

Mextesol

by Daniel Ginting

Submission date: 02-Nov-2021 02:24PM (UTC+1100)

Submission ID: 1575062082

File name: 20._Mextesol_Teacher_voice.pdf (1.05M)

Word count: 8875

Character count: 49242

Teachers Voice: Their Experiences in Emergency Remote Teaching amid COVID-19 Pandemic¹

Daniel Ginting², Universitas Ma Chung, East Java, Malang, Indonesia

Ross Woods³, Worldwide University, Los Angeles, CA, USA

Kartika Nuswantara⁴, Institut Teknologi Sepuluh Nopember (ITS) Surabaya, Surabaya, East Java, Indonesia

Ounu Zakiy Sukaton⁵ & Vincentius Valiandy Jiuangga⁶, Universitas Ma Chung, Malang, East Java, Indonesia

Abstract

The present study describes the experience of Indonesian teachers coping with Emergency Remote Teaching (ERT) during the COVID-19 pandemic. An understanding of their experiences can help teachers better prepare for ERT in the future. Unlike ERT practices in other countries during the pandemic, there is still a lack of evidence of ERT practices in Indonesia. This descriptive study aims to interpret teachers' experience in managing their ERT. Online questionnaires were distributed to 36 Indonesian university lecturers and 40 Indonesian high school teachers. The instructors shared their experience of ERT practices during the pandemic. This study aims to examine their readiness to cope with ERT. The data show that teachers demonstrated their readiness to host ERT in the way they perceived learning management systems (LMS), developed modules, deployed feedback and comments, and scheduled screen time. Teachers' ERT strategies did not hinder students' successful learning as teachers maintained students' engagement in online learning through their knowledge of basic technology, such as choosing a LMS, providing encouragement through feedback, and producing media such as video lessons. Moreover, teachers could manage their screen time without negatively affecting their own mental and physical health. Finally, further research could seek data from a wider range of participants to obtain a wider picture of teachers' experience in Indonesian ERT.

Resumen

El presente estudio describe la experiencia de los profesores indonesios que se enfrentan a la enseñanza remota de emergencia (ERE) durante la pandemia de COVID-19. Entender sus experiencias puede ayudar a los maestros a prepararse mejor para ERE en el futuro. A diferencia de las prácticas de ERE en otros países durante la pandemia, todavía hay una falta de evidencia de las prácticas de ERE en Indonesia. Este estudio descriptivo tiene como objetivo interpretar la experiencia de los profesores en la gestión de su ERE. Se distribuyeron cuestionarios en línea a 36 profesores universitarios indonesios y 40 profesores de bachillerato indonesios. Los instructores compartieron su experiencia con las prácticas de ERE durante la pandemia. Este estudio tiene como objetivo examinar su preparación para hacer frente a ERT. Los datos muestran que los maestros demostraron su disposición para realizar ERE en la forma en que percibieron los sistemas de gestión del aprendizaje (SGA), desarrollaron módulos, implementaron retroalimentación y comentarios y programaron el tiempo de pantalla. Las estrategias de ERE de los maestros no obstaculizaron el aprendizaje exitoso de los estudiantes, ya que los maestros mantuvieron la participación de los estudiantes en el aprendizaje en línea a través de su conocimiento de la tecnología básica, como elegir un SGA, brindar estímulo a través de comentarios y producir contenido, como lecciones en video. Además, los profesores pudieron gestionar su tiempo frente a la pantalla sin afectar negativamente su propia salud mental y física. Por último, la investigación adicional podría buscar datos de una gama más amplia de participantes para obtener una imagen más amplia de la experiencia de los profesores en la ERE de Indonesia.

Introduction

The outbreak of COVID-19 in December 2019 led the World Health Organization (WHO) to declare a global pandemic in March, 2020 (World Health Organization, 2020). Various attempts were made to prevent the spread of the virus, and authorities in most countries tried to make people stay at and work from home. Public and official places, such as markets, malls, offices, and schools, were suddenly closed. This unexpectedly forced all levels of education to run distance education and to teach remotely online.

Like other countries during the pandemic, Indonesian schools relied heavily on the internet to mediate teaching and learning. Online education is now common in the major cities, especially in Java and Bali, although internet learning is not always possible in remote areas on other islands. The White Paper 2010 by the Ministry of Communication and Information (*Kementrian Komunikasi dan Informatika*, 2010) stated that the percentage of households with an Internet connection increased from 5.58 percent to 8.56 percent

¹ This is a refereed article. Received: 17 November, 2020. Accepted: 17 May, 2021.

² daniel.ginting@machung.ac.id, 0000-0003-4180-127X, Corresponding author.

³ ross.woods1954@gmail.com, 0000-0003-2622-4814

⁴ tika@mku.its.ac.id, 0000-0003-1152-9834

⁵ ounu.zakiy@machung.ac.id, 0000-0001-9642-3603

⁶ Vincentius.valiandy@machung.ac.id, 0000-0003-2873-1174

in 2007-08. Rohman and Bohlin (2011) mentioned that the internet connection had a penetration rate of 9.95 percent in 2008. The report also states that except for the Moluccas and Papua, the majority of internet users have a DSL connection (approx. 60 percent), while 30 percent of users still use dial-up connections. These figures, however, do not include the widespread adoption of smartphones, which normally have access to the internet. In some remote areas, students must go to higher locations just to get internet signal. In West Nusa Tenggara, a remote area, teachers generally prepare printed teaching materials and then ask parents and volunteers to pick them up and give them to the children. After the children have finished their assignments, the parents and volunteers turn them over to the school or place where the teachers are waiting.

Mr. Nadiem Makarim, the Minister of Education and Culture, endeavored to overcome the challenges of implementing education during the pandemic by using television to broadcast educational programs, so that students in remote areas could continue to learn. In addition, the Minister cancelled national examinations, and schools now determine graduations based on portfolios of data, such as report cards and other credible assessments. Schools were also authorized to use special funding during the pandemic.

The unexpected pandemic created an emergency, in which educators suddenly had to set up online modules and teach students through digital platforms. As mentioned by Balakrishnan (2020), Indonesia and three other Asian countries (i.e., Malaysia, Singapore, and Thailand) faced the challenges posed by the pandemic in similar ways. Shifting education from face-to-face teaching to online teaching was the main immediate challenge, regardless of the lack of infrastructure and teachers' unpreparedness for hosting remote classrooms. Moreover, rural children had already been disadvantaged, and existing education gaps have certainly been exacerbated. Similarly, all schools and universities in India were completely closed due to the outbreak, and shifting to online systems became the only way to offer education.

Hodges et al. (2020) and Nelson and Murakami (2020) contrast this to online courses that are initially planned and designed for virtual delivery. O'Keefe et al. (2020) also distinguish between emergency remote teaching (ERT) and online classes that have been prepared as online education from the start. Under normal circumstances, cross-functional teams design and develop high-quality online courses over a period of months or years. In emergencies, however, module design and online class delivery are very different, and the resources available to students and teachers are very limited.

Despite being an emergency reaction, online teaching is becoming the new norm as people get accustomed to a new way of life. Education might also shift from fully offline to hybrid delivery, although a hybrid mode is no longer new in some countries. Countries that had previously relied mostly on offline learning and had to move online during the emergency will need to be better prepared to host education either fully online or in blended mode. Middle East countries, for example, are ready to transform emergency learning into prepared and well-designed remote teaching and online learning (Mohammed et al., 2020). In the emergency reaction, Indonesia committed to online learning due to a sudden, complete closure of schools. This is a quite interesting phenomenon, in which schools suddenly had to shift to online teaching no matter the teachers' readiness. It is at the same time challenging for researchers to seek evidence from the field about how such emergency remote learning takes place where online learning is still new to numerous education practitioners. Gunder et al. (2020), Teras et al. (2020), and Chen et al. (2020) have said that teachers were often seen to be the major parties to take this inevitable challenge. There are several studies on the practices of ERT hosted under normal situations, where teachers hope to provide education even though they can only reach their objectives through ERT (Meylani et al., 2015). During the pandemic, it was the only possible way to keep schools operating. Whether or not they were ready during the pandemic, teachers and education practitioners had to provide remote teaching and keep students learning. They needed feedback and input to improve their ERT and to be better prepared for the future. Some scholars (Purushotham et al., 2020; Rahim et al., 2020; Schlesselman, 2020) have studied how ERT is hosted during the pandemic in countries like India, Pakistan, and a developed country like the USA. Evidence is still lacking on how ERT has been done in Indonesia. Through a descriptive survey, this study aims to describe the situation in the field where ERT has taken place by investigating the ways, in which teachers have reacted to this new challenge, and their strategies for preparing ERT and coping with online teaching and learning processes. Teachers' voices serve as the main data of the present study since they have been directly involved.

Review of Related Literature

ERT is an approach to providing education in an emergency. In ERT, the teaching and learning process is done outside the face-to-face classroom for reasons, such as wars, local conflicts, and natural disasters (Bozkurt & Sharma, 2020).

In Afghanistan, for example, teachers prepared materials on DVDs and used radio to deliver lessons while students studied in relatively safe locations (Hodges et al., 2020). ERT is currently a hot topic because of the spread of COVID-19, which in March 2020 WHO announced to be a global pandemic (Nikpouraghdam et al., 2020). In response to the WHO's announcement, most educational institutions across the world simultaneously switched to online classes, which was feasible due to the widespread support of regional technology infrastructure. Online classes, however, were not always an option in other areas where the community could not afford technological devices and internet connections. In practice, they used tools that were not necessarily online. Most online classes in Indonesia during the pandemic were ERT instead of carefully planned online courses.

The massive use of internet-based education made people associate ERT with online classes. In fact, planned online courses are clearly different from ERT (Mohammed et al., 2020). According to Hodges et al. (2020), effective online courses are thoroughly planned and simulated before they are implemented. Many of these online courses are evaluated and revised during implementation. Most of these qualities do not exist in ERT. Using online tools to conduct teaching and learning activities should be approached with caution (Bozkurt & Sharma, 2020). ERT is simply an attempt to bridge the distance between teachers and students by using convenient and available means.

ERT is temporary and is based on the assumption that education will revert to face-to-face classes when the crisis has passed. In an emergency, materials are developed or collated with many limitations, such as limitations in support, Information Technology (IT) personnel, time, resources, and funds (O'Keefe et al., 2020). Several studies (Chen et al., 2020) mention problems, such as dissatisfaction with digital platforms, inequalities, social and psychological stress (Teräs et al., 2020), and mental health problems (Gao et al., 2020).

Consequently, teaching needs to reflect the idealism of a better teaching and learning process. Those overseeing emergency distance teaching or re-engineering distance education must collaborate with different stakeholders to offer better solutions. During the crisis, content delivery was not the only issue of concern; learner support was also significant. In fact, teaching might be of secondary importance. Students might not remember what was taught and the transfer of satisfying educational content, but they will probably remember how they felt during this difficult time (Schlesselman, 2020).

Like any other countries, Indonesia struggles to keep education well served and maintained through hybrid or full online learning. The Indonesian Government has doubled the support to make online programs feasible. Yet, like other countries, such an emergent practice is quite shocking as they have suffered from lack of readiness. Teachers play a central role in providing remote teaching and ERT will probably suffer most from teachers' unreadiness. Unfortunately, evidence from the field uncovering such daunting facts from the teachers' viewpoint are hardly found. By taking their voices into account, in this study, we portray the reactions of teachers toward the practice of ERT under the pandemic in Indonesia.

Method

Research Design

This is a descriptive study that surveyed two groups of teachers during the transition to full online learning. Its purpose was to elicit data on teachers' perceptions of their experiences hosting remote teaching and online learning during the pandemic. Some aspects include the use of LMSs in online learning, module content and development, the ways in which they gave students comments and feedback, and their use of screen time. An LMS is "a software designed to provide a range of administrative and pedagogic services related to formal education settings (e.g., enrolment data, access to electronic course materials, faculty/student interaction, assessment)" (Organisation for Economic Cooperation and Development, 2005).

Participants

The participants were a group of thirty-six university lecturers and a group of forty high school teachers from different regions in East Java, Indonesia. They were selected as participants based on two factors. First, participants were teachers either from high schools or universities that ERT and online learning during

the pandemic and, second, they were registered as participants in workshops that were held on the practice of emergency online learning that would be transformed into prepared and well-designed online learning. The data were collected at two different workshop events. The first was held on July 1, 2020, and another was held on July 10, 2020.

Data Collection Procedures and Analysis

To collect data, a questionnaire written in Indonesian was distributed online using Google Forms (See Appendix). The link was shared with the participants through email, Whatsapp and Instant Messenger from July 1-30, 2020. They had to complete the questionnaire and submit it before the workshop started. Questions elicited information on their experience with ERT and online learning before joining the workshop. Using open-ended questions, the questionnaire was designed to enable teachers to respond easily and quickly. To triangulate the collected data, the researchers hosted an online videoconference interview with participants.

In addition, online questionnaires were also distributed to participants to self-assess their performance during their online classes. These included aspects, such as LMS mastery, completeness of online modules, video preparation, time commitment, and feedback facilitation. The data analysis was done by classifying the data into two groups, namely the data received from university lecturers and the data received from high school teachers. This enabled analysts to compare the two groups to see any differences and trends. Responses were also classified based on each item in the questionnaire. The writers then used the literature and previous research findings to describe the phenomena of ERT as employed by teachers in Indonesia.

Statistical Validation

Data from the self-assessment questionnaires were compared using an independent samples t- test, and conducting a normal distribution test. As shown by Table 1, the significance value of Shapiro-Wilk was 0.247, which was higher than 0.05. This indicated that the data were normally distributed.

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Performance	.112	84	.011	.981	84	.247

Table 1. Tests of Normality

Based on the independent t-test calculations by SPSS software, it was found that the sig (2-tailed) value of 0.00 was smaller than 0.05, which meant that the mean of lecturer performance differed significantly from the mean of teachers' performance. The mean of lecturer performance (14.91) was slightly higher than that of the teachers' (12.64). This result indicated that the lecturers performed ERT better than the teachers.

	Educators	N	Mean	Std. Deviation	Std. Error Mean
	Lecturers	36	14.9167	2.51140	.41857

Table 2. Mean comparison between high school teachers and lecturers

Findings and Discussion

The Use of Learning Management Systems (LMS)

Choice of LMS

A question was asked about the choice of LMS that lecturers and teachers used to teach online classes. Not surprisingly, they had a wide variety from which to choose. As shown in Figure 1, the majority of lecturers (83.3%) chose *Microsoft Team* as the most popular LMS, in part because they were accustomed to communicating with students via email using *Microsoft Outlook*. The institution pays for a Microsoft license and has a policy of registering all members of the academic community as Microsoft users.

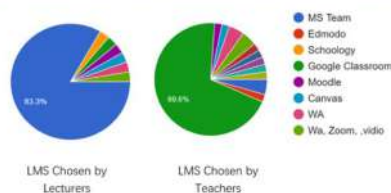


Figure 1. Most used LMSs

On the other hand, the majority of teachers (69.6%) chose *Google Classroom* as their LMS and gave several reasons for this choice. They said it was easy to use, it had a relatively simple navigation, and it was easy to create classes, invite students to join online classes, make announcements, and set assessments. In addition, it was integrated with several *Google Chrome* extensions, including *G-Suite*, *Google Drive*, *Google Form*, *Loom*, and *Screencastify*.

The results show that the university lecturers and schoolteachers had already chosen LMSs. It implies that they could show initiative to use any technology that they chose and would do so based on perceived usefulness and ease of use. This validates the previous findings from Joo et al. (2016) that the ability to perceive usefulness and ease-of-use can be significant predictors of positive behavior, in which less complex systems improve the value of e-learning services. This also implies that teachers and lecturers can act autonomously to choose a system, despite the licensing options provided by their institutions. This reflects the former finding that greater teacher initiative leads to greater success in online system education (Sun & Chen, 2016).

One LMS for all

LMSs are very effective tools that enable teachers to transform most offline learning processes into online learning. Teachers can produce and combine course content, convey learning objectives, adjust content, monitor learning progress, and create customized forms for student assessments. They are also the means through which teachers host either synchronous or asynchronous meetings with their distance students.

The present study seeks to see how teachers used the available LMSs to design and integrate their ERT during the pandemic. Of the various available LMSs, every institution (and many individuals) have specific preferences. As reported by Organisation for Economic Cooperation and Development (OECD) in 2005 (Organisation for Economic Cooperation and Development, 2005) through a survey of its member countries, most countries have open choices for varied LMSs (including Canada, Australia, and UK), but the people or the institutions prefer to choose specific LMSs. For example, Canadian institutions tended to prefer *webCT*, and Australians that had formerly used *Blackboard* currently prefer to use *webCT*. In the same vein, UK predominantly uses two vendors (OECD, 2005).

To seek information about teachers' experience with LMSs, the next question asked teachers whether adopting one LMS for one institution would accommodate effective online learning. As depicted in Figure 2, there were two different opinions between lecturers and teachers.

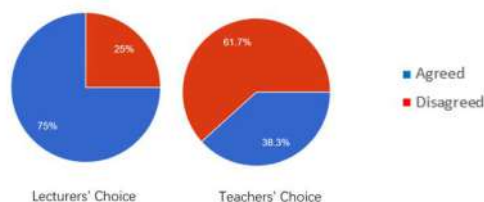


Figure 2. The Importance of using one type of LMS

As reported through the questionnaire, 75 percent of lecturer-respondents agreed to use one LMS for the institution while the other 25 percent disagreed. Lecturers reported that the use of LMSs was not new because blended learning had been hosted far before the pandemic. In open-ended interviews with researchers, the majority of lecturers reported the importance of using only one LMS due to the practical considerations of managing online classes, and reported that students had often complained during the previous semester because they were overwhelmed and could not complete their assignments. The cause was not the number of assignments, but that lecturers used a variety of LMSs. Students complained about updates in the schedule for handing in assignments, and that not all lecturers emailed notifications about assignments to students. While lecturers had provided schedules of activities and assignments at the beginning of classes and again in each new module, students admitted that they rarely wrote the schedule in separate notebooks but expected the notification to be delivered automatically. Had the entire institution used only one LMS, students would have tended to assume that the LMS would automatically collate information about assignments and inform them.

Unlike lecturer respondents, most teachers stated that one LMS for all was not effective. As shown in Figure 2, 60.4 percent of schoolteachers did not agree while there was 39.6 percent who agreed. Interviews helped to unravel their rationale for these choices. Teachers made their choices based on several factors. First,

most had no online teaching experience and had never used an LMS before. Teachers were forced to teach online by the pandemic and received strict orders from government. They hardly found problems whether one or more LMS were used, and students never complained about LMSs. Second, teachers were forced to prepare for classes in a short period, so they experimented with different kinds of LMS, resulting in several options. Third, some were confused about the roles of LMSs and *Instant Messenger* services, with some thinking they were the same kind of software. The teachers assumed that it was important to combine an LMS and an *Instant Messenger*. The latter was used not only to teach students synchronously but also to remind students of the tasks that had been scheduled in the LMS.

Like other countries, Indonesia is open to varied LMS vendors, and this opens choices to the users, including teachers. In the survey, lecturers indicated that they preferred an institution-wide LMS so that the whole university had a uniform system. In contrast, teachers used varied LMS even in the same school, because the school did not support a single vendor. The lack of institutional policy requiring all staff of the institution to use the same LMS is consistent with the lack of institutional support for instructors to develop LMS skills (Luck et al., 2012). It also indicates that these institutions did not use the automated record-keeping systems normally found in modern LMSs. The idea of combining an LMS with an *Instant Messenger* has much to commend because their different features can complement each other quite well. While the LMS enables instructors to enhance the learning process such as delivering content, handling registering courses, managing course administration, tracking learning progress, conducting assessment and reporting students' learning outcomes, the *Instant Messenger* helps to strengthen social presence, such as giving motivation the students to learn and offering short explanations of the tasks. Ideally, institutional support is mandatory, especially in the attempt to support teachers and students in promoting online learning. Providing a single LMS would accommodate uniformity in the flow of students' learning experience. One LMS in one institution would enable instructors and the systems to make constant contact with the students to nurture relationships and maintain the flow of the learning experience. This finding is in accordance with Khan et al. (2017) who confirmed that students who know an LMS show more interest in its use and promotion.

The present study explains why respondents preferred using a single LMS for one institution. It was claimed that the use of various LMSs caused students problems, such as late submission due to lack of email notification in some LMSs, different navigation for different LMSs, and other technical problems that hampered the flow of remote teaching and online learning. In sum, an institution-wide use of LMS is preferable as uniformity would diminish technical problems in online learning.

Module Development

Module Contents

Another question in the survey addressed the development of modules for online learning. In this sense, a module is a series of learning activities that the teacher prepares to achieve one or more learning objectives through the LMS. A module usually consisted of several components, such as teaching materials (e.g., videos, infographics, websites, and PowerPoint slides), discussion assignments, and project assignments. Both lecturers and teachers had similar views about module content; they both agreed that the important components were teaching materials, learning objectives, video lessons, discussion assignments, and project assignments.

As an overview, these assumptions seem to be justified. However, the analysis of module effectiveness depends on the role and effectiveness of each component, some of which are examined more closely below.

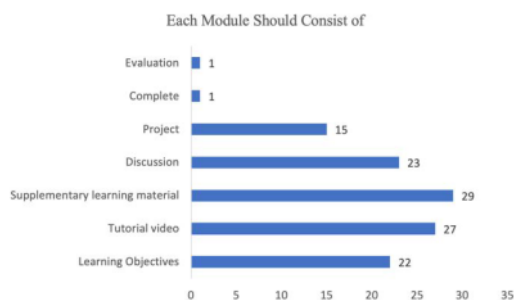


Figure 3. Lecturers' perspective on the content of learning module

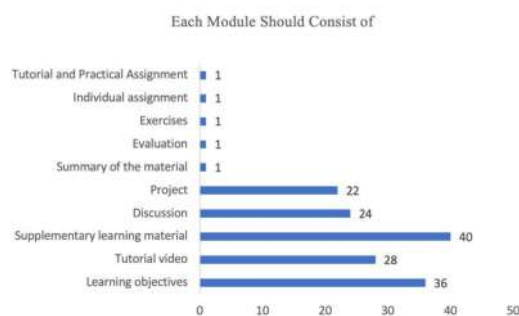


Fig 4. Teachers' perspective on the contents of the learning model.

The figures depict content that is commonly present in modules. Projects, discussions, supplementary learning material, tutorial videos and learning objectives are deemed favorable to help teachers and lecturers to present the target materials online. Those selected module contents accommodate autonomous learning that at the same time, nurture student metacognition (Ginting et al., 2020; Mısır et al., 2018). Using tutorial videos, students learn how to do and work with the materials provided online, learn independently, and use problem-solving strategies. Besides that, informing students of learning objectives gives them guidelines to know what and how they are supposed to learn. Additionally, the selected content stipulates the development of students' critical thinking skills (McClellan, 2016). By stimulating students to participate in discussions and to accomplish projects, students can navigate opinions of peer students and feedback from teachers.

The present study confirms several research findings that have already explored some desired characteristics for good online learning materials and modules. By far the most important of this finding is due to the fact that teachers and lecturers know very well how to choose content for their modules to accommodate students' self-regulated learning, self-efficacy, and critical thinking.

Video Lessons

Three questions were used to elicit lecturers and teachers' perceptions of video lessons. How long should they be? Should they show the face or figure of a person? Should they have background music? These questions are explained in figure 5, 6 and 7 in the sections below.

Duration of Video Tutorials

As depicted in Figure 5, half of the lecturers (50 percent) stated they used longer video lessons than the majority of teachers (58.7 percent). Lecturers thought that 11-15 minutes was the ideal duration for videos. Meanwhile, teachers argued that the ideal video has a duration of 5-10 minutes.

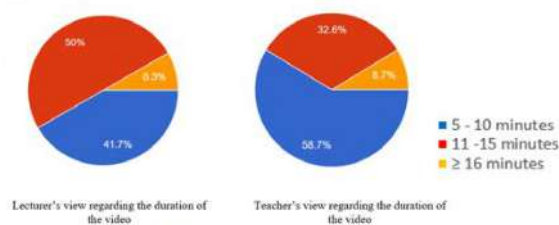


Figure 5. Duration of tutorial videos

Interviews with lecturers revealed that the choice of videos with a duration of 11-15 minutes was simply based on habit. In the previous semester, they had used videos of that duration and observed that students never complained about them. In fact, some lecturers added a few minutes to the duration of videos to explain more difficult topics. On the other hand, teachers reported that creating video lessons was a relatively new experience. They were less certain about what they should convey in long videos and were unsure of making even short videos. They preferred to make shorter videos with a duration of 5-10 minutes.

The duration of video lessons related to content difficulties and student engagement. Guo et al. (2014) show that student engagement depends on the video's ability to convey content. The empirical evidence was that students watch shorter videos. They reviewed session data of student online engagement. They concluded

that students only watch, on average, 2 to 3 minutes of each video lesson, regardless of the video's length, and noticed that the median engagement time is at most 6 minutes, regardless of total video length. They also stated that students often did not watch the video longer than 9 minutes. The shortest videos (0–3 minutes) were the most engaging and they had much less variance than all other groups; 75% of the sessions lasted more than three quarters of the length of the video (Guo et al., 2014; Schlesselman, 2020).

Guo et al. (2014) also found that students lose attention after nine minutes, but they used a different argument about duration of video lesson and student engagement. In a study by Berg et al. (2014), students reported that they preferred shorter videos, but thought that they could benefit from videos of up to fifteen minutes in length. If their populations are comparable, this suggests that students believe they learn effectively from longer videos although the session data indicates that they tend not to view the whole video. Thus, durations for video lessons can be relatively varied, yet ideally, they should be short and not exceed 15 minutes. Teachers and lectures can manage the durations of video lesson within a tolerable range for keeping the students engaged.

Presence of Faces or Figures

Another question asked whether it is necessary to create video lessons featuring one's face or figure (e.g., the teachers) in the video lessons. Respectively, lecturers (63 percent) and teachers (61 percent) agreed that presenting faces or figures on video lessons was impactful (Figure 6).

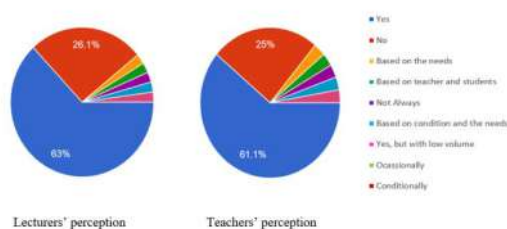


Figure 6. Perceptions toward the presence of faces/figures on video

This confirms Guo et al. (2014) who considered this important factor. They claimed that some videos showing the instructor's face were more engaging than those videos that did not show the instructor's face. Students reacted differently to different kinds of talking head videos: "Khan-style," videos of live classroom lectures, studio recordings, and office desk close-ups. The overall trend, however, was that seeing the instructor's face increased student engagement. In contrast, some lectures and teachers prefer not to show faces or figures in the video because they want to emphasize content presentation and believe that the presence of faces or figures could distract students' attention.

Background Music for the Video Lessons

It was generally perceived that music is relaxing and entertaining and increases students' motivation. Consequently, this study sought to examine whether background music was useful in video lessons. From the teachers' point of view, background music in video lessons, like music in common, helped students to relax and enabled them to more easily digest the input of video lessons. This reminds us of Krashen's (1985) affective filter hypothesis that support the intake of a comprehensible input. Almost 70 percent of teachers agreed to use music in video lessons. In contrast, 46.8 percent of the lecturers preferred to exclude background music because they thought it would distract from the delivery of input, while only 36.2 percent of them chose to include background music in video lessons (see Figure 7).

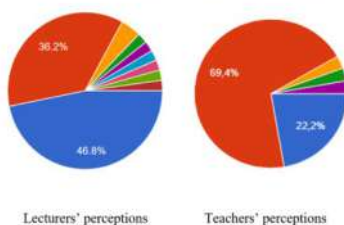


Figure 7. Perceptions toward background music for video lessons

Many studies from varied disciplines claim the important role of music in education, and they also claim that music can help and improve learning. In higher education, for example, Ölgren (2012) demonstrates how music can enhance creativity in designing in architecture. He inserts music into a graphic design application so music flows along with the work graphic design. He was surprised by the result that creativity is better nurtured when music is embedded compared to the ordinary application that does not use music. In addition to this study, music used as a tool to brainstorm can improve interpersonal communication (Eichorn et al., 2020). Coleman (2017) uses music to stimulate responses from children with visual impairment. The habit of listening to music while studying can also help teen learners maintain their concentration and even improve their academic performance (Kumar et al., 2016).

On the contrary, O'Hare (2011) warned that music can hinder successful learning in elementary school age children. By using music with vocal, instrumental, and no music background in her experiment, she drew conclusions on the effects of background music on children's memory task performance. Overall, the findings are consistent with other research that formerly agreed that background music, instrumental in particular, can improve performance in writing while reading and thinking, and in some degrees, it helps children to focus and better solve in math problems. Yet only instrumental music increased cognitive performance, while vocal background music disturbed performance more than no music.

Thus, those 36.2 percent of lecturers and 69.4 percent of teachers who agreed with background music in video lessons are assumed to have understood that it is only instrumental music.

Navigation to Give Comment and Feedback

Feedback is viewed as difficult in higher education despite its role and value as an essential element to improve students' learning. Two surveys conducted in the UK (Higher Education Funding Council for England, 2011) and in Australia (James et al., 2010) approved the above statement (Mamoon-Al-Bashir et al., 2016). Consequently, the present study aims to seek evidence on respondents' views of feedback.

Figure 8 describes how respondents valued feedback in the process of remote teaching and online learning. The majority of lecturers (54.8%) and the majority of teachers (64.4%) expressed willingness to do so. Both groups argued that discussion is an important element in online learning activities. They see it as a way to monitor student activity and included it in each module.

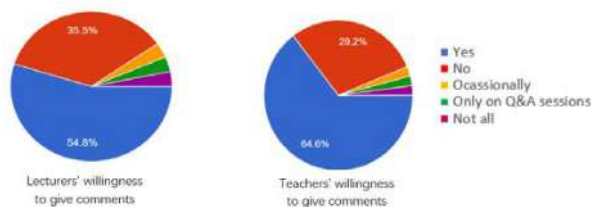


Figure 8. Respondents' willingness to give feedback in online learning

Of all perceptions so far, this is more a statement of demonstrable fact. In behavioristic education, it is fundamental that focused feedback, given sooner rather than later, effectively promotes learning. Despite realizing the importance of feedback, it is inevitably true that giving feedback can be difficult. This could be the reason why some teachers do not give feedback or comments on the students' work. Mamoon-Al-Bashir et al. (2016) expresses the view that it is high time for teachers to rethink about the feedback process; they should continue to give comments in passing from traditional to modern, suggesting that teachers use modern ways of providing feedback and adopt e-feedback techniques, such as email feedback, audio and/or video feedback, and screencast.

Screen Time

Screen time refers to the duration of time that the teacher spends tutoring through a digital screen, providing feedback, viewing and checking student work, and working on an electronic device, such as a computer, cellphone, or tablet. It is the last concern for which the present study sought evidence.

It has long been acknowledged the amount of time spent working on a computer can affect both physical and mental health (Coles-Brennan et al., 2019; Helander et al., 2020; Stiglic & Viner, 2019). Excessive screen time can cause eyestrain that leads to visual difficulties and other physical discomforts, including tearing, tired eyes, blurred vision, burning sensations, redness, double vision, and general eye fatigue. It can also cause other physical problems such as stiff neck, headache, backache, and general fatigue. Coles-

Brennan et al., (2019) conducted a study in 2016, and identified that adult Americans viewed digital media for an average of 5.6 hours per day. The devices were mobile phones (3.1 hours), desktops and laptops (2.2 hours), and other devices, such as game consoles (0.4 hours). In 2016, 78 per cent of adult Americans owned computers, 77 per cent owned smartphones, 51 per cent owned tablets, and 22 per cent owned e-readers. This confirmed other studies that had observed that an increased use of digital devices was correlated with an increase in digital eyestrain symptoms. This study indicates that the safe duration to work in front of computer is less than 2.2 hours.

The last question sought information about teachers' screen time. As exhibited in Figure 9, both lecturers (51.5 percent) and teachers (43.8 percent) allotted between 31-60 minutes per day to working online. The allotted screen time was distributed and managed to cover several workloads. Teachers not only delivered lessons online but also monitored students' activities outside online meetings, worked with students' assignments, quizzes, and tests, and administered feedback and comments to every task submitted by the students. This research found that Indonesian teachers do not spend long durations working online and work within safe limits of screen time.

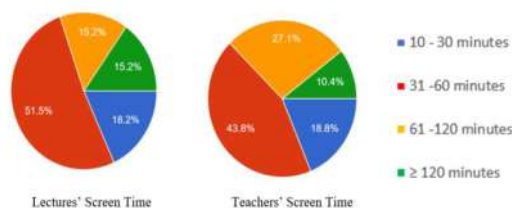


Figure 9. Screen time allotted by lecturers and teachers

Conclusions and Suggestions

The present study describes the experience of Indonesian teachers coping with ERT. This is contrasted to established, prepared online learning that enables teachers to be better prepared to host remote teaching (O'Keefe et al., 2020). The data indicate that Indonesian teachers were able to manage remote teaching under emergency conditions.

Teachers showed readiness to manage their ERT as seen in their reactions toward their choice of the most suitable LMS, and their ability to develop modules for online teaching, video making, safe screen-time, and their reactions to other elements needed to make online learning attractive (i.e., background music in videos). The majority of the lecturers and teachers could emphasize the parts of content that should receive most attention. Both lecturers and teachers knew how and why to deploy specific content to maintain student engagement. When employing video lessons in their modules, they considered the duration of video clips and students' safe use of screen-time. They also seemed to know when and how to show their face/features in the video, and how to use background music, so that video lessons could motivate students, and how to limit elements that could hinder successful online learning.

In addition, the majority of lecturers and teachers in this study could give feedback and comments to the work that students had submitted. Their average amount of screen time spent teaching implies that they can effectively manage their time working online at home while also performing other household tasks. The average amount of screen time indicates that they can save themselves from emotional and physical symptoms that usually hamper people who fail to manage their screen time.

Research shows that teachers are not prepared or ready to host ERT (Schlesselman, 2020). However, the present study did not find this to be true of its participants. Despite the sudden closure of schools and universities, it is admitted that readiness of the teachers, as well as lecturers in Indonesia schools and universities is not the major barrier to effective remote teaching. Prior to the pandemic, teachers and lecturers in Indonesia had seen or used hybrid learning modes, so they had no problem suddenly shifting from offline to online teaching. Moreover, government support enabled them to make the change. In brief, teachers were not the only party to succeed in ERT in the current situation where the pandemic forced the complete closure of all schools and took teachers and students away from face-to-face contact. The availability of reliable internet connections, strong technology, and sufficient government funding was necessary to the successful practice of ERT. Exposing teachers to varied learning modes is also necessary, so that they can quickly manage emergency situations and keep the educational processes running.

The present study has some limitations despite its positive evidence. It was conducted by involving participants inside the circles of the researchers, so the findings can only represent the small groups involving in ERT. Due to the pandemic, the researchers did not have freedom to reach participants and investigate their real-time activities in hosting remote teaching although it would have been a way to triangulate the data.

Finally, it would be advisable for future research to take place in a wider population, so that it could portray a broader picture of teachers' experiences. It also should involve more data collection instruments and procedures in order to triangulate conclusions, ensure greater data reliability, and give more confidence in data saturation.

References

- Balakrishnan, P. (2020) Education in the age of COVID-19: Educational responses from four Southeast Asian countries. *International Studies in Educational Administration (ISEA)*, 48(3), 102-109. <http://cceam.net/wp-content/uploads/2020/10/ISEA-2020-48-3.pdf#page=108>
- Berg, R., Brand, A., Grant, J., Kirk, J., & Zimmermann, T. (2014). Leveraging recorded mini-lectures to increase student learning. *Online CI@ssroom*, 14(2), 5-8.
- Bozkurt, A., & Sharma, R. C. (2020). Emergency remote teaching in a time of global crisis due to coronavirus pandemic. *Asian Journal of Distance Education*, 15(1). i-vi. <http://www.asianjde.com/ojs/index.php/AsianJDE/article/view/447>
- Chen, T., Peng, L., Yin, X., Rong, J., Yang, J., & Cong, G. (2020). Analysis of user satisfaction with online education platforms in China during the COVID-19 pandemic. *Healthcare*, 8(2), 1-26. <https://doi.org/10.3390/healthcare8030200>
- Coleman, J. M. (2017). The use of music to promote purposeful movement in children with visual impairments. *Journal of Visual Impairment & Blindness*, 111(1), 73-77. <https://doi.org/10.1177%2F01454482X1711100107>
- Coles-Brennan, C., Sulley, A., & Young, G. (2019). Management of digital eye strain. *Clinical and Experimental Optometry*, 102(1), 18-29. <https://doi.org/10.1111/cxo.12798>
- Eichorn, N., Caplan, J., Levy, M., Zarn, M., Moncrieff, D., Sposto, C., & Hoffman, J. E. (2020). Breaking the ice: Use of music improvisation to facilitate interprofessional communication. *Journal of Interprofessional Education & Practice*, 21. <https://doi.org/10.1016/j.xjep.2020.100379>
- Gao, J., Zheng, P., Jia, Y., Chen, H., Mao, Y., Chen, S., Wang, Y., Fu, H., & Dai, J. (2020). Mental health problems and social media exposure during COVID-19 outbreak. *PLOS ONE*, 15(4): <https://doi.org/10.1371/journal.pone.0231924>
- Ginting, D., Djihadono, P. I., Woods, R., & Lee, D. (2020) Is autonomous learning possible for Asian students? The story of MOOC from Indonesia. *Teaching English with Technology*, 20(1), 60-79. <https://tewtjournal.org/?wpdmact=process&did=NjAyLmhvdGxpbnms>
- Guo, P. J., Kim, J., & Rubin, R. (2014). How video production affects student engagement: An empirical study of MOOC videos. *Proceedings of the First ACM Conference on Learning @ Scale Conference, March 4-5, 2014, Atlanta, Georgia, USA.*, 41-50. <https://doi.org/10.1145/2556325.2566239>
- Helander, M. E., Cushman, S. A., & Monnant, S. (2020). A public health side effect of the coronavirus pandemic: Screen time-related eye strain and eye fatigue. *Population Health Research Brief Series (No. 24)*. https://surface.syr.edu/cgi/viewcontent.cgi?article=1049&context=lerner&preview_mode=1&z=1612816418
- Higher Education Funding Council for England. (2011). *The National Student Survey: Findings and Trends from 2006-2010*. http://dera.ioe.ac.uk/2560/1/11_11.pdf
- Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020, March 27). The difference between emergency remote teaching and online learning. *Educuse Review*. <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>
- Joo, Y. J., Kim, N., & Kim, N. H. (2016). Factors predicting online university students' use of a mobile learning management system (m-LMS). *Educational Technology Research and Development*, 64(4), 611-630. <https://doi.org/10.1007/s11423-016-9436-7>
- Kementrian Komunikasi dan Informatika. (2010) *Communication and informatics of Indonesia: Whitepaper 2010*. Kementrian Komunikasi dan Informatika. <https://web.kominfo.go.id/sites/default/files/BUKU-PUTIH-17-JAN-2011-lowres.pdf>
- Khan, I. U., Hameed, Z., Yu, Y., & Khan, S. U. (2017). Assessing the determinants of flow experience in the adoption of learning management systems: The moderating role of perceived institutional support. *Behaviour and Information Technology*, 36(11), 1162-1176. <https://doi.org/10.1080/0144929X.2017.1362475>
- Krashen, S. D. (1985). *The input hypothesis: Issues and implications*. Longman.
- Kumar, N., Wajidi, M. A., Chian, Y. T., Vishroothi, S., Ravindra, A. S., & Aithal, A. P. (2016). The effect of listening to music on concentration and academic performance of the student: Cross-sectional study on medical undergraduate students. *Research Journal of Pharmaceutical, Biological and Chemical Sciences*, 7(6), 1190-1195. [https://www.rjpbcs.com/pdf/2016_7\(6\)/\[154\].pdf](https://www.rjpbcs.com/pdf/2016_7(6)/[154].pdf)
- Luck, L. T., Omar, N. B., & Hassan, W. H. A. B. W. (2012). Regional teachers and academics LMS – An innovative and collaborative platform to support life-long learning and training for teachers and academics. *Procedia – Social and Behavioral Sciences*, 67, 250-259. <https://doi.org/10.1016/j.sbspro.2012.11.327>
- McClellan, S. (2016). Teaching critical thinking skills through commonly used resources in course-embedded online modules. *College and Undergraduate Libraries*, 23(3), 295-314. <https://doi.org/10.1080/10691316.2014.987416>
- Mamoon-Al-Bashir, M., Kabir, M. R., & Rahman, I. (2016). The value and effectiveness of feedback in improving students' learning and professionalizing teaching in higher education. *Journal of Education and Practice*, 7(16), 38-41. <https://www.iiste.org/Journals/index.php/JEP/article/view/31077/31909>
- Meylani, R., Bitter, G., & Legacy, J. (2015). Desirable characteristics of an ideal online learning environment. *Journal of Educational and Social Research*, 5(1), 203-216. <https://doi.org/10.5901/jesr.2015.v5n1p203>
- Misir, H., Koban Koç, D., & Engin Koç, S. (2018). An analysis of learner autonomy and autonomous learning practices in massive open online language courses. *Arab World English Journal*, 4(4-Special Issue), 24-39. <https://dx.doi.org/10.2139/ssrn.3226679>

- Mohammed, A. O., Khidhir, B. A., Nazeer, A., & Vijayan, V. J. (2020). Emergency remote teaching during coronavirus pandemic: The current trend and future directive at Middle East College Oman. *Innovative Infrastructure Solutions*, 5(3), 1–11. <https://doi.org/10.1007/s41062-020-00326-7>
- Nelson, M., & Murakami, E. (2020). Special education students in public high schools during COVID-19 in the USA. *International Studies in Educational Administration (ISEA)*, 48(3), 109–116. <http://ccea.net/wp-content/uploads/2020/10/ISEA-2020-48-3.pdf#page=115>
- Nikpouraghdam, M., Faharani, A. J., Alishiri, G., Heydari, S., Ebrahimnia, M., Samadinia, H., Sepandi, M., Jafari, N. J., Izadi, M., Qazvani, A., Dorostkar, R., Tat, M., Shahriary, A., Farnoosh, G., Hosseini Zijoud, S. R., Taghdir, M., Alimohamadi, Y., Abbaszadeh, S., Gouvarchin Ghaleh, H. E., & Bagheri, M. (2020). Epidemiological characteristics of coronavirus disease 2019 (COVID-19) patients in Iran: A single center study. *Journal of Clinical Virology*, 127. <https://doi.org/10.1016/j.jcv.2020.104378>
- O'Hare, A. (2011). The effect of vocal and instrumental background music on primary school pupils' verbal memory using a sentence recall task. *Student Psychology Journal*, 2. [https://psychology.tcd.ie/spj/past_issues/issue02/Empirical%20Studies/\(3\)%20Anna%20O'Hare.pdf](https://psychology.tcd.ie/spj/past_issues/issue02/Empirical%20Studies/(3)%20Anna%20O'Hare.pdf)
- O'Keefe, L., Rafferty, J., Gunder, A., & Vignare, K. (2020). Delivering high-quality instruction online in response to COVID-19: Faculty playbook. *Every Learner Everywhere*. <https://www.everylearnereverywhere.org/resources>
- Organisation for Economic Cooperation and Development. (2005). *E-learning in tertiary education: Where do we stand?*. OECD Publishing. <https://doi.org/10.1787/9789264009219-en>
- Ölgen, B. (2012). A literature review on the use of music in architectural design education. *Design and Technology Education: An International Journal*, 25(2), 74–89. <https://ojs.lboro.ac.uk/DATE/article/view/2776>
- Purushotham, S. L., & Swathi, Ch. (2020). Online learning and its effects on English language skills among higher education students amid the COVID-19. *Language in India*, 20(9), 127–144. <http://www.languageinindia.com/sep2020/sunitafinal.pdf>
- Rahim, A., Ali, S., Ali, S., & Fayyaz, H. (2020). Online education during COVID-19 pandemic: An experience of RIPHAH International University Faculty of Health and Medical Science. *Pakistan Armed Forces Medical Journal*, 2, 506–513. <https://www.pafmj.org/index.php/PAFMJ/article/view/5240/2902>
- Rohman, I. K., & Bohlin, E. (2011). An assessment of mobile broadband access in Indonesia: A demand or supply problem? *Internetworking Indonesia Journal*, 3(2), 15–22. http://internetworkingindonesia.org/Issues/Vol3-No2-Fall2011/ijj_vol3_no2_2011_rohman.pdf
- Schlesselman, L. S. (2020). Perspective from a teaching and learning center during emergency remote teaching. *American Journal of Pharmaceutical Education*, 84(8). <https://doi.org/10.5688/ajpe8142>
- Sun, A., & Chen, X. (2016). Online education and its effective practice: A research review. *Journal of Information Technology Education: Research*, 15, 157–190. <https://doi.org/10.28945/3502>
- Stiglic, N., & Viner, R. M. (2019). Effects of screentime on the health and well-being of children and adolescents: A systematic review of reviews. *BMJ Open*, 9(1), 1–15. <https://doi.org/10.1136/bmjopen-2018-023191>
- Teräs, M., Suoranta, J., Teräs, H., & Curcher, M. (2020). Post-Covid-19 education and education technology 'Solutionism': A Seller's market. *Postdigital Science and Education*, 2(3), 863–878. <https://doi.org/10.1007/s42438-020-00164-x>
- World Health Organization. (2020). *Coronavirus disease (COVID-19) pandemic*. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

Appendix

Questionnaire

Instructions:

This online survey aims to obtain opinions and creative ideas from all of you. The information is very useful for us to design full distance/online learning courses. There are only 18 questions, and it takes 5 minutes to complete. Thank you very much

1. Name:
2. Study program:
 - a. Information Systems study program
 - b. Informatics Engineering study program
 - c. Industrial Engineering study program
 - d. Visual communication design study program
 - e. Pharmacy study program
 - f. Chemistry study program
 - g. Management study program
 - h. Accounting study program
 - i. English Letters study program
 - j. Mandarin Language Education study program
3. To achieve the effectiveness of online learning, all lecturers/teachers at the university/school need to run one type of LMS platform only.
 - a. Yes
 - b. No
4. Learning management system platform that is very representative of the conditions and needs of the university...
 - a. MS Team
 - b. Edmodo
 - c. Schoology
 - d. Google Classroom
 - e. Moodle
 - f. Canvas
 - g. Others. Please mention
5. The number of modules that must be prepared to achieve all learning objectives in the Learning plan for one semester is
 - a. 1-5 modules
 - b. 6-10 modules
 - c. 11-15 modules
 - d. ≥ 16
6. One module should consist of
 - a. Learning objectives
 - b. Video tutorials
 - c. Teaching materials
 - d. Discussion tasks
 - e. Project assignments
 - f. Others. Please mention.
7. To complete one module, students need
 - a. 1-3 days
 - b. 4 -5 days
 - c. 6-7 days
 - d. ≥ 8 days
8. The duration of a good video tutorial is...
 - a. 5-10 minutes
 - b. 11-15 minutes
 - c. ≥ 16 minutes
9. Showing the teacher's face during teaching in the video tutorial is better than showing no face at all
 - a. Yes
 - b. No
10. The music background needs to be included in the tutorial videos
 - a. Yes
 - b. No
11. The synchronous communication media that I use to support online learning students are...
 - a. Whatsapp
 - b. Telegram
 - c. Line

- d. Zoom
 - e. Google Meet
 - f. Hangout
 - g. Others
12. The ideal use of synchronous media to communicate with students is
- a. Everyday
 - b. Once in a week
 - c. Depends on the need
 - d. No use
13. My commitment to spend time online in the management system platform to check student work every day is...
- a. 10-30 minutes
 - b. 31-60 minutes
 - c. 61-120 minutes
 - d. \geq 121 minutes
14. The method I take when students are not active in online learning activities is
- a. Contact them via instant messenger
 - b. Send messages via email
 - c. Make a call
 - d. No need to do anything because they are adults already
 - e. Others. Please mention
15. I need to give discussion assignments in each module.
- a. Yes
 - b. No
16. I regularly give my comments on all student posts in that discussion thread
- a. Yes
 - b. No
17. Discussion assignments are equal in weight to small quizzes
- a. Yes
 - b. No
18. The following is a formative test whose weight is equivalent to the big quiz.
- a. Making movies
 - b. Make an essay
 - c. Make a report
 - d. Making scientific articles
 - e. Make the web
 - f. Other. Please state...
19. Share your views on online teaching practices that teachers need to do.

Mextesol

ORIGINALITY REPORT

13%

SIMILARITY INDEX

12%

INTERNET SOURCES

7%

PUBLICATIONS

7%

STUDENT PAPERS

PRIMARY SOURCES

1	direct.mit.edu Internet Source	2%
2	repository.uin-malang.ac.id Internet Source	1%
3	www.researchgate.net Internet Source	1%
4	Submitted to Oxford Brookes University Student Paper	1%
5	Submitted to iGroup Student Paper	1%
6	lernercenter.syr.edu Internet Source	<1%
7	dumas.ccsd.cnrs.fr Internet Source	<1%
8	files.eric.ed.gov Internet Source	<1%
9	meetings.copernicus.org Internet Source	<1%

10	digital.rdhmag.com Internet Source	<1 %
11	iptek.its.ac.id Internet Source	<1 %
12	Submitted to CSU, San Francisco State University Student Paper	<1 %
13	doras.dcu.ie Internet Source	<1 %
14	www.internetworkingindonesia.org Internet Source	<1 %
15	escholarship.org Internet Source	<1 %
16	Abby Cameron-Standerford, Katherine Menard, Christi Edge, Bethney Bergh, Ashley Shayter, Kristen Smith, Laura VandenAvond. "The Phenomenon of Moving to Online/Distance Delivery as a Result of COVID-19: Exploring Initial Perceptions of Higher Education Faculty at a Rural Midwestern University", <i>Frontiers in Education</i> , 2020 Publication	<1 %
17	docs.neu.edu.tr Internet Source	<1 %
18	ir.csuc.edu.gh:8080 Internet Source	<1 %

19 Antoni Badia. "Research trends in technology-enhanced learning / Tendencias de la investigación en el aprendizaje favorecido por la tecnología", Infancia y Aprendizaje, 2015

Publication

<1 %

20 ojs.cepsj.si

Internet Source

<1 %

21 ojs.pnb.ac.id

Internet Source

<1 %

22 www.emerald.com

Internet Source

<1 %

23 www.ieomsociety.org

Internet Source

<1 %

24 "Active Learning in College Science", Springer Science and Business Media LLC, 2020

Publication

<1 %

25 cc.oulu.fi

Internet Source

<1 %

26 journals.aiias.edu

Internet Source

<1 %

27 kt.flexiblelearning.net.au

Internet Source

<1 %

28 ressat.org

Internet Source

<1 %

www.mededpublish.org

29

Internet Source

<1 %

30

"Emergency Remote Learning, Teaching and Leading: Global Perspectives", Springer Science and Business Media LLC, 2021

Publication

<1 %

31

Indriatmoko, , Yuzo Shioi, Tatas Hardo Panintingjati Brotosudarmo, and Leenawaty Limantara. "Separation of Photosynthetic Pigments by High-performance Liquid Chromatography: Comparison of Column Performance, Mobile Phase, and Temperature", Procedia Chemistry, 2015.

Publication

<1 %

32

Richard Gregory Johnson. "Chapter 2756 Civil Rights", Springer Science and Business Media LLC, 2018

Publication

<1 %

33

Sione Paea, Bibhya Sharma, Gabiriele Bulivou, Mele Katea Paea. "Card Sorting: Challenges in Mathematics during Emergencies and Crises", Research Square, 2021

Publication

<1 %

34

Tim Buttler, Darren George, Kira Bruggemann. "Student input on the effectiveness of the shift to emergency remote teaching due to the COVID crisis: Structural equation

<1 %

modeling creates a more complete picture",
International Journal of Educational Research
Open, 2021
Publication

35	end-educationconference.org Internet Source	<1 %
36	oro.open.ac.uk Internet Source	<1 %
37	www.coursehero.com Internet Source	<1 %
38	www.edupij.com Internet Source	<1 %
39	www.irrodl.org Internet Source	<1 %
40	www.researchsquare.com Internet Source	<1 %
41	www.tandfonline.com Internet Source	<1 %
42	"Recent Advances in Intelligent Systems and Smart Applications", Springer Science and Business Media LLC, 2021 Publication	<1 %
43	Jo Lindsay Walton, Polina Levontin, Martine J. Barons, Mark Workman, Erik Mackie, Jana Kleineberg. "Communicating Climate Risk: A	<1 %

Toolkit", Cambridge University Press (CUP),
2021

Publication

44

www.ncbi.nlm.nih.gov

Internet Source

<1 %

45

"Radical Solutions for Education in a Crisis
Context", Springer Science and Business
Media LLC, 2021

Publication

<1 %

Exclude quotes On

Exclude matches Off

Exclude bibliography On