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Overcoming online learning challenges in the COVID-19 pandemic by user-friendly platform

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ABSTRACT

The shift of learning activities from face-to-face classroom interaction to online learning beyond the classroom due to the global pandemic has caused technological anxiety in teaching and learning. This study analyzed strategies to overcome learning challenges in the COVID-19 pandemic with user-friendly platforms. This study was in the State Institute of Islamic Studies (IAIN) Surakarta, Indonesia, involving 469 lecturers who taught 983 classes as the respondents. The required data were collected using a web-based questionnaire using Google Forms. The data were analyzed descriptively in percentages and elaborated using focus group discussion. The data analysis showed that most teachers used WhatsApp group to overcome learning obstacles during the COVID-19 pandemic. Among the considerations are the lack of information technology infrastructure, the lack of e-learning platforms, the lack of time to adapt, and the difficulty of internet access in some regions. This study contributes to the strategy performed by the lecturers to deal with these challenges is selecting a user-friendly and affordable platform for learning.

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1. INTRODUCTION

The unexpected advent of the global pandemic caused by COVID-19 amidst the teaching and learning process in the university context has resulted in technological learning anxiety for authorities, lecturers, and students. Universities must call on their faculty members and students to do social distancing and conduct online teaching and learning activities using available technology. However, they have not adequately prepared for electronic learning (e-learning) platforms. The situation indicates that not all university lecturers have excellent technical knowledge and performance, particularly on digital learning platforms [1]. Additionally, the students have been familiar with e-learning platforms and have encountered limited access and internet resources. Research shows that the campus has many obstacles to online learning [2]–[4].

Concerning the rapid advancement of technology, the Indonesian Government initially established the Regulation of the Minister of Education and Culture Number 24/2012 concerning distance education. This regulation was followed by the Minister of Education and Culture Decree regarding the guideline for distance learning at the university level in 2016 [5]. Furthermore, in 2020, the Minister of Education and Culture established Decree 7 on 2020 about the distance learning policy. Thus, educational institutions, particularly universities, should immediately adapt to the current phenomena. Otherwise, the situation will

cause ineffective teaching and learning activities and inefficiency. Some of the results showed different results. For example, there is ineffective online learning [3], [6], and some are effective [7]–[9].

As seen from the technology implementation in teaching and learning activities, Indonesian higher education institutions are generally categorized into three: i) Universities designed to administer distance learning, such as Open University (Universitas Terbuka). In the higher education or higher education database (PDDikti) database, at least 30 study programs organize distance education from 14 universities in Indonesia [10]; ii) Many universities conduct teaching and learning activities on campus but apply technology to support the learning management system (LMS). Examples of this such as Universitas Bina Nusantara (UBINUS) and other developed universities; and iii) Universities have not integrated technology into teaching and learning, and almost 100% of the teaching activities are face-to-face. These classifications showed that there would be a disparity when the university changes its systems to a situation where they suddenly shift a face-to-face classroom interaction into online learning using digital technology outside the classroom.

Notwithstanding the facts, in 2018, the Ministry of Research, Technology, and Higher Education stated that in response to industrial revolution 4.0, higher education institutions should emphasize the importance of the digital economy, artificial intelligence, big data, and robotics, that is familiar with disruptive innovation [11]. Furthermore, a study by Maulana and Hamidi revealed that 72.7% of university students positively perceived the readiness of distance learning facilities [12]. However, from an institutional perspective, some Islamic higher institutions have not developed an electronic learning system.

In distance learning, lecturers must have adequate digital technology skills and knowledge. A traditional method of teaching implies the lecturers implemented learning activities tended to be boring and ineffective. Thus they must enhance their creativity and innovation in teaching. Many research results show that implementing online learning is more effective [13]. Similarly, the study shows that online learning using Zoom and WhatsApp was only effective in theoretical subjects but not in several other topics needing practice and field activities [14]. The study of Mpungose indicates that social media is effective for learning [15]. Nowadays, the facts show that there are still a lot of university lecturers who have not possessed adequate knowledge and skill about technology in learning. One research from Ritonga shows that the perception of students studied stated that lecturers already have sufficient competence in technology [16]. Due to the global pandemic, they are anxious about dealing with online teaching and learning regulation. For instance, in the State Institute of Islamic Studies (IAIN) Surakarta, Indonesia, most lecturers did not immediately adapt to online learning, even two weeks after the regulation was established (based on an evaluation of university authorities).

From the students' perspective, the Directorate of Higher Education researched 237,193 Indonesian university students at the end of March 2020. The results portrayed that 95% of them have carried out online learning from their houses. Among the number, 98.2% of students conducted online learning, and 68.7% used smartphones [17]. Therefore, the students could smoothly follow the online teaching activities for academic purposes. It is similar to the results of research conducted by Arlinwibowo that groups of students who utilize information and communications technology (ICT) in learning have better learning outcomes than those who do not use ICT [18]. As a result, 50% stated that online education could assist them during knowledge and consultation. However, although the students can adapt to technology-based learning, they still encounter technical problems such as limited internet access and quota [19]. Moreover, the student's perception of online learning differs between rural and urban students [20] and between one country and another [21].

The present study enriches previous literature about implementing online teaching amidst the global pandemic by focusing on challenges and strategies to deal with the learning model. The discussion highlights three aspects of teaching and learning implementation at the university level, i.e., education authorities, lecturers/instructors, and students. These three aspects are interrelated because the rules create policies, establish regulations, and offer technological facilities. In the same boat, lecturers design effective learning and classroom activities according to their preferences. Meanwhile, as the primary stakeholder, students have a right to obtain the best services, particularly academic assistance. This study's results enhance online learning efficacy in response to the current global pandemic by examining the three parties' perceptions.

The present study argues that technology-based learning improves effectiveness and efficiency. Furthermore, the university established a policy about technology integration in teaching and learning. Thus, online learning amidst this global pandemic should be an opportunity for universities to optimize the use of technology in teaching and learning. Consequently, universities must develop e-learning platforms that suit the institutions' readiness, lecturers' preferences, and students' learning needs. Furthermore, the university must provide an alternative use of a user-friendly platform for learning before creating and establishing an LMS. This study wants to answer the following question: i) How are the challenges of online learning during

the COVID-19 pandemic?; and ii) How do lecturers choose a user-friendly platform for learning during the COVID-19 pandemic?

2. RESEARCH METHOD

This study was conducted in IAIN Surakarta Central Java province, Indonesia, in the even semester of the academic year 2019/2020. This research uses a mixed-method design [22], combining qualitative and quantitative methods. Quantitative methods are used to collect data with surveys, while qualitative is used to analyze and explore the collected quantitative data.

2.1. Participants

The subjects in this study are IAIN Surakarta lecturers who teach in the even semester of the academic year 2020/2021. Respondents have studied as many as 469 lecturers from five faculties, four persons of university leaders, five persons of faculty leaders, and five students from each faculty selected randomly. The quantitative data collection uses a survey of all of the lecturers. This method depicts the challenges and the most frequently used platforms during online learning. In addition, this strategy figures out the system performed by the lecturers to overcome the challenges of online teaching. At the same time, the researcher collects qualitative data through interviews with university leaders, some lecturers, and student representatives.

2.2. Data collection and analysis

The quantitative data collection uses a survey. This study used a web-based survey using Google Forms. The survey link was spread to the prospective respondents using WhatsApp, Indonesia's most frequently used online messenger. A web-based survey is based on the lecturers' situation online from their houses (work from home). The data shows 469 respondents from 580 subjects participated in this study. A lecturer could teach more than one subject. Table 1 presents the number of topics and lecturers in all faculties and graduate programs.

Table 1. The number of subjects and lecturers of even semester academic year 2019/2020

No	Faculty	Number of subjects	Number of lecturers
1	Theology and *Dakwah* Faculty (FUD)	154	114
2	Educational Faculty (FIT)	92	89
3	Language and Literature Faculty (FAB)	129	94
4	Islamic Business and Economic Faculty (FEBI)	120	98
5	Islamic Law Faculty (FASYA)	56	50
6	Postgraduate Program (PPS)	29	24
	Total subjects and lecturers	580	469

The data further showed that, in general, the lecturers who taught the same subjects in different classes used similar strategies. Therefore, the data analysis process by classifying the data based on the courses and subjects of each lecturer. After the process of classification, the total of classes is 983. Finally, the results of quantitative analysis are presented in table dan figure and examined using percentages.

The qualitative data uses to further explore the quantitative data by evaluating teaching and learning implementation to formulate an alternative solution. University and faculty levels authorities conducted the data exploration process in focus group discussion (FGD). Furthermore, the data were presented descriptively and analyzed by following some interpretations. Thus, researching this data using interactive models [23]. The present study delimits the focus of analysis on the data concerning challenges and strategies during distance learning in response to the global pandemic of COVID-19 from lecturers' perspectives, personal statements, and students' opinions.

3. RESULTS

The results are classified into themes based on the data collected using a web-based survey and FGD—thematic data representation based on the research question and objectives. The first goal consists of three themes, the challenge of online learning from the institution's perspective, lecturers', and students' perspectives. The second goal explains the best alternative to choosing a user-friendly online learning platform during the COVID-19 pandemic.

3.1. Challenges of the online learning

A web-based questionnaire using Google Forms was employed to collect the quantitative data. Along with examining the challenges, this study also investigated the lecturers' most frequently used digital platforms. The choice of the media indicated how the lecturers dealt with the challenges. The data were collected using the WhatsApp group of each faculty and graduate program. As the most frequently used social media platform, WhatsApp was also an effort to ensure that the questionnaire was delivered successfully to the target respondents. First, the respondents filled out the questionnaire. Then, the data is classified based on the faculty. The final results of data collection use Microsoft Excell to describe clearly. The data in Table 2 presents the use of e-learning platforms, while Figure 1 explains e-learning platforms in IAIN Surakarta more easily. The lecturers used these platforms during the global pandemic COVID-19 in the even semester of the academic year 2019/2020.

Table 2. E-learning platforms used by the lecturers

No	Platforms	FUD	FIT	FAB	FEBI	FASYA	PPS	Total	%
1	Google Classroom	35	56	90	29	18	8	236	24%
2	Moodle	0	5	0	6	0	3	14	1.4%
3	Edmodo	10	4	13	0	3	1	31	3.2%
4	Schoology	0	1	5	1	1	0	8	0.8%
5	Zoom	9	5	29	13	0	5	61	6.2%
6	Jitsi Meet	9	0	0	2	0	1	12	1.2%
7	WhatsApp groups	149	107	157	85	49	17	564	57%
8	Telegram	1	2	5	0	0	0	8	0.8%
9	YouTube	11	6	21	8	3	0	49	5%
	Total	224	186	320	144	74	35	983	100%

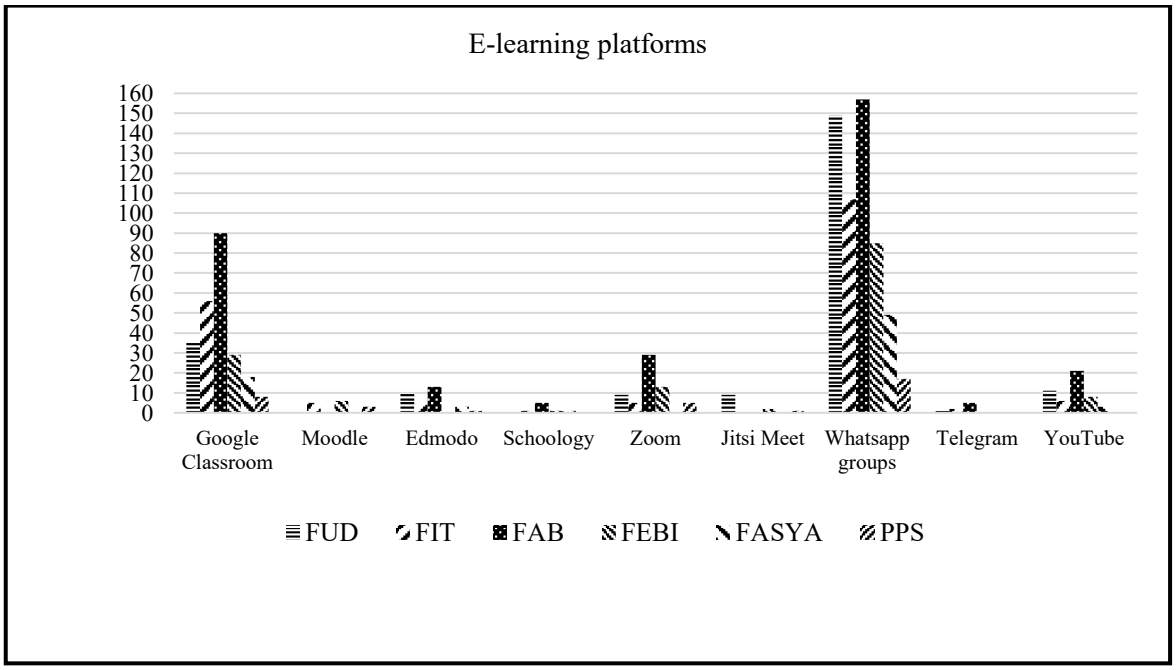

Figure 1. The graphic of using e-learning platforms

According to the table and figure, the most frequently used platform by the lecturers to conduct online teaching was WhatsApp group (57%). All faculties and graduate program lecturers consistently used WhatsApp group. After WhatsApp, the less frequently used digital platform was Google Classroom (24%), consistent in all faculties and graduate programs. The exciting finding was regarding using Moodle as an e-learning platform officially developed by IAIN Surakarta. Nevertheless, only 1.4% of the available classes use this platform. There are only three faculties, i.e., the Faculty of Education, the Faculty of Islamic Economics and Business, and the Postgraduate Program.

The lecturer used more than one digital platform to support the efficacy of their online teaching. In addition, they utilized two or three media simultaneously to enhance the effectiveness of their online classroom activities. For instance, WhatsApp group and YouTube, WhatsApp group and Zoom, Google Classroom and YouTube. Thus, it implies that the data presented in the table above do not represent the number of digital platforms used by the lecturers as media for online teaching activities. However, the table accurately shows the frequency of digital platforms used during online teaching.

The data about e-learning platforms further depict challenges and problems encountered by the lecturers during online learning. It indicates that the difficulties experienced by the institutions, lecturers, and students influence the selection of particular digital media. Some respondents wrote the challenges they encountered during the questionnaire's online teaching, but others did not. Therefore, the results were presented qualitatively by categorizing the data obtained from the questionnaire to reveal the challenges and problems of online teaching. The qualitative data analysis results about the respondents' obstacles during online learning are summarized.

3.1.1. Online learning challenges as seen from the institution's perspective

The institutional aspect of this study is related to learning policy, regulations, and the facility that the institution should prepare. The Ministry of Religion establishes the policy of implementing online learning. The university makes technical regulations that regulate the implementation of lectures using e-learning. Thus institutionally, it has a sufficient rule. This data is as stated by respondents who are also the following policymakers:

> "*University leaders made regulations related to the implementation of e-learning quickly after the Ministry of Religious Affairs policy. The rule was established by the Rector and followed by some technical guidelines. One of them is that the university leadership instructed the information technology centre to prepare LMS for online learning*" (MA)

Based on the data collected, the main challenge encountered by IAIN Surakarta is the absence of a representative e-learning platform. IAIN Surakarta has developed a platform for online teaching and learning. However, it has not been well-socialized. For example, some of the respondents stated:

> "*The University does not socialize the e-learning platform that the institution has developed, which is unreliable and difficult to access*" (JA)
> "*The e-learning platform is a new facility in learning, and this e-learning medium still requires modifications to make it easier to use. While the lectures must teach online, not all courses use campus e-learning*" (NK)
> "*The implementation of online learning is not difficult to implement. However, the campus does not yet have LMS ready to be used at the time of the COVID-19 pandemic. On the other hand, lecturers have not received enough training to utilize e-learning*" (IHR)

3.1.2. Online learning challenges as seen from the lecturers' perspective

The results of the data analysis showed that the lecturers of IAIN Surakarta encountered several challenges and problems in conducting online learning during the global pandemic. First and foremost, they were not familiar with the various e-learning platforms. Moreover, the lecturers did not have adequate time to prepare the online learning because the implementation was suddenly in response to the global pandemic. Furthermore, online education performance was in the middle of the semester. Therefore, the institution did not have sufficient time to equip the lecturers with online teaching and learning knowledge through workshops, training, and other professional development programs. The data from several interviews with the following respondents:

> "*Some lecturers are familiar with e-learning. However, lecturers generally need time to adjust to this application. While learning is impossible to stop because the sudden arrival of COVID-19 at the time of instruction is half a semester*" (FM)
> "*I want to use e-learning when the facilities are complete and ready for use. Nevertheless, I need time to learn and adjust. Unfortunately, the time to prepare yourself using e-learning is very narrow. The difficulty of developing online teaching materials is the time to short*" (MU)
> "*I prefer a platform that is easy to use in learning. There is not enough time to prepare for learning with LMS. So I use WhatsApp group as a medium of learning interaction. At the same time, I also learned how to use LMS for learning*" (MZ)

3.1.3. Online learning challenges as seen from students' perspective

From the students' point of view, dealing with online learning through digital technology is not a science rocket. However, their primary challenge is limited internet access and resources. The possible reason for this inconvenience is that the students participate in online learning from their own houses, which have different demographical environments. Some students live in the village, some are in the city, and some are in the suburbs and mountains. Moreover, the government's social distancing policy prevented students from obtaining more representative internet access. Concerning this situation, here are some students' comments:

> "*Online learning by the Google Classroom platform needs a speedy internet connection. However, some students have internet access problems since they live in disadvantaged areas. Therefore, for delivering materials and assignments, only use Google Classroom. As a discussion forum, we use WhatsApp group, which is more accessible*" (NK)
> "*Since the global pandemic, many students have returned to their hometowns, having different demographical characteristics. Therefore, some could not access particular digital learning platforms but WhatsApp. Thus, the teaching and learning activities use WhatsApp group*" (MNS)

3.2. Using a user-friendly platform for online learning

Focus group discussion (FGD) applies to explore the data about strategies to solve the learning problem. Not undertaken only as a means to obtain the required data, but the FGD also aimed at evaluating the process and implementation of online teaching and learning. The FGD was administered by involving the deans of all faculties and graduate programs, the vice dean of academic affairs as the leading sector, and all authorities in IAIN Surakarta.

During the administration of FGD, there was a discussion about suggestions, insights, criticism, and evaluation of the online teaching and learning process based on the information gathered from the lecturers. The data from the lecturers' statements through the questionnaire. Therefore, the FGD displays the summary results data. Then the FGD participants discuss conducting the final result.

The result of the data analysis found that not all respondents informed their strategies to deal with the challenges of online teaching. The possible reason is that they do not encounter obstacles or problems while implementing online instruction. On the other hand, some lecturers have adequate knowledge about E-learning platforms, and thus they are already familiar with online learning. Additionally, they used to continuously integrate digital platforms in their teachings, such as Google Classroom and WhatsApp group, as an additional medium to enhance the efficacy of their teaching activities.

On the other hand, other lecturers encountered challenges and problems during online teaching. As a result, they often move from one digital platform to another as an alternative strategy to deal with online teaching activities. The lecturers generally shifted their classroom activities from the previous platform (e.g., Google Classroom) to WhatsApp group, which is more accessible. Some of the respondents argue:

> "*Using WhatsApp to conduct online learning amidst a global pandemic seems the best strategy. It does not charge a significant internet quota; this social media application does not need speedy and consistent internet access. The primary challenge of using WhatsApp is when students download files or videos that need more internet quota and a stable network*" (IHR)
> "*The students must allocate more internet quota and stable access when using Google Classroom. Consequently, many students come to the virtual class behind time. Therefore, WhatsApp group can assist online teaching to be more effective, communicative, and efficient in solving problems*" (SL)
> "*WhatsApp groups are quite helpful in learning, and the lecturer can develop the learning interactions variedly. We can use such educational content as audio sharing, video, PowerPoint, and various materials. WhatsApp is used as a medium of interaction, while the material still utilizes multiple materials already owned by lecturers*" (MZ)

Based on the exploration and FGD, it is observable that the most frequently used strategy to deal with the challenges of online teaching is choosing the most familiar digital platform/application, user-friendly and affordable.

4. DISCUSSION

The main discussion of the present study relates to the challenges of online learning amidst the global pandemic and the strategies to deal with these challenges. Thus, this section focuses on the two

primary objectives. The first discusses the challenges of online learning, and the second concerns using user-friendly platforms in education.

4.1. The challenges of online learning

The results of data analysis revealed that the challenges of online teaching during a global pandemic are from three perspectives, i.e., institution, lecturers, and students. Above all, the institution's challenge is considered the fundamental problem since it relates to the readiness of technology and information platform that becomes the most crucial media for online teaching and learning. At IAIN Surakarta, university leaders and information technology (IT) developers have not widely socialized about the developed e-learning platform for lecturers and students. As a result, it affects the lecturers' and students' readiness to implement online teaching and learning activities since they are unfamiliar with the platform. Therefore, the availability of a digital platform to conduct e-learning is crucial for a higher education institution in twenty-first-century teaching. According to Assar [24], ICT into education can significantly enhance the efficacy of technology-based learning. Therefore, developing an e-learning system has become crucial in today's modern [25]–[27].

Online learning offers advantages [28]–[32], such as flexible learning activities and accessible learning resources. Additionally, online learning allows instructors to update the materials anytime and anywhere. Online learning can also be a strategy to boost learners' autonomy through the available digital platforms in their hands [32]. Research in Vietnam also indicates that online learning has excellent prospects in the future [33]. In developing an e-learning system, IAIN Surakarta employs Moodle platform. Moodle is an open-source software (OSS) that can be developed based on the institution's needs. The previous researches in several countries indicate the advantages and benefits of using Moodle as an online learning platform, as Kasim [34] and Isa [35] in Malaysia, Feng [36], Zabolotniaia [30], and Sun [37] in China, Ching-Hong Luk [38] in Hongkong, Peerapolchaikul [39] in Thailand, Zelinskiy [31] in Ukraine, Miller [40] in Canada, Rakic [41] in Austria, and Liu [28] in Russian.

The institutional constraint implies the lecturers and students who have not been familiar with a range of digital learning platforms. It is understandable since teaching and learning activities are in face-to-face classroom interaction before the global pandemic of COVID-19. Notwithstanding, several lecturers use digital platforms such as Google Classroom and Schoology to support face-to-face classrooms. Unfortunately, they slightly use Moodle as a digital learning platform in their teaching activities, although it is considered an online learning platform with advanced and updated features. This reasoning is because they are unfamiliar and have not tried to use them. As for the students' perspectives, the primary challenge of online learning implementation is the accessibility of internet networks and limited internet quota. This result is the same as Souza's research findings showing that the main factors that influence the sustainability of online learning include ease of internet access and socioeconomics [42]. Malaysia's research findings also offer the same thing [4].

4.2. Using a user-friendly platform to overcome the challenges

This study identifies the strategy to deal with the challenges of online learning from what the lecturers do to conduct online teaching activities. This study found that the lecturers shifted to WhatsApp group as an alternative strategy to solve the problems of online teaching activities. Using WhatsApp as an instant messenger instead of a digital learning platform is engaging. The results of data analysis further revealed that selecting an e-learning platform is practical for responding to the global pandemic. However, the choice of digital learning platforms should apply some principles, i.e., flexibility, ease to use, accessibility, and user-friendliness [34].

Although WhatsApp meets the above regulations, it does not offer specific features and facilities for online learning activities. In addition, selecting a digital learning platform should be based on Ganan's [43] criteria, namely scalability, security, and performance. Meanwhile, according to Sulasmi's research findings, it is essential to establish clear policies and an appropriate technology-based learning evaluation system to improve the learning process [2].

Utilizing this user-friendly platform is essential because it can affect its effectiveness. For example, a study at the University of Mindanao indicates that online course satisfaction is significantly related to student engagement in online learning [44]. Other research in South Africa has also shown that online learning did not increase university accessibility during the COVID-19 pandemic for students attending marginalized universities [45].

5. CONCLUSION

The present study results reveal three perspectives of online teaching and learning challenges. First, the availability of a representative e-learning platform becomes the University's primary concern as a higher

education institution. Second, from the lecturers' point of view, the institutions' e-learning platform (e.g., Moodle) has not widely been socialized. Additionally, most lecturers are unfamiliar with various digital learning platforms that can be used as media for online teaching and learning activities. Third, limited internet access and resources are the main problem of online learning activities based on the students' perspectives.

The strategy performed by the lecturers is to select familiar, user-friendly, affordable digital platforms. The way to make this choice is to provide alternatives to the students and then agree with the majority choice. Another way is to try several platforms for online learning and then analyze the advantages and disadvantages of each. Most lecturers chose WhatsApp groups to overcome the barriers of online teaching activities.

This platform has been used in various ways so that learning runs effectively and efficiently. Thus, this research contributes to overcoming online learning obstacles with a user-friendly platform. Because this platform is not for education, its effectiveness depends on users' creativity. Teachers can share materials, asynchronous discussions, learning interaction, and evaluate learning with this media. Furthermore, this media can be optimized by sharing videos and URL links.

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