

## **STUDENTS' PERCEPTIONS ON EDUCATORS' DIGITAL LITERACY IN TEACHING**

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### **Abstract**

The COVID-19 pandemic significantly transformed the educational landscape, compelling educators to adopt various digital tools to ensure the continuity of learning. Although face-to-face learning has resumed, the integration of technology in education remains relevant and essential. This study investigates students' perceptions of lecturers' digital literacy in the context of online learning during and after the pandemic. The research involved 30 respondents answering a questionnaire and 7 participants in forum group discussions (FGDs) from two higher education institutions with language departments: STBA LIA Yogyakarta and Universitas Negeri Yogyakarta. The study aimed to assess lecturers' competencies in using digital tools for teaching and the extent to which these tools are considered necessary from the students' perspective. The findings indicate that while lecturers demonstrate sufficient to proficient skills in utilizing Learning Management Systems (LMS), video conferencing platforms, and basic hardware tools such as laptops and smart phones, they often struggle with more advanced competencies, including video and audio editing, gamification, and managing digital learning platforms. Students emphasized the importance of engaging teaching materials, particularly video-based content with high resolution and clear audio, to support better understanding in online settings. Furthermore, students highlighted the necessity for lecturers to master not only the delivery of content but also the management of digital classroom tools, including online attendance, evaluation, and communication through messenger platforms. The study concludes that digital literacy among lecturers must continue to be developed even after the pandemic, as online and blended learning remain integral to modern education. Mastery of digital tools—ranging from authoring and testing tools to communication and presentation platforms—is crucial in enhancing the quality and accessibility of education. Ongoing training and professional development in educational technology are recommended to ensure that lecturers can meet the evolving needs of their students in a digital learning environment.

**Keywords:** digital literacy, lecturers' competence, online learning, educational technology, students' perceptions

### **INTRODUCTION**

During the COVID-19 pandemic, all institutions, including educational institutions, had to shift their teaching methods from offline to online. Lecturers who had never taught online before were forced to learn how to do so. Instead of interacting face-to-face with students, lecturers were required to teach solely through a screen. Adapting to these changes had to be done quickly. The major change that lecturers had to learn was how to teach using online media. This included conference tools like Zoom and Gmeet; communication tools like WhatsApp and Telegram; hardware tools like smartphones and laptops; presentation tools like Canva and PowerPoint; learning tools like apps and browsers; editing tools like Kinemaster and InShot; and gamification tools like Quizziz (now called Wayground) and WordWall. When learning took place offline, faculty members did not need

to use so many applications. Their mastery of technology was sufficient for communication purposes only. During the approximately two-year lockdown, faculty members were required to quickly master these tools.

Now, after Covid 19 has passed, online learning has begun to shift to offline learning. In fact, online learning is still frequently used to replace meetings that cannot be conducted offline. Lecturers who are supposed to teach but are unable to attend class in person due to other activities can replace the meeting with online meeting. Therefore, there are several digital literacy skills that were mastered during the pandemic that can still be used today. These skills include mastery of hardware tools, learning management system tools (LMS), messenger tools, conference tools, authoring tools, sharing/presentation tools, testing tools, and learning tools.

Numerous studies have brought up the subject of online learning during the COVID-19 pandemic. The incapacity of educators to adjust to the demands of learning digital technology, including computers, online meetings, online learning programs, and many other things, is one of the highlights. Research shows that many educators struggle to adapt to the demands of digital learning technologies due to limited skills, rapid technological change, and lack of institutional support. In higher education, teachers often display only low to medium levels of digital competence, particularly in evaluating teaching practices, which highlights the need for targeted professional training (Basilotta-Gómez-Pablos et al., 2022: 12). Similarly, Teachers have been known to be uncomfortable with using technology with instruction due to its constant changing nature (Mundy & Kupczynski, 2013: 1).

In this modern era, there are numerous methods and media available for teaching. Meirani Telaumbanua said that teaching methods include direct instruction, flipped classrooms, kinesthetic learning, differentiated instruction, inquiry-based learning, expeditionary learning, personalized learning, game-based learning (4). Teaching media used by teachers to deliver learning materials can be direct or indirect. Blackboards, books, drawings, pens or pencils, in-person instruction, and so forth are examples of direct media; Computers, laptops, tablets, cell phones, and all of its supporting application are examples of indirect media.

Mastering learning applications is a challenge for some teachers due to various factors. The first factor is age; many teachers are no longer young. As a result, it can be quite challenging for them to learn modern educational applications. Darwanto et al. in their study "Technology: Language teachers' digital and navigating skills in emergency education" examined teachers' perspectives, finding that age influences teachers' willingness to learn and master technology. Another factor, quoting Simatupang et al., is that teachers lack familiarity with the online learning system so that their teaching preparations cannot be fully optimized. Also, limited access to



facilities or internet data during online teaching hinders optimal teaching instructions, along with unsupportive environment for conducting online lessons. Research by Brianiannur Dwi C. et al. revealed that learning outcomes were not fully effective due to inadequate facilities and infrastructure, which were impacted by economic conditions, along with technological unpreparedness hindering the continuation of online learning activities. Swan said, "Interaction with lecturers is very important in online learning because it can reduce psychological distance which in turn will lead to better learning" (Firman and Rahman page 85). Students also experience obstacles, where lack of interaction with lecturers causes a lack of understanding of the material presented. Yet, in online classes students might experience limited interaction with teachers, leading to difficulties in fully comprehending the material presented. The researchers attempted to understand teachers' digital skills in teaching during the pandemic and tools students believe to be mastered during this period.

## **METHOD**

### **Participants**

The subjects of this research were students in the first, third, fifth, and seventh semesters in two universities with language department, i.e., STBA LIA Yogyakarta and Universitas Negeri Yogyakarta. The participants were selected using a random sampling technique.

### **Data Collection**

A questionnaire and a two-session forum group discussion (FGD) were used to collect the data. The questionnaire has 40 questions that related to lecturers' preparation during the pandemic, consisting of 36 closed-ended questions, and 4 open-ended questions. The questionnaire was created on Google form and the available links were shared online via personal chat or groups. The focus group discussions (FGDs) were conducted after the data from the questionnaire were collected with some of the respondents to further validate the responses provided in the questionnaire.

### **Data Analysis**

Data from the questionnaire were displayed in tables which show the percentages of the respondents' answers to each question. Data from the FGDs were used to provide more explanation to the respondents' answers to the questions in the questionnaire.

## **RESULTS AND DISCUSSION**

### **Results**

#### ***Results of Questionnaire***

There were 20 females and 10 males filling the questionnaire. The respondents were 5 students from the 1<sup>st</sup> semester, 7 students from the 3<sup>rd</sup> semester, 6 students from the 5<sup>th</sup> semester, and 12 students from the 7<sup>th</sup> semester.

The following is data from the questionnaire results regarding the abilities of lecturers during the pandemic according to students' perceptions.

Table 1  
Lecturers' ability during the pandemic

	Very Low	Low	Sufficient	Proficient	Very Proficient
<b>Preparation</b>					
Making material for presentation	0	10%	40%	43%	7%
Editing Video	10%	27%	33%	27%	3%
Editing Image	7%	27%	30%	33%	3%
Editing Audio/voice	7%	2%	40%	30%	3%
<b>During teaching-learning process</b>					
Using LMS	0	2%	2%	47%	13%
Using Video Conferencing Application	3%	17%	37%	27%	17%
Using laptop to support learning	3%	13%	40%	23%	2%
Using phone to support learning	3%	13%	33%	27%	23%
Asking questions	0	10%	43%	37%	10%
Sharing video	3%	27%	23%	33%	13%
Managing Gamification of Learning	7%	27%	37%	23%	7%
Providing Online Learning Resources	3%	30%	2%	37%	10%
Recording Students' Online Attendance	7%	23%	27%	23%	2%
Digitally Correcting Students' Work	3%	2%	33%	30%	13%

Table 1 shows that 50% respondents stated that lecturers had proficient and very proficient abilities, while 40% respondents stated that lecturers had sufficient abilities in making material for presentation. Regarding editing skills, including video, image, or audio editing, 27% to 37% of respondents stated that the lecturers' skills were low or very low. This means that most students believe that lecturers' editing skills are not good.

In terms of teaching and learning activities, the applications that are often used are, LMS as a medium for sharing materials for independent learning and video conferencing as a medium for virtual meetings. In terms of LMS usage, only 20% of respondents stated that the lecturers have low proficiency, 20% stated adequate proficiency, and 60% stated that the lecturers have good proficiency. Regarding lecturers' ability to operate video conferencing applications, 20% of

respondents stated that lecturers have low proficiency, 37% stated moderate proficiency, and 43% stated good proficiency.

In managing learning, whether through LMS or video conferencing, lecturers need to be able to operate hardware. The hardware that lecturers should be proficient in is laptops and cell phones. In this case, 83% of respondents stated that lecturers' ability to operate laptops was quite good, while only 16% stated that it was poor or not good enough. Similarly, regarding the use of smartphones, only 16% of respondents believed that lecturers' skills were inadequate or insufficient. This indicates that lecturers' basic proficiency in hardware operation is sufficient for conducting online learning.

In addition, students also highlighted the ability of lecturers to ask questions online. Asking questions online can take the form of polls, using applications such as Mentimeter, or simply using the ask question feature on the LMS or asking questions directly during virtual meetings. Regarding this ability, the majority of respondents (90%) stated that the lecturers' abilities were more than sufficient.

Another skill that was often used during learning was the ability to share videos, either directly during virtual meetings or through LMS. 47% of respondents stated that the lecturers had good to very good skills, with 23% indicating their skills were adequate, while 30% reported them as insufficient.

To increase student motivation in learning, experts often suggest using gamification so that students do not get bored just listening to lectures. Recent studies in the field of English as a Foreign Language (EFL) learning have consistently demonstrated that gamification can significantly enhance students' motivation. For instance, Huseinović (2023: 1), through a quantitative study involving 202 university students in Bosnia, found that the integration of gamified elements in EFL instruction enhanced students' motivation, improved the four core skills (listening, speaking, reading, writing), and positively affected academic achievement. In a different context, Cheng, et.al (2025) conducted a quasi-experimental study with 220 first-year Chinese undergraduates. Their findings revealed that gamification not only improved reading proficiency but also fostered enjoyment, concentration, and social skills such as collaboration and communication (13). Gamification is a challenging activity, both in terms of game development and implementation. This is evident from the fact that 30% of respondents stated that lecturers had good to very good skills, 37% stated adequate, and 33% stated insufficient.

In addition to sharing presentation materials and videos, the lecturers sometimes also shared online learning resources that students could access independently. However, not all lecturers did this. 30% of respondents stated that lecturers' ability to share online learning resources was low, while 47% stated that it was good or very good.

One concern during online learning is student attendance. Sometimes students only attend classes but keep their cameras off, so lecturers cannot check whether they are actually attending or have gone back to sleep. Therefore, the lecturers must have a strategy for recording student attendance. According to 43% of students, the lecturers already have good skills in this area, 27% said they were adequate, and 30% said they were insufficient.

Another issue that often receives attention in online learning is the ability of the lecturers to correct students' work submitted online. Many lecturers found it difficult to provide comments or notes on students' online work. However, 43% of the students stated that the lecturers were good at correcting students' online work, while only 23% of students believed that lecturers' abilities were low or very low.

After knowing the students' opinions about the lecturers' skills, below is the table that shows what is needed and what is not needed to be mastered by lecturers based on students' opinions and experiences. This table shows skills that lecturers need to have.

Table 2  
Skills lecturers need to have

	Absolutely unnecessary	No need	Sufficient	Need	It is necessary
<b>Preparation</b>					
Making video presentation	17%	10%	20%	23%	30%
Editing Video ability	13%	13%	20%	47%	7%
Editing Audio ability	10%	17%	20%	37%	17%
Using application in making material	10%	13%	27%	30%	20%
Making online test	0	13%	37%	33%	17%
<b>During teaching learning process</b>					
Using phone to teach	3%	10%	37%	27%	23%
Using computer to teach	0	13%	27%	27%	33%
Video conference	0	13%	10%	50%	27%
Share screen ability in video conference	3%	10%	17%	23%	47%
Online Sharing Material	3%	10%	23%	37%	27%
Online learning references	7%	7%	23%	33%	30%
Group class in WA	7%	17%	10%	37%	30%
Ability to operate digital learning app	3%	10%	33%	30%	23%
The ability to use gamification during learning	10%	13%	30%	20%	27%
Online evaluation	0	23%	30%	30%	17%

In online learning, the lecturers must prepare materials in the form of slides, videos, audio, and handouts. According to the students, creating video presentations is one of the skills that

lecturers must master. Fifty-three percent of students stated that it is necessary and very necessary to master video presentation creation, while 27% stated that it is not necessary. Video and audio editing skills are required to prepare this video presentation. 53% of respondents agreed with this, while 27% said that it was not very important to have these skills. In addition to video and audio editing skills, 50% of respondents stated that lecturers need to master applications for creating materials such as Powtoon, Canva, etc.

Online testing is also something that lecturers need to understand, with 50% of respondents agreeing with this statement and only 13% stating that it is not necessary to master the ability to create questions.

During online learning, the skills that lecturers need to master are, the ability to operate computers and mobile phones. Regarding the ability to use mobile phones and computers, only 13% of respondents stated that lecturers do not need to master these skills.

Additionally, the ability to operate video conferencing applications is also a skill that must be mastered. 70% of respondents stated that lecturers must master these skills. The ability to share screens is also a skill that lecturers must master (77% of respondents).

Communication is an important thing that always need to be maintained because online meetings are highly dependent on smooth online communication. 67% of respondents stated the importance of creating a class WhatsApp group to facilitate communication between lecturers and students since information and materials used in learning are often shared in this group. In this case, Sixty-three percent of respondents emphasized the importance of lecturers being proficient in sharing teaching materials online and in searching for online references.

To increase student motivation, lecturers often use activities such as gamification and other digital applications. 47% of respondents stated that lecturers need to master gamification skills and 53% stated that lecturers must be able to operate digital learning applications.

In addition, Forty-seven percent of respondents agreed on the importance of lecturers being proficient in online learning applications. Finally, regarding the necessity of lecturers conducting online evaluations, 23% of respondents indicated that lecturers did not need to have this skill.

### ***Open Ended Question***

Four open-ended questions were used to support the data of closed-ended questions. The first question asked how lecturers checked students' understanding of the material that has been given. Many of the respondents answer that they often get exercise or questions after lecturers gave the material. Some of the participants said that the lecturers ask them if they already understand the material or not. **The second question asked which new applications the lecturers were unfamiliar**

with before the pandemic but have since become proficient. 60% participants answer Zoom and Google classroom and the rest of answers Whatsapp, PC system, and Youtube. The third question asked how lecturers improve the ability to adjust to the current conditions. Most of them 60% answered that lecturers need to attend the training about technology, self-learning from Youtube, and other platforms, they also need to learn how to edit video, audio, and text material, and to run the application for online learning. The last question asked what applications lecturers need to master for WFH (work from home). The answer is Google classroom, Zoom, Youtube, Schoology, Microsoft Office, Video Maker, WhatsApp, Quizizz, Google Meet, Kahoot, Video Conferences, Website e-learning, dan multimedia editor application.

### ***Forum Group Discussion***

Forum Group Discussions (FGDs) were conducted in STBA LIA Yogyakarta. The FGDs had 2 sessions. The first session was attended by the fifth and the seventh semester and the second session was attended by the first and the third semester. In these forum group discussions, there were 7 representatives from STBA LIA Yogyakarta, 1 from the 1<sup>st</sup> semester, 2 from the 3<sup>rd</sup> semester, 1 from the 5<sup>th</sup> semester, and 3 from the 7<sup>th</sup> semester. The students were selected based on activity on campus and in online learning. The FGDs had 27 questions relevant to the questionnaire.

The results of the FGDs show that the students want the lecturers to understand more and learn more about the technology in this era, especially in this Covid-19 pandemic. They stated that they needed the learning material to be presented in an engaging video format rather than just texts, as texts alone are difficult for them to learn from. Online learning needs to be done in this pandemic, so the lecturers need to learn about how to operate the hardware such as laptop and smart phone and how to run the tools, especially the video-conferencing tool. The sharing screen in video conferencing tools is important to be mastered because that is how online classes work. In FGDs, there are a few comments about conferencing tools, the participants said that a few lecturers were still confused when there was trouble with an unstable network in the middle of online learning. The editing video in every material was also needed; some of the participants in the FGDs said that they need videos with clear sound and high resolution, so they can understand the video material better. In addition, online attendance is somehow important, especially for students who are also workers. For them, online attendance is needed because their working hours are erratic amid the Covid-19 pandemic and online attendance helps them complete their attendance anywhere. Also, sharing material is the important point after all the points above. Lecturers must master how to share online material with the students because that is how the students learning.

Other skills such as using LMS and all the features in the LMS are important. They said that the lecturers should learn the LMS well because all the features in the LMS have their own



function. Next is the ability to use messenger tools such as Whatsapp, Line, etc. In these skills, the lecturers need to learn how to share the information in the right way so that all information can be received well by the students. All those skills need to be mastered by lecturers so that students have no problem understanding the material. Moreover, students suggest the lecturers attend the training or seminars about technology to master all of the skills because if lecturers can teach better in online teaching, offline teaching will be better too.

## **DISCUSSION**

Although the pandemic has long passed, lecturers' ability to conduct online learning is still needed, albeit not as intensively as before. Lecturers should master authoring tools, testing tools, sharing/presentation tools, learning management tools (LMS), learning tools, hardware tools, conference tools, and messenger tools (Darwanto et al. p. 146). Singh adds that the various tools used, which have become more common post-COVID-19, can be classified into 5 categories of ICT tools. These five sub-categorizations are as follows: Communication and Collaboration Tools (Learning Management System, Video Conferencing Tools, Discussion Forums); Interactive Content Creation Tools (Presentation Tools, Interactive Whiteboard, Game-Based Learning Platforms); Tools for Personalized Learning (Adaptive Learning Platforms, Differentiation Resources, Accessibility Features); Assessment Tools; and Teacher Productivity Tools (Gradebook Software, Lesson Planning Tools, Classroom Management Tools). These tools were not only used during emergency learning during the pandemic, but are still needed today for online learning.

Learning Management System (LMS) is the point of the online learning because all the learning system in every school or university is based on this system. LMS is software designed to create, distribute, and organize the delivery of learning content. LMS such as Schoology, Google Classroom, Edmodo, and Moodle is "The digital application to help administer the education process, to mount the course traffic, to share coursework including quizzes and tests, to keep track of students' participation and attendance (Darwanto et. al. p. 146)." The lecturers already know how to use LMS applications but in using its features, they still need to learn more. Once, there is a lecturer that puts a mid-task in the wrong place so that other students can see the results of the task and other students' task. The students got the task that they were done by themselves copied by others. This kind of situation can make the students feel uncomfortable in that course. It will be better if the lecturers learn more about LMS and the features so that this kind of problem cannot be found in the future. This kind of problem can make another big problem if cannot be handled properly. Even after the pandemic has passed, LMS will remain an important tool to master because, even now, sharing materials, assigning tasks, and collecting assignments are more organized using LMS. Data recorded in LMS will not be lost, whereas assignments collected manually may be lost.

After that, there are hardware tools. Hardware tools are mediums for software tools. Darwanto et al. stated that “Hardware tools are equipment that teachers use for educating (e.g. cellphones, laptops, PC, etc.) (146).” The participants agree that hardware tools are needed to support online learning; only 5 students think that the ability of lecturers to use hardware tools is very low. There are still many students who think that lecturers' ability in using hardware is sufficient but still needs to be improved. The lecturers must be ready if there is trouble or lagged in the PC/laptops or cell phones so that the trouble can be handled well and it will not affect online learning. In offline learning, lecturers can teach without using media. However, in this day and age, the use of media has become mandatory. Students today are very familiar with the use of technology, so lecturers should continue to utilize technology in their teaching as much as possible. Therefore, mastery of technology remains an important skill to acquire.

Authoring tools such as Hot Potatoes, Kinemaster, Audacity, CapCut, and Inshoot are the digital application for the creation of education materials. More than 50% of students agreed that lecturers should master editing ability. The participants said that the editing application is important to be mastered by lecturers because when the material is in the form of video, they need the best resolution and clear sound so they can understand the material better. In making the material, lecturers should master some authoring tools to edit the video and sound/voice. The quality of the video can affect the students' interest. If the video material is in high quality, the students can understand the material but if the video material is in low quality, the students cannot enjoy the video and, in the end, they cannot understand the material in the video. Even more important is the ability to record and edit sound. Unclear sound makes it difficult for students to understand the material being presented. Video material is important for students in online learning. When the signal is unstable and students cannot join the online meeting, the video material is the one that they search for. It will be better if the students can get high-quality video material to support their online learning, so they can get the knowledge and the important point of the material.

The tools which are also important are sharing/presentation tools. Sharing/presentation tools such as Google slides, Canva, Keynote, are the popular tools that are often used by lecturers in university or school. The application is very much needed to support online learning. Darwanto et al. stated that “Sharing/presentation tools are the digital application for visualizing education materials and teaching contents (e.g. Prezi, PowerPoint, Slides, MindMapping, YouTube, IG, etc.).” (146). More than 50% of students think that this application is important and needs to be mastered by lecturers. The students also said that the lecturers already understand how to use the application and how to share presentations in the application and only a few lecturers were still confused if there is an unstable connection in the presentation. Sometimes in online meetings, lecturers often do not pay attention to what they are presenting. They continue to explain the material without cross-checking with students whether the slides have changed or not. A common

problem is when lecturers want to switch sharing material from slide presentations to video or audio. Small things such as making sure that the audio share button has been clicked are often overlooked. This kind of trouble can make a big impact on students because they may not be interested in further learning. Therefore, lecturers should pay attention to every small detail to make online learning more enjoyable and fun.

Then, there is a conference tool. Zoom and Google Meets are two of many kinds of conference tools used by lecturers to do an online meeting. Online learning is certainly not done face-to-face. Because of that, conference tools exist and become the most popular tools since pandemic era. In Darwanto et al. "Conference tools are the digital equipment for making synchronous communication (e.g. Zoom, Google Meet)" (146). Since pandemic era, lecturers already mastered the conference tools, and mastering the conference tools is needed. Yet, mastery of conference tools is still a little problematic so the lecturers still need to learn more about the conference tools. The conference tool is easy to use and appeared in a simple design but the features are so many and sometimes not only lecturers but also students can be the host in the online learning. Therefore, the lecturers should understand how to change host in the online meeting. Apart from the change host feature, there are some others features such as adding the PPT or presentation, muting students, sending messages, doing some corrections in the PPT, appearing the video in presentation slides, etc. It will be better if the lecturers learn to use all the features first, so when there is a problem in the middle of online learning, they can handle it well.

Messenger tools such as WhatsApp, Line, Facebook Messenger, Twitter, Direct Message, etc. are the application used by so many people in this world to share information and also private message or personal chat. In school or university life, messenger tools are sometimes used to make a group discussion for some class or courses. These tools also can be used for sharing the material and other resources related to the courses. Darwanto et al. write that "Messenger tools are applications that use the messenger platform for interaction (WA, Line, Twitter, etc.)." (146). Messenger is the most used application in everyday life; everyone has at least one type of this tool. WhatsApp is one of many messenger tools that need to be mastered by the lecturers because from there, the information about the time of the online class if there is no class, information about the courses, and the material can be shared via group class's messenger. The lecturers should learn; how to share material by the group class in messenger, how to share other important things such as video material, PPT, online resources, and other articles. Thereupon, when the lecturers already mastered the messenger, there is no problem such as send the wrong material or any other problems that can make the students confuse.

The next tool that should be mastered by lecturers is the testing tool. In Darwanto et al. journal, they said that "Testing tools are digital applications to help teachers develop online tests (Hot Potatoes, Google Form, etc.)" (146). Testing tools are the application that can be used by lecturers to make a question or task in purpose to know how far the students understand the

material. Lecturers should know how to do tests digitally, not only from Microsoft word but from other applications to make it more creative and innovative. In online learning, the students also feel bored and cannot fully understand the material because the lecturers only explain the material in a basic way, they are not trying to mix it with some game or a thing that enjoyable. The effect is the students feel that online learning not interesting enough for them. Because of that, the lecturers should explore more about gamification tools, so that the online test can be more fun. Therefore, the results are lecturers good in develop online tests but still need to learn how to manage gamification.

From the discussion above, the writers can conclude that all of the points above are important for lecturers to master. Moreover, from the discussion, it shows that the lecturers should have technology training to support online teaching ability because online learning can be more interesting if lecturers and students master their respective fields.

## CONCLUSION

The pandemic may be over, but the ability to conduct online classes cannot be forgotten. With the emergence of various online learning applications, lecturers are greatly assisted in preparing learning materials. Whether learning is conducted online or offline, tools such as hardware tools, Learning Management System tools (LMS), messenger tools, conference tools, authoring tools, sharing/presentation tools, testing tools, and learning tools remain essential. Although their use may not be as intensive as during the pandemic, these capabilities can still be utilized to enhance students' motivation in learning.

Students feel that lecturers have made progress in mastering these tools. It would be a shame if the skills that lecturers have acquired are lost. With the increasing emphasis on collaborative learning, the use of these media is still very much needed. Coordination still uses messenger tools, presentations still use presentation tools, and project creation still requires mastery of hardware and software. For video projects, proficiency in authoring tools is still required. For classroom management, LMS is still used in combination with in-person classroom sessions. For assignments or self-directed learning, learning tools are still necessary. Therefore, it can be concluded that, according to students, these skills must still be mastered by faculty members.

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