statistics courses. Ichsan Nawawi, Darwis, and Hesikumalasari are statistics lecturer from a state Islamic university who said e-learning had been implemented before entering the COVID-19 era. However, it is undeniable that face to face learning systems is generally more dominant in comparison to e-learning methods, especially in statistical courses. The face to face learning method is implemented by relying on a problem-based demonstration method solving. The demonstration method is performed whereby the lecturer presents the material, while the student listens and gives feedback on the material submitted by the lecturer. The material presented is usually in the form of presentation slides, then continued with discussion sessions and exercises as well as assignments. For example, in conducting a data practice, lecturers give demonstrations, and students follow the instructions. While problem-solving is a strategy of learning how students in finding solutions to the problems posed by the lecturers either independently or jointly. This strategy can make students more active, skilled, and able to find the right solution and structure when guided by lecturers [9][10][11].

In preventing the boredom and monotonous learning conditions, lecturers use a combination of learning systems using e-learning. A lecturer from UIN Alauddin Makassar said that UIN Alauddin Makassar has a learning center area or called LENTERA. LENTERA is a space or place students to study online or commonly called e-learning. The virtual class will assist lecturers in teaching and facilitate students in the course. The way of this e-learning system is that lecturers upload e-books and presentation slides. However, the implementation of the Learning Center Area is not maximized. It is because the lecturers have their challenges in teaching statistical courses through e-learning. For example, in decreasing statistical formulas and implementation of practicum, students need more intense mentoring. It applies to not only the course of statistics but also all courses that use calculations, such as mathematics and others. In addition to using the Learning Center Area, the lecturers also use Google Classroom and Kahoot in the learning process. While in the evaluation process in the course of statistics, generally use evaluation in writing.

3.2. Blended learning to full e-learning on statistical learning at State Islamic University in East Indonesia
The education sector in Indonesia is one of the sectors affected by COVID-19. Since the Ministry of Education and Culture Republic of Indonesia instructed all the University, including State Islamic University, to apply study from home, then all the teaching process activities are transferred to the full e-learning system. Lecturers and students are forced to adapt to the e-learning system. This situation challenge lecturers to create creativity in the learning process. In this case, the lecturer is required to use the learning media-based information technology.

In this research, several learning media will be presented in the e-learning system by lecturers in statistics courses during the COVID-19 pandemic. Learning media is used by adjusting student characteristics and conditions. To create an active and effective learning process. In realizing these objectives, the lecturer needs to make exciting teaching materials and statistical learning media. There are classifications of the use of ICT (Information, Communication, and Technology) into three types, namely: first, ICT as an educational media (tool) that is only as a complement to clarify the description conveyed. Second, ICT as a source that is as a source of information and seeking information. Third, ICT as a learning system.

Generally, statistical learning media that is dominantly used by the lecturers at the time of pandemic are WhatsApp and Google Classroom. WhatsApp is one of the most popular communication media nowadays. WhatsApp is one application that is used to have conversations using text, voice, or video. Before the COVID-19 pandemic, lecturers and students had intensively communicated and interacted with learning through WhatsApp groups. However, online learning during this pandemic should be utilized by lecturers to develop digital competence so that the digital mode used by each lecturer can be more varied. It aims to avoid the boredom of students in learning and absorbing information related to teaching materials, in addition to preventing monotonous patterns that are performed by several lecturers.
On the WhatsApp platform, the learning process is done by lecturers sending lecture material, such as pdf, presentation slides, and others. In the form of presentation slides, then the presentation slides are given an explanation one by one through a voice recorder. After the lecturer explains, students are allowed to ask questions. Then the lecturer gives practice and assignments. In the presentation slide, the problem-solving process (case illustration in daily life) is applied, and quiz activities are conducted as a form of evaluation at the end of learning through the application of Kahoot. Kahoot is a learning platform presented as a game tool that enables smartphone gamification and integration in classrooms and other activity events. Kahoot can increase student participation and relationships between different groups [12]. In addition to lecturers sending presentation slides, lecturers also send e-books as the main reference in the lecture, as well as YouTube links related to lecture material.

The statistics lecturer from Mataram State Islamic University said that in statistical learning, the lecturer conducts an introduction through video/motion graphics media and implements learning by asking questions through the application sli.do. Motion graphic is a technique that combines visual media. Thus, objects appear dynamic and attractive. There are two methods in this technique, namely moving images and combining image sequences with continuity [13][14]. Slido (or Sli.do) is a conference interaction tool. This application is designed using smartphones, tablets, laptops in expressing opinions and choices for the audience to ask questions from lecturers. It can help students in expressing brilliant opinions but do not have high confidence to express [15].

Some lecturers use the Zoom meeting platform, an application using video. The application can be used on a variety of mobile and desktop devices. This application is equipped with HD video and audio features, share screens, built-in collaboration tools, security, recording and transcripts, scheduling, and team chats. The zoom application in statistics courses will greatly facilitate lecturers in teaching and students to receive lecture material on this COVID-19 pandemic. But because the problem is not all students do not have laptop facilities and a stable internet network, so the use of the zoom application is very rarely used by lecturers in statistics courses. However, some lecturers insist on using the zoom application, even though a few students only attend it. For students who are constrained by the internet network and do not have personal computers and mobile phones, the lecturer applies a group division and a learning system with peers.

Also, the Statistics lecturer from Majene State Islamic High School said that one of the efforts made to support statistical learning to effect was to create a YouTube account. Where on the YouTube platform, students can access and download learning materials. Lecturers and students can also interact actively in the YouTube comment column. The video is presented by showing a presentation slide, which is then filled with sound. Also, the lecturer offers a video, where the lecturer teaches as face to face learning, which is conducting a demonstration. Videos with presentations like this are generally used by lecturers to explain the material that contains derivative formulas.

Various final evaluation methods are used by lecturers in statistics courses with the e-learning system during the COVID-19 pandemic. Lecturers from UIN Alauddin Makassar use learning center areas or LENTERA in evaluating learning in the statistics course. The evaluation is done by the lecturer uploading questions on the LENTERA platform, and students are given time to complete the exam questions according to the duration of the lecture to prevent students from doing dishonest behavior. The lecturer makes questions with the same instructions, but modifies some numbers or empties some numbers, and then students are asked to input their student ID numbers or attendance sequence numbers. Although this method still allows students to collaborate with their classmates, at least students can complete their exams without duplicating their classmate's exam sheets.

While other lecturers at State Islamic University in east Indonesia dominantly evaluated the study of statistics courses, consistently using WhatsApp platforms. The evaluation is carried out by the lecturer sending the exam questions in the form of a pdf and student exam answers sent via the lecturer's e-mail. Some lecturers in making statistical test questions there are using the system as described in the previous paragraph. Some lecturers make several variants of questions with the same substance and difficulty level of questions but with a different delivery.
3.3. The opportunities and challenges of statistical learning in state Islamic university during COVID-19

Based on interviews with several lecturers who teach statistics on State Islamic University in Indonesia, that the challenges in statistical learning during the COVID-19 period were students having difficulty accessing the internet network. Indonesia is a large and vast country. Currently, Indonesia has been crowned as a developed country, but technology access has not been distributed evenly to all corners of the country. In contrast, access to technology in implementing e-learning is primary and capital. Therefore, because of these limitations, lecturers generally use the WhatsApp platform in conducting statistical teaching and learning processes. Apart from not requiring a large internet quota, also because many providers provide free access to this application. Although in the process of learning statistics using the WhatsApp platform, there are many obstacles, according to the lecturer who taught the course, this is the time to challenge the lecturers in creating creative ideas in teaching in a limited space.

Another challenge faced in the statistical learning process with a full e-learning system is inadequate supporting facilities by students. Such as personal computer and handphone. Some students complained of difficulty following the learning process with a whole e-learning system because they don't have a personal computer and handphone. The implementation of the e-learning system forces lecturers and students to understand and explore the use of information technology and channel creativity through innovations in the learning process.

4. Conclusion

It can be concluded that the portrait of blended learning in statistical learning at State Islamic University before the COVID-19 pandemic that e-learning was implemented before entering the COVID-19 era. Although in statistics courses, face to face learning systems is generally more dominantly used compared to e-learning. Face to face learning method is applied by relying on problem-solving based demonstration methods. While the types of e-learning that are used, for example, at UIN Alauddin, are known as learning center areas or enter while also using Google Classroom and Kahoot in the statistical learning process. While in the evaluation process in statistics learning, generally using written evaluation. After entering the COVID-19 situation, the blended learning system was transformed into full e-learning. The dominant statistical learning media used by lecturers during the COVID-19 pandemic is the WhatsApp and Google Classroom platforms. Learning media are used based on the characteristics and conditions of students. Access to a stable internet network and the unavailability of learning support facilities such as laptops and mobile phones by students are the biggest obstacles in implementing e-learning. However, the COVID-19 pandemic makes lecturers and students are more literate about technology and its use. In addition, they are challenging lecturers to continue to be creative and innovative in the learning process. For example, some lecturers create a YouTube account to support statistical learning. Students can access and download learning materials. Lecturers and students can also interact actively in the YouTube comment column.

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