Evaluating Online Applications in Teaching and Learning English for Mechanical Engineering Students at Hanoi University of Industry during COVID-19 Period

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ABSTRACT

Since the COVID-19 pandemic occurred, social fields in general or education, in particular, have been affected considerably. Education, however, cannot or will not be interrupted due to this outbreak of infection. Specifically, face-to-face classes have been shifted to online ones. To maintain the effectiveness of learning and teaching English to students in the faculty of Mechanical Engineering, teachers have applied some applications, including Padlet, Google Classroom, and Quizizz. Quantitative and qualitative analysis methods will answer the research questions. The tools used for data collection are questionnaires and interviews. The authors conducted questionnaires and interviews with lecturers and second-year students of the Faculty of Mechanical Engineering at Hanoi University of Industry. This article focuses on evaluating the application of software in the online English teaching and learning process at Hanoi University of Industry. Besides, this paper demonstrates the benefits and drawbacks of these interactive applications as well as suggests some effective solutions to help teachers facilitate students in learning English more successfully.

Introduction

Rationale of the study

All members of the community—students, teachers, parents, and the community at large are always learning new knowledge. We live in a digital age, so teachers may still connect with pupils despite the pandemic's onset (Singh et al., 2020). During the pandemic, it is undeniable that studying at home via computer screen has become a trend, so students at Hanoi University of Industry are no exception.. Therefore, educators have found a way to ease the process by applying online learning tools to teach, namely Padlet, Google Classroom, and Quizizz.

Significance of the study

Academic issues include learning challenges, a lack of teachers' attention, and an increase in workload that have made it harder for students to focus during online sessions. Researchers from different parts of the world have studied how COVID-19 has affected students' academic concerns (Maskari, Riyami & Kunjumuhammed, 2021). Since they didn't obtain adequate instruction from their teachers (Ali, 2020; Sullivan et al., 2018), many students haven't benefitted from online learning and have stopped being interested in taking classes there. Thus, applying interactive applications such as Padlet, Google classroom and Quizizz in teaching Mechanical Engineering during the COVID pandemic becomes imperative. Teachers and students have benefited from the incorporation of web-based games or mobile language learning since it has improved teaching and learning. These technology tools help students become more independent and motivated. It also enables them to evaluate themselves based on the comments they receive following an initial assessment. For learning and teaching English, "padlet.com", "classroom.google.com," and "quizizz.com" have emerged as the most popular and widely used of the many online platforms.

Research Aim

This study's primary goal is to evaluate how well three online platforms work for teaching and learning English for Mechanical Engineering at Hanoi University of Industry. This paper also takes the benefits and drawbacks of these interactive applications into consideration so that some effective measures can be taken to improve the quality of teaching and to learn English.

Scope of the study

Second-year students of the Faculty of Mechanical Engineering at Hanoi University of Industry, which is located in Campus A: Minh Khai ward, Bac Tu Liem district, Hanoi, serve as the study's subjects. This is a public university that belongs to the Ministry of Industry and Trade with a 123-year history of development, and there are over 50 thousand graduates and postgraduates annually. Hanoi University of Industry has different specialized training such as Electronics and Electrical Engineering, Information Technology, Tourism, etc. Mechanical Engineering is one of the most prestigious faculties in this institution. Students learn English from basic to advanced levels with internal books which their lecturers write. The English proficiency of students in this school is from A1 to B1, according to CEFR.

Literature review

English learning context at Hanoi University of Industry (HAUI)

The global education system faced severe obstacles as a result of the COVID-19 pandemic, and the Hanoi University of Industry is not an exception. Traditional brick-and-mortar schools had to become full-time virtual schools as a result of the epidemic in order to continue offering instruction to pupils (Van Lancker & Parolin, 2020). Therefore, from May 2020 to March 2022, all students of Hanoi University of Industry in general and those in the faculty of Mechanical Engineering in specific, had to adjust to the shift from face-to-face learning to distance learning, where synchronous video conferences, social media, and asynchronous

discussion forums replace in-person interactions as the main means of knowledge building and peer interaction.

Applications to facilitate online learning: Padlet, Google Classroom, Quizizz.

Padlet application

A web 2.0 tool called Padlet offers a platform for the creation of virtual walls. A virtual wall has the same purpose as a notice or whiteboard and allows users to "pin" numerous and various file kinds (word documents, photos, audio files, and videos). A wall's creator has control over its content, style, layout, and privacy. When creating a wall, the author can select the background of the wall from the several "wallpapers" offered, and when there are multiple postings on a wall, he or she can "organize" them in different layouts, such as stream, freeform, or grid. By altering the privacy setting, a wall's creator can also manage who has access to the walls. He or she can, for instance, make the walls private (by giving visitors the QR code, the URLs, and/or the passwords to the walls) or public (walls can be "discovered" through internal or Google searches). It is possible to customize the links and addresses to the walls. Additionally, the creator has the ability to "control" what users can do on the wall. For instance, users can be permitted to 1) only read what is posted, 2) write on the wall and edit their own posts (but not edit or approve other users' posts), or 3) moderate (can view, post, edit, and approve others' posts) (Padlet.com). Before allowing others to view them, the post's creator can additionally moderate it. Unless it is deleted or the wall is deleted, the content on a wall is permanent. Another function of Padlet is the simultaneous posting of comments and file uploads by any number of authors. Posting will be shown in real-time on a Padlet wall. Activities on Padlet require an internet connection, just like with any other web tool.

The usage of Padlet in the classroom has undoubtedly brought several benefits, including collaborative learning, flexible learning, and learner autonomy. First of all, Padlet encourages collaborative learning in class, particularly in writing and speaking. According to Mulyadi et al. (2021), writing assignments is considered easier for both teachers and students, as they can post their products directly to the wall, and other classmates are likely to leave comments or feedback. By this method, students could learn from each other without feeling reluctant to be exposed to the whole class. Also, Padlet is believed to assist teachers in the process of teaching speaking (Syahrizal & Rahayu, 2020). Specifically, teachers could observe learners' reactions from their leaving comments on their counterparts' speaking videos. As a result, they can learn both strengths and weaknesses from their friends, as well as engage in classroom activities. Another obvious advantage is its flexibility. Students can access Padlet at ease and finish their exercises at their own pace compared to limited time in the traditional classroom setting. Thus, it is believed to boost students' participation in the online platform (Ann & Zainor Izat, 2018). Finally, the application of Padlet has enabled students to be autonomous in their learning as they have to decide every aspect of their final products (When? Where? How?), they have no other way but to manage their own.

However, the risks of technical glitches, as well as psychological components, are unavoidable (Syahrizal & Rahayu, 2020). The first encounter is an Internet connection, which is the prerequisite for assessing Padlet (a web tool). Thereby, if a limited connection or link

error happens, students are unlikely to submit their exercises to the website. Another possible issue among learners is that they could feel insecure when showing their writing or speaking publicly (Ahmed, Almuniem, and Mbhuh, 2016). The reasons behind are possibly because they fear reading meticulous comments left on their walls. Even worse, they fear being judged in real life by what people read from these assignments.

Google Classroom Application

Google Classroom provides a platform for blended learning in schools to make it easier to create assignments and give students their grades paperless (Donald Yates, 2017). It is a well-liked Web 2.0 tool that provides many useful features and applications. It has the potential for teaching and learning, just like many other Web 2.0 applications, because of its distinctive built-in features that provide pedagogical, social, and technological affordances (Wang, Q et al., 2012). A new product called Google Classroom was added to Google Apps for Education in 2014. It takes into account the accomplishment of particular goals like streamlining student-teacher communication and making it simple to distribute and grade homework. It gives the students a chance to turn in their work by their instructors' due dates for online grading. Similarly, teachers can fully understand each student's development and return to work with the required remarks so that students can amend their tasks. As a result of these capabilities, Google Classroom is beneficial to not only students but also teachers. It streamlines communication and workflow for students, to say the least. In order to establish learning skills, being paper-free is essential. As a result, students may maintain their data in a single program better organized and paperless [Shaharanee, et al., 2016]. In 2016, Latif, who supported this previously given view, emphasized the value of Google Classroom. It is completely effective in facilitating the teaching and learning process. It is simple for students to use whenever a need arises.

Google Classroom's most distinctive advantage for teachers is the facilitation of the marking process virtually (Islam, 2019). Grading exams, as well as assignments, can now be handled by computers, instead of manually checking each answer as teachers used to do in the past. In this way can teacher release the amount of workload significantly. Also, this application stands out to be a good candidate for classroom management, regarding its capacity to be synchronous among Google Docs, Drive, and Calendar (Ni, 2020). Thanks to its cloud-based technology, documents are recorded and saved in Drive. Moreover, online classroom schedules can be marked in the Calendar application on the phone. Teachers are no longer afraid to miss to grade one exam or to check whether a specific student has met the deadline or not. For students, the most obvious prospect from this web tool is access to the electronic library in terms of slides and handouts from offline lectures (Islam, 2019). As teachers could share these materials via online classes in an organizational way, learners may not have to note down long lectures as before.

Despite offering teaching-assisted features by Google such as visual classrooms, auto-graded exams, etc., it was not until the Covid-19 pandemic that educators began to adopt Google Classroom in their teaching. On the other hand, this online platform seems to be suitable for advanced technology users only (Ni,2020) as it requires students to understand how Google Docs, Drive, and Calendar connect together and how they operate to utmost their learning

process. Also teachers' ICT competence plays an important role as well (Iftakhar, 2016). Especially, experienced teachers accustomed to traditional teaching methods find negative or neutral attitudes toward this online platform.

Quizizz Application

Quizizz, a web-based assessment tool, has been innovatively used in formative assessment to activate students' self-assessments (Intan Sinta Dewi Rahayu, 2018). According to Bury (2017), Quizizz is a gamified online tool that helps students check their knowledge and progress in learning. Each student's question order in Quizizz is random. To give pupils more practice, teachers can also assign homework by using Quizizz. Multiple-choice questions contain two or four possible answers. Quizizz is a free, user-friendly online formative assessment tool that helps teachers assess students' language as well as their curriculum knowledge. Rahayu (2018) claimed that the gamification tool has significantly improved students' learning and achievement.

Rahayu (2018) states that Quizizz is a great game-based tool that can assist learners in checking not only their knowledge but also their progress in learning English. It is a well-known e-learning platform, according to Thomas Mason Lim and Melor Md Yunus (2021), that provides endless quizzes that instructors and students can utilize in their regular classes. With an Internet connection, it is possible to copy and share any of the quizzes that are available on the website. Rahayu (2018) asserts that teachers might assign homework to pupils as extra practice in addition to tests by using Quizizz. Each student in the class receives a different set of questions in a different order. The type of question in Quizizz is multiple choice which has at least two possible answers and four possible answers. In accordance with their own preferences and the requirements of their students, teachers can also design their own quizzes. That is the reason why teachers would much rather use Quizizz for instruction and learning.

The most prominent benefit of Quizizz is getting students' full concentration during quizzes (Dewi, 2021). Therefore, it is likely that quiz-takers get fair results, with the justification being totally random questions and answer options. Plus, these options appear only in a short time; thus utilizers should focus vigorously to grasp the correct answers. Furthermore, Dewi (2021) also reported that Quizizz would improve self-confidence along with motivation in studying English among learners. To summarize, Chaiyo and Nokham (2017) have come to five main effects of Quizizz on the perception of learners:

- Assist students in the learning process
- Increase their engagement
- Increase their comfortability in the learning process
- Encourage them in the learning process
- Affect their concentration

However, this challenge arises from the fact that not all pupils have access to devices that can run this program. This application is challenging to implement in distance learning because of issues with the Internet network and the high cost of Internet access. (Kristiani & Usodo, (2022).

Research gap

The previous studies (mentioned in the literature review) only covered the application of web tools or the activities utilized in these web pages. Prior researchers seem to focus on the pros and cons of each application, rather than classroom management. Therefore, this paper will delve into both their application in class contexts and the classroom management of non-English major students, particularly at Hanoi University of Industry.

Research Questions

To fulfill the purpose of the study, the survey and the interview were seeking to answer the following research questions:

- What are the benefits and drawbacks of online applications in teaching and learning English for Mechanical Engineering?

- What are effective measurements of the negative effects of web-based apps?

Methods

This study aims to analyze the advantages and disadvantages of lecturers and students in the process of applying three popular software including Padlet, Google Classroom, and Quizizz, in teaching and learning Basic Mechanical English 3 and 4 online at Hanoi University of Industry. The research questions will be answered by using both quantitative and qualitative analysis methods. The tools used to collect data are interviews and survey forms. The authors conducted interviews with lecturers of English and distributed questionnaires to second-year students of the Department of Mechanical Engineering at Hanoi University of Industry.

Research setting

This research is conducted at Hanoi University of Industry, with target participants being non-English major sophomores and lecturers of English faculty. The data-collecting process lasts for a semester, with 382 students and five teachers involved.

Participant selection

A questionnaire and an interview were employed to answer the research question and meet the objective of the paper. In this study, 382 sophomore students from ten different classes who specialized in mechanical engineering at Hanoi University of Industry were chosen to answer the questionnaire. Since they have roughly the same level of English proficiency, out of 382 students, 5 of them were selected randomly to conduct the interview. Also, five teachers who taught Mechanical Engineering English were chosen to be interviewed.

Data collection instrument

A questionnaire and interview were organized to find out the answer to the research question.

Questionnaire

The questionnaire method is chosen because it enables the researchers to collect a large amount of data in a short period of time. This is particularly helpful since the researcher

decides to collect data from 382 participants.

In this study, the questionnaire was self-designed by the researchers to collect the necessary data. We use multiple- choices in questions 1 and 3, and a 5-point Likert Scale in question 2. All three are aligned with Literature Review to determine students' attitudes towards three online software (Quizizz, Google Classroom, Padlet), along with the influence of these applications when learning English in the classroom context. Plus, to enhance its reliability and validity, we consult opinions from colleagues being teachers in the faculty of language at Hanoi University of Industry.

Interview

Analyzing data from the questionnaire alone is not enough, as it is only numbered, and it might be hard to infer the meaning behind participants' choices. The interview method will rectify this drawback by collecting students' rationale and further explanation behind their choices. This interview was constructed based on the bedrock of the questionnaires.

For this interview, five interviewees were selected randomly to answer a set of questions. These questions are closely related to the questionnaire, aiming to find more details and explanations regarding the participants' scoring results.

Moreover, with the purpose of evaluating the pros and cons of the abovementioned three applications, 5 educators were asked to carry out this interview.

The interviews are transcribed and then interpreted to serve the purpose of this research.

Data collection procedure

The research process includes two phases in total.

Phase 1: The questionnaire was handed out face-to-face to three classes, 382 students in total. Before giving out the questionnaire, the researcher explained the purpose of the research, and then the participants were asked to fill out the questionnaire in 10 minutes. During this time, the researcher was on standby, ready to answer any questions from the students.

Phase 2: After analyzing the results from the questionnaire, 10 participants (5 students and 5 teachers) were selected randomly to conduct the interview. During the interview, the answers were recorded at the researcher's request and the interviewees' approval.

Data analysis method

When the procedure of collecting data is finished, they will be analyzed by both quantitative and qualitative methods through questionnaires along with interviews, respectively.

Quantitative method

The first method used is the quantitative method. This is done after data is obtained from the questionnaires. This process utilized Microsoft Excel for interpreting data since it allows users to insert figures and numbers. To be specific, Microsoft Excel was used to count the frequency of participants choosing each criterion in questions 1 and 3, then calculate their percentage as well. In question 2, a 5-point Likert Scale was also analyzed by frequency and percentage.

Qualitative method

With the purpose of gathering more detailed data, a semi-structured interview was conducted. The researchers interviewed three individuals in order to figure out the underlying reasons why they chose each criterion ticked in the questionnaires. Thus, the study would have a more thorough look into students' attitudes toward task-based activities.

The interview data interpretation was followed by Dudovskiy's framework (2018):

*"**Word and phrase repetitions** – scanning primary data for words and phrases most commonly used by respondents, as well as words and phrases used with unusual emotions;*

***Primary and secondary data comparisons** – comparing the findings of interview/focus group/observation/any other qualitative data collection method with the findings of literature review and discussing differences between them;*

***Search for missing information** – discussions about which respondents did not mention aspects of the issue, although you expected them to be mentioned;*

***Metaphors and analogies** – comparing primary research findings to phenomena from a different area and discussing similarities and differences."*

Results/Findings and discussion

During the year from 2020 to 2021, online learning at Hanoi University of Industry was carried out using Zoom software so that teachers and students could carry out online learning activities according to the timetable arranged in the classroom. In addition, the teachers have applied a number of web-based applications like Padlet, Google Classroom, and Quizizz to make the lessons interesting, and teachers can control the participation of students in activities.

The authors have designed exercises, quizzes, homework, and assignments on Quizizz, Google classroom, and Padlet for warm-up activities, practice, regular tests, and review activities in Basic English for Mechanical Engineering 3 and Basic English for Mechanical Engineering 4 classes. This solution was used for the first time in the 2019-2020 school year at a time when students had to take a break from school because of the Covid 19 epidemic. When they were new to online learning, both teachers and students were confused about getting used to teaching and learning online platforms. In other words, many difficulties in the teaching and learning process came up at that time. But thanks to the combined use of online teaching support tools, the teaching, and learning of teachers and students became more convenient. Students gradually got acquainted with Quizizz, Google classroom, and Padlet, and every lesson became more exciting and engaging. Teachers also easily track the progress of students' homework.

Table 1.

Students' attitudes when using Quizizz, Google classroom, and Padlet software in learning English for Mechanical Engineering 3 and English for Mechanical Engineering 4

Attitude	Number of students	Percentage (%)
Very excited	354	90,1
Like	21	7,4
Normal	7	2,5
Dislike	0	0
Not care	0	0
Total	382	100

The survey results show that most students like Quizizz, Google classroom, and Padlet used in *English for Mechanical Engineering 3 and English for Mechanical Engineering 4* lessons. Up to 97.5% of participants expressed their likes and dislikes, only 2.5% of students were abnormal when participating, and no students showed any dislike or interest. Thus, the regular use of Quizizz, Google classroom, and Padlet in *English for Mechanical Engineering 3 and English for Mechanical Engineering 4* classes have made a positive impact on students.

The authors conducted a survey to more comprehensively assess the impact of learning games on Quizizz, Google classroom, and regular Padlet in *learning English for Mechanical Engineering 3 and English for Mechanical Engineering 4* lessons. The results are shown in the table below:

Table 2.

Impact of regular use of Quizizz, Google classroom, and Padlet in learning English for Mechanical Engineering 3 and English for Mechanical Engineering 4 lessons

Impact	Totally agree		Agree		Disagree		Totally disagree	
	Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)
Enjoy studying	357	91,1	25	8,9	0	0	0	0
Understand the lesson better	337	84,1	37	13,1	8	2,8	0	0
More interest in the lesson	382	100	0	0	0	0	0	0
Remember the lesson more	347	87,7	28	9,9	7	2,4	0	0
More participation	352	89,4	20	7,1	10	3,5	0	0

From the above table, it can be seen that the regular application of Quizizz, Google

classroom, and Padlet software in *English for Mechanical Engineering 3 and English for Mechanical Engineering 4* lessons have a positive impact on the students.

The students all expressed the agreement that they prefer to study the subjects. Meanwhile, 13.1% of students agree, and up to 84.1% of students completely agree with understanding the lesson better when learning through Quizizz, Google classroom, and Padlet software, only 2.8 % of comments selected disagree. When participating in learning on Quizizz, Google classroom, and Padlet, they can compete directly with their friends, so they are more motivated to try their best. This is the factor that makes students excited to participate in exercises on Quizizz, Google classroom, and Padlet software, which helps them improve their learning results after each lesson.

100% of students think that learning through Quizizz, Google classroom, and Padlet applications makes them excited to participate in learning, and up to 87.7% of students completely agree that they will remember the lesson longer after playing games related to the knowledge section. The applications of Quizizz, Google classroom, and Padlet software also contribute to helping students enhance cooperation through discussion, exchange, and mutual connection when students work on exercises together in an assigned group on the software.

Advantages and disadvantages of applying online software

Advantages when applying online software

Economic benefits

When using Quizizz, Google classroom, and Padlet software regularly while learning English for Mechanical Engineering 3 and English for Mechanical Engineering 4 lessons, we have the following economic benefits from the results of the interview with five English teachers at Hanoi University of Industry:

- ✓ Quizizz, Google classroom, and Padlet software are tools that are free to use; therefore, teachers can use effective teaching aids without investment costs.
- ✓ When using these types of software for the purpose of testing, controlling, and evaluating, will save teachers time and effort due to the automatic grading system. While students do activities, the teacher can observe and know which students are not paying attention to the lecture.
- ✓ Since these websites allow all accounts to do quizzes or tests online, it can save the cost of photocopying worksheets on paper.
- ✓ At different times, teachers can adjust to suit each student, teaching plan to use when teaching

Social benefits

For students, when participating in learning on these kinds of software, they can improve their sense of self-study and skills. In addition, it can help create learning excitement because these applications provide various types of questions and exercises in various forms and vivid visuals. Since then, students' interest and love for the subject will contribute to motivating them to improve and improve their learning results.

For teachers, these are easy-to-use tools that support teachers in marking assessments and

control students' participation in activities automatically so that teachers know their learning ability. From there, teachers can adjust the teaching plan to suit the level of students and support students in learning so that they can maximize their abilities. Through the use of these softwares, teachers improve their skills in applying information technology in teaching, improving their skills in designing valuable tests in the online form. Creating an attraction to attract students to participate enthusiastically, voluntarily, and excitedly in the classes. In addition, teachers can reduce the time for grading and correcting students' papers and promptly update common mistakes in the process of training students' skills, contributing to improving teaching quality. Teachers meet the requirements of innovation in teaching and learning, diverse forms of regular assessment, and an unlimited number of tests.

Disadvantages when applying software

During the survey, it can be seen that, despite the timely preparation and adaptation, the applications of these softwares still face some difficulties for teachers and students caused by subjective and objective factors.

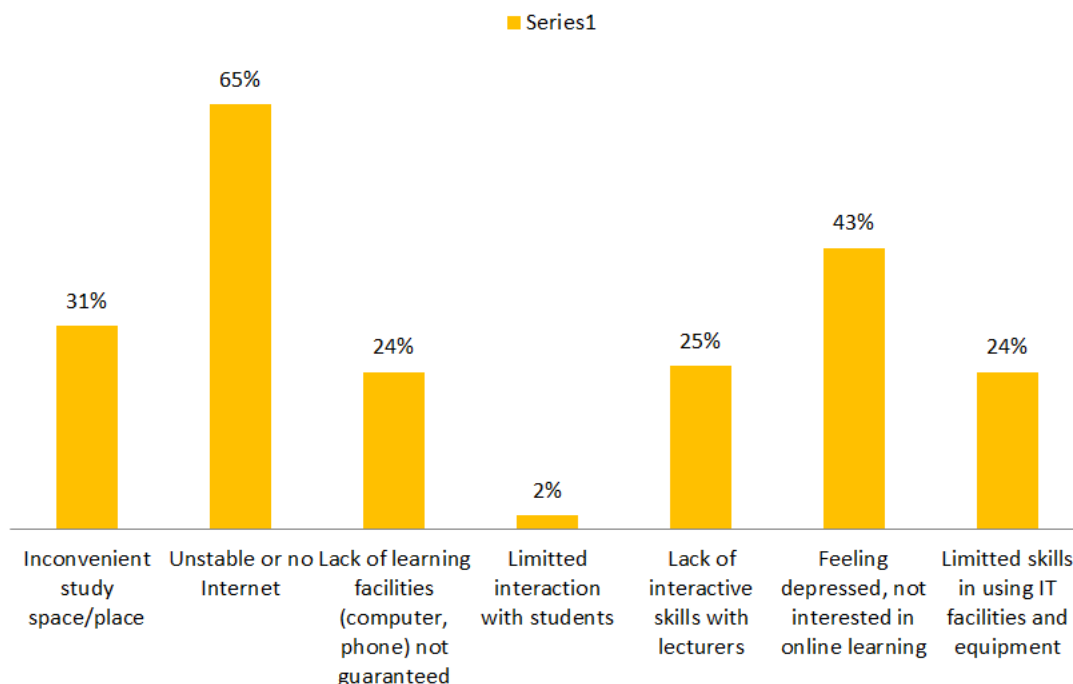### *Subjective factors*

To the teachers

Most teachers involved in the interview said that they need to have a certain level of IT proficiency in order to create activities on such software.

The majority of teachers have to spend a lot of time designing activities to suit the content of the lesson.

To the students

To participate effectively in activities, students need a certain level of technological proficiency and appropriate learning methods to participate in classes and interact in cyberspace.

In traditional classrooms, the process of transmitting and receiving information is direct and fast. Students can directly respond and give opinions. This face-to-face interaction makes the learning process easier, richer, and more receptive. However, the complete transition to online learning has caused many difficulties for learners due to the lack of necessary learning skills, and the survey results clearly show this. Specifically, 25% of students said that they lack interaction skills with lecturers and limited skills in using information technology equipment and facilities, accounting for 24%. Notably, the percentage of students who are depressed and not interested in online learning accounts for 43%. It can be said that the mental state of students during the learning process also reflects the effectiveness of online learning. Online learning for a long time, students have to spend a lot of time in front of computer screens, lack of communication between lecturers and students, leading to psychological fatigue for most students. Therefore, the fact that students feel bored and uninterested is one of the biggest disadvantages of online learners. The lack of direct relationships prevents interaction in the learning process and can leave students feeling unmotivated to learn. This will greatly affect the quality of students' learning because psychology is considered a core factor and plays a very important role in determining learning efficiency.

Figure 1: Some difficulties students face when learning online

Objective factors

According to the survey results in Figure 1, devices and spaces to support learning are considered as one of the biggest difficulties for students in online learning. In particular, the unstable network connection and internet connection is the difficulty of most of the students participating in the survey (accounting for 65%). For students participating in online learning, a reliable internet connection is a prerequisite for their own learning. A weak internet connection can greatly affect the monitoring and acquisition of knowledge by students during the lessons. Besides, other difficulties in terms of learning conditions, such as unfavorable study space with a rate of 31%, as well as the absence or unsafe learning facilities, have significantly affected the online learning process of students (accounting for 24%). In addition, when studying at home, up to 29% of students said: "I am affected by ambient noise during online learning". One student said: "Currently, I personally feel that studying online is not very difficult, except that the environment around my house is sometimes a bit noisy because the place I live is a bit special. Selling and repairing electronics, so I regularly fix speakers, try music, radio broadcasts, etc. So there are times when I want to interact via text messages."

Thus, it can be seen that students are currently suffering from many subjective and objective factors affecting their online learning activities. However, in general, the main cause was pointed out to be the problem of internet connection, study skills, and some manifestations related to psychological factors in students' learning process.

Solutions to improve the effectiveness of online teaching and learning

From the analysis of the difficulties lecturers and students face in online teaching and learning, we propose some solutions to improve the quality of online teaching and learning.

To the students

First, students should read materials and prepare lessons before learning online to have deeper knowledge and easy entry. At Hanoi University of Industry, students who have a website that provides background knowledge before students join the faculty, students need to seriously spend time studying carefully and taking notes knowledge in notebooks so that the lesson with the teacher is really effective.

Secondly, online learning, self-discipline, and online learning culture will be the premise for you to study effectively. Students must have a high will to study, maintain a regular study schedule, and must not be negligent.

Third, students should also actively discuss ideas when studying online, avoid turning off the microphone, turning off the cam, and being silent during class time.

To the teachers

First, with online learning, the way the lecturer speaks or presents the lecture continuously for a long time can distract learners. Therefore, they need to save lessons to help learners have the opportunity to review the lectures more easily and effectively.

Secondly, it is advisable to innovate the method of interaction between teachers and learners through online learning. Lecturers can use software such as Padlet, Quizizz, Wordwall, Room Division on the zoom application, etc., to increase the interaction between lecturers - students, students - students.

Third, lecturers need to improve initiative, positivity, and self-discipline, which is highly appreciated in the current teaching and learning conditions in order to promote students' positivity. However, in online teaching, this requirement is really challenging. Therefore, teachers themselves need to have well-prepared lesson plans to attract and motivate students. In fact, preparing for an online lesson takes twice as long as an offline one. Teachers need to pay extra attention to understand the main content of the lesson. If teachers do not build their own initiative, positivity, and self-discipline, they can quickly fail in their online teaching plan.

Besides, the application of information technology in teaching has long become a requirement of every lecturer. Especially with online learning, the use of information technology is the key to success. The purpose of online teaching is the same as traditional teaching. Nothing else is to help learners create and consolidate knowledge about a certain topic. Therefore, schools should have refresher courses on information technology applications so that teachers can use them effectively in preparing lessons.

Conclusion

In this article, the authors have introduced the concept of technology's role in education, online learning, and other forms of online learning. At the same time, the authors analyze the difficulties that lecturers and students face when applying some support software in the process of teaching and learning online and propose some solutions. With the study analyzing the difficulties of lecturers and students when applying some supporting software in the process of online teaching and learning at Hanoi University of Industry, it hopes to help teachers and students improve the quality of online teaching and learning.

Acknowledgement

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