PERCEPTION OF STUDENTS AND INSTRUCTORS ON VIRTUAL LEARNING: A CASE OF DUY TAN UNIVERSITY

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ABSTRACT

The goal of this paper is to provide a brief overview of the perception of students and instructors on virtual learning. The first section of the paper introduces the transformation of traditional learning methods to virtual ones due to the COVID 19. The following sections explore the various aspects of virtual learning and ways to collect and analyse data. The data was collected from both students (23 items) and instructors (21 items) by using online questionnaires. The results show that perceived enjoyment, perceived difficulty, and perceived support have effect on both the perception of students and instructors. However, the number of students is also another issue to impact on the perception of instructors. The findings of this study are able to support the board of management to make corrections in order to enhance the effectiveness of virtual learning.

KEYWORDS

INTRODUCTION

The rise of virtual learning during the COVID-19 pandemic have highlighted the need for more effective and efficient education. According to UNESCO, as of March 2020, over a million learners had been prevented from participating in regular education due to the pandemic (Owusu-Fordjour et. al., 2020). To ensure that their education is not disrupted, learners were provided with alternative methods, such as virtual learning at home. Due to the increasing number of virtual learning courses, learning has changed significantly (Nikolić et. al., 2019). Some experts believe that the rapid emergence and quick transition to virtual learning may lead to unsatisfactory user experiences. Others believe that a new model of teaching might emerge that could provide a more effective and efficient solution (Alber et al., 2019). The goal of this study was to enhance the effectiveness of the virtual learning programs of DTU by conducting a survey to gather data on the perceptions of learners and teachers. The survey was conducted in March to May 2022. The results of the survey were validated through a pilot study that was conducted on selected teachers. After the teachers' approval, the survey was disseminated to all DTU constituents. The study's objective was to provide a well-rounded analysis of the perceptions of students and instructors.

THEORETICAL BACKGROUND

Virtual learning is a type of learning that uses digital tools and content to facilitate interaction between students and instructors (Kumar et. Ai., 2021). This type of learning can also involve online games and activities. Virtual learning can reduce the cost of training by up to 30% (Sodiqovich et. Al., 2020). Besides being more cost-effective, the elimination of travel and instructor expenses, time away from work, and enhanced features of traditional classroom training can help make the grade. In 2009, Obringer noted that there are four types of virtual learning:

- A knowledge database is one of the most basic virtual learning tools.
- Online support, which is like a knowledge database in that it functions similarly to a knowledge management system.

- Synchronous training, which is conducted in real-time with a live instructor.
- Asynchronous training is a type of virtual learning that is conducted in a more traditional manner.

The increasing popularity of virtual learning has raised significant technological issues that need to be addressed to develop effective and efficient learning resources. The interactions between the community and the virtual learning environment are very important to support learning. The various developments in this area have created new forms of interaction that can be used for learning. These include the creation of a new learning community and the development of new relationships between computer and learner.

CASE STUDY DESCRIPTION

Duy Tan University was founded on November 11, 1994. It is regarded as the largest and most diversified university in Central Vietnam. Duy Tan University has been continuously improving its education and training programs since it was established over 27 years ago. Over the years, the university has been able to enroll over 3,108 students in its master's and PhD programs. It also has 109,130 undergraduate and associate degree students. Despite the outbreak of the pandemic, DTU was able to successfully hold its examinations and meet its graduation deadlines. Using various online learning applications, such as SAKAI, MyDTU, and Zoom, it was able to provide its students with a convenient and effective education.

All the university's courses and support materials are now available in both Vietnamese and English through its virtual learning platform. With just a single myDTU account, students can easily access all of the university's courses and support materials (Figure 1).

DTU has heavily invested in the development of SAKAI and Zoom in order to assess the performance of its students. SAKAI is the eLearning platform allows DTU students and lecturers to interact with assignments and now, connect to online learning via Zoom Cloud Meetings). Through these two applications, the university's lecturers can create online exams and assign assignments on time. They can also monitor the performance of their students through a special testing service. To ensure that their cameras are turned on, all online students must always turn on their devices during exams and lessons. Bonus points are also given for answering certain situation questions (Figure 2).

In addition, various activities such as role-play games and short tests are also conducted to keep students engaged and improve their teamwork skills. For foreign and Vietnamese instructors, they divide their classes into groups of five to 10 students to discuss their ideas. For many years now, DTU students have been using the university's online portal to view the schedule of their classes, pay their tuition fees, and take exams. With Zoom Cloud Meetings, DTU students can download the app and install it on their phones, tablets, or personal computers to study online in classes according to the daily schedule, or review later. The school also build a system named WinSCP to manage the virtual learning materials and textbooks serving SAKAI (Figure 3).
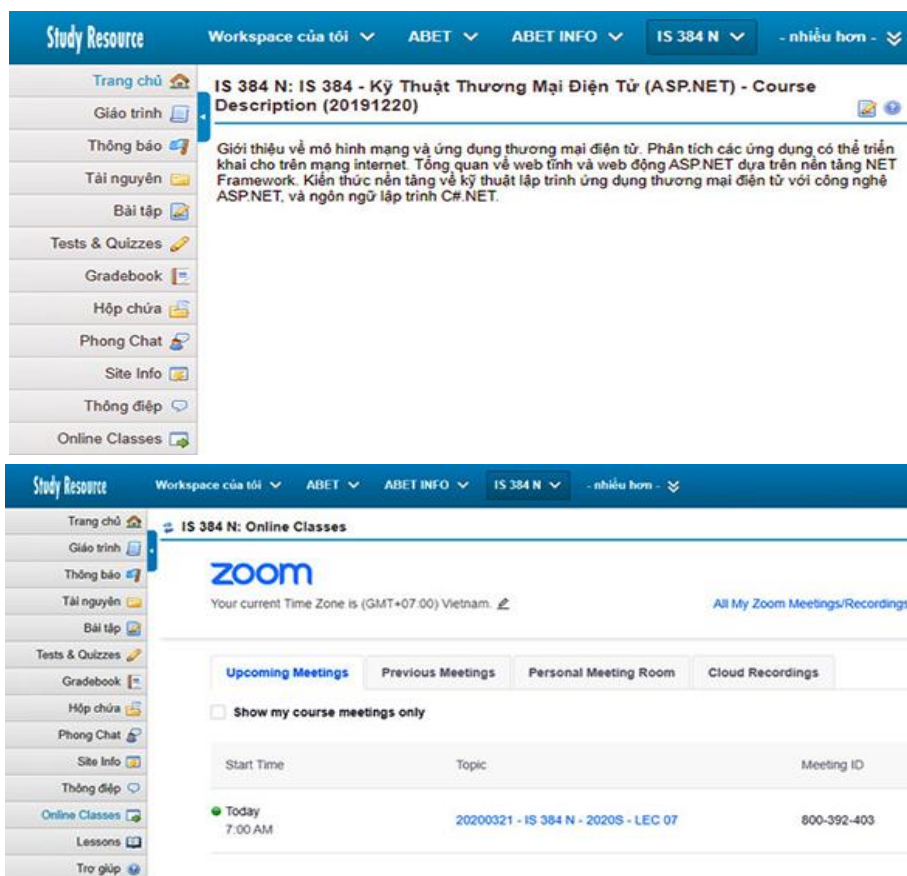
Figure 1. MyDTU platform

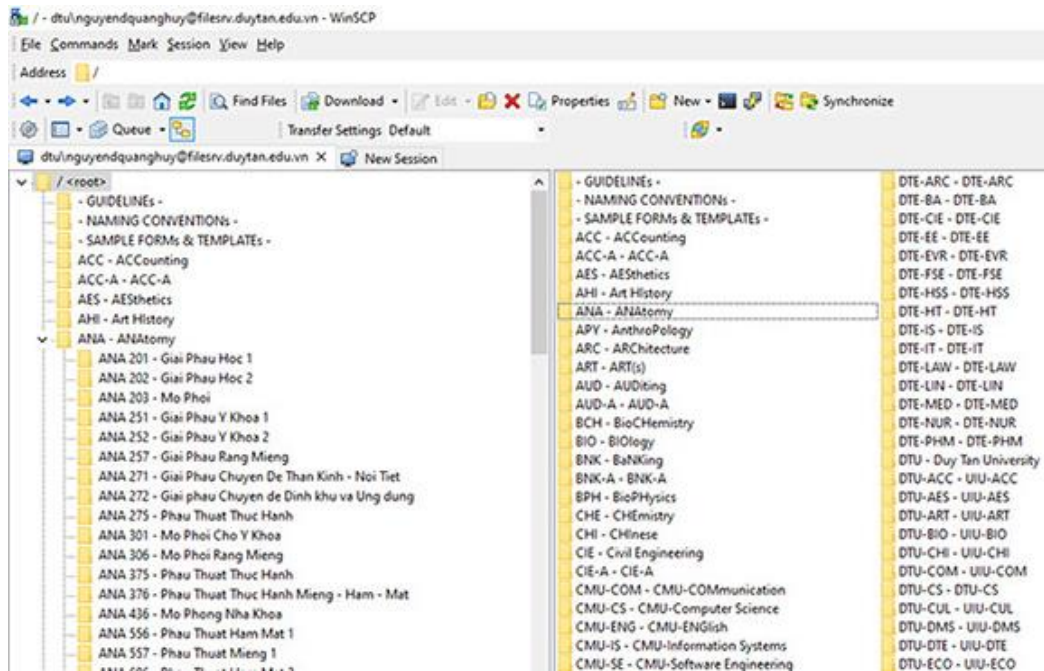Figure 2. SAKAI virtual learning platform

Figure 3. WinSCP system

Both the students and teachers are very punctual. To create an interactive and engaging online class, the lecturer must create a teaching plan that will allow the students to learn each content. They must also have a self-study method at home so that they can get more time to study. The ability to learn through Zoom is a new experience, as it allows students and teachers to interact in real-time. Teachers can also use various teaching methods such as live lectures and interactive slides (Figure 4). Some classrooms are equipped with Wacom plotters to serve the online teaching of Architecture, Fine Art Drawing, Graphics, etc.

To support online teaching, Duy Tan University has quickly upgraded the system of facilities and infrastructure, including: (1) Upgrading transmission lines and expanding Internet bandwidth nearly doubled compared to before; (2) In addition to the existing projectors, 100% of the classrooms are equipped with new wide-angle camera and audio systems for online teaching; (3) Integrate 4 software MyDTU, SAKAI, Zoom Cloud Meetings, and DTU Test/Examination Service to fully serve online learning and exams.
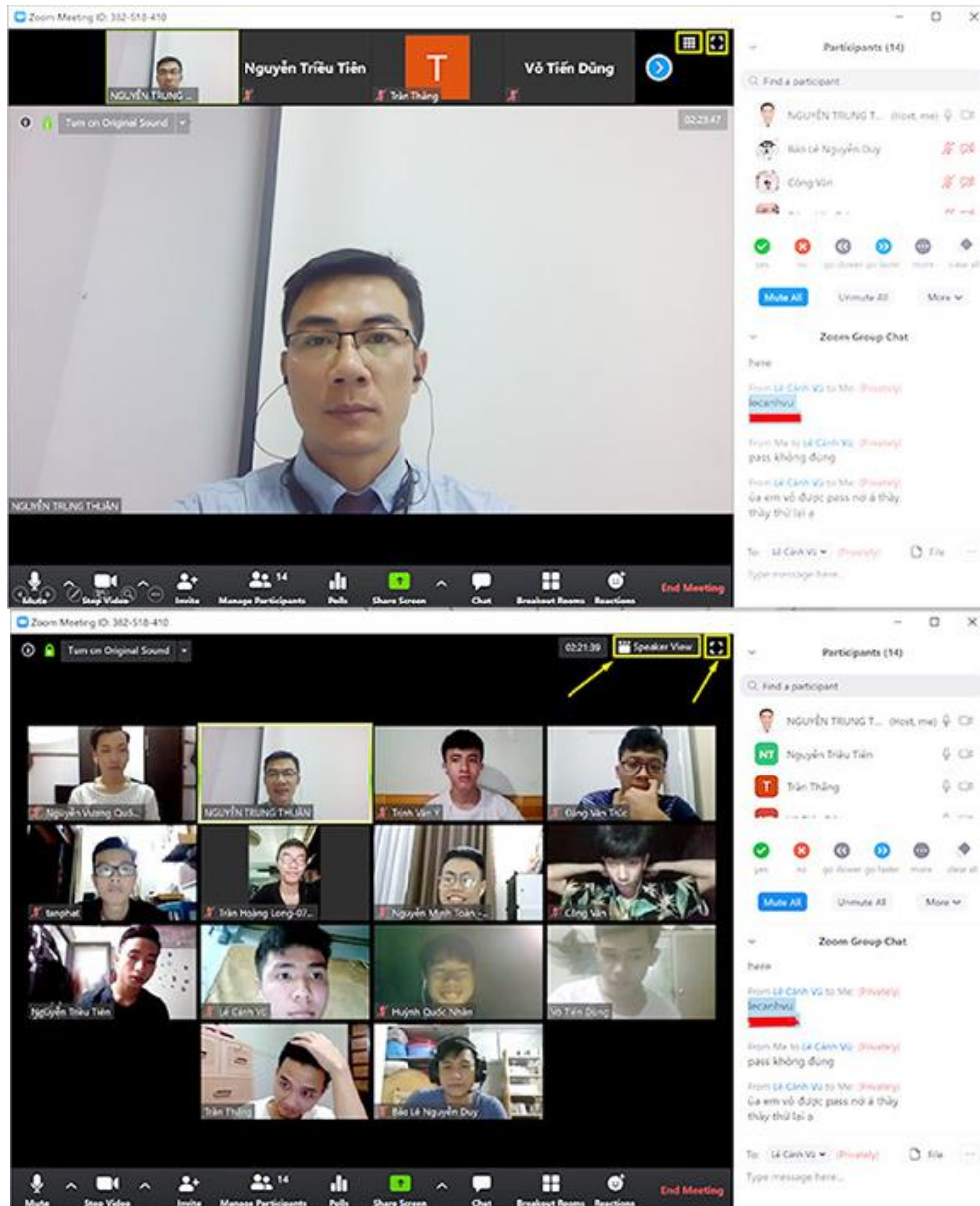
Figure 4. A lecturer is teaching in a classroom

DATA COLLECTION AND RESULTS

Around 20,000 learners use the myDTU web system to access the university's virtual learning facilities. There are also 150 virtual learning classrooms, and 900 teacher use Zoom and SAKAI. In order to counter the pandemic, DTU has heavily invested in online teaching applications. The university's network infrastructure has also been upgraded with the help of various software, such as LCMS. The myDTU web system is powered by 50 servers that are connected to a 10 megabits/s port, which feeds into the national transit station. The university has also purchased 150 high-resolution cameras, which can be used for online classes and exams.

To gather information about the various aspects of the university's online courses, two questionnaires were sent to 500 randomly selected learners. The learners were also assured that their responses would not be disclosed. Demographic features of the sample which received are described as follow: 300 undergraduates, 200 graduates. Through the study, the university was able to gain a deeper understanding of the perceptions of its learners and teacher about the various aspects of its online courses. By using SPSS and QDA miners the data was analyzed. The former was used for the quantitative data while the latter was used for the qualitative data. The results show that learners use variety of devices to take online courses: laptop (85%), desktop (6%), smartphone (8%) and the rest is tablet.

For Perception of learners, the SPSS results show that Cronbach's Alpha of 23 items in questionnaires are over 0.8 then the data has high reliability. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is 0.9 with the significant is less than 0.05 (0.001). The Initial Eigenvalues - first 3 factors are meaningful as they have Eigenvalues > 1. Factors 1, 2 and 3 explain 35.12%, 18.73%, and 7.49% of the variance respectively – a cumulative total of 61.35% (total acceptable). The Extraction Sums of Squared Loadings provides similar information based only on the extracted factors.

Table 1. Total Variance Explained (for learners)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.080	35.128	35.128	8.080	35.128	35.128	6.438	27.993	27.993
2	4.308	18.730	53.859	4.308	18.730	53.859	4.326	18.810	46.803
3	1.724	7.497	*61.356*	1.724	7.497	61.356	3.347	14.553	61.356

Extraction Method: Principal Component Analysis.

Principal Component Analysis also show there are three groups of factors. Basing on the definition of each items we come up with the names of these factors as follows:

- Factor 1 - Perceived Enjoyment refers to the perception that using the virtual learning platform is enjoyable, pleasant and interesting. It may be explained as the fun, excitement, or pleasure derived from using a particular product, service, or technology.
- Factor 2 - Perceived Difficulty has been conceptualized as the perception of the ease or difficulty of performing a specific activity in many other areas, such as psychology, education, and management. So, if the task is perceived to be too difficult, then people expect that their chance of success is low and attribute failure to the perceived difficulty.
- Factor 3: Perceived support, refers to support actually received—the specific helping and supportive actions provided by friends, family, team-mates, and coaches.

We also collect data from 300 instructors to get information related to their perception. The SPSS results show that Cronbach's Alpha of 21 items in questionnaires are over 0.7 then the data has high reliability. The Initial Eigenvalues - first 3 factors are meaningful as they have Eigenvalues > 1. Factors 1, 2 and 3 explain 18.1%, 16.2%, and 10.9% of the variance respectively – a cumulative total of 90.46% (total acceptable). The Extraction Sums of Squared Loadings provides similar information based only on the extracted factors.

Table 2. Total Variance Explained (for instructors)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.812	18.152	18.152	3.812	18.152	18.152	3.178	15.134	15.134
2	3.410	16.240	34.391	3.410	16.240	34.391	2.972	14.154	29.289
3	2.304	10.973	***45.364***	2.304	10.973	45.364	2.658	12.655	41.944

Extraction Method: Principal Component Analysis.

Principal Component Analysis also show there are three groups of factors. Basing on the definition of each items we come up with the names of these factors as follows: (1) Factor 1 - Perceived support, (2) Factor 2 - Perceived difficulty, (3) Factor 3 - Perceived enjoyment, and (4) Number of learners.

CONCLUSION

The results show that perceived enjoyment, perceived difficulty, and perceived support have effect on both the perception of learners and teacher. However, the number of learners is also another issue to impact on the perception of teacher. The findings of this study are able to support the board of management to make corrections in order to enhance the effectiveness of virtual learning. Therefore, DTU has invested billions of VND to subscribe to Zoom and SAKAI is used in conjunction to assess student performance. Lecturers can create online exams, which are then automatically shut down on schedule and can devise essay projects for learners, who then submit their assignments on time using Dropbox. In addition, the specially developed DTU Testing Service can manage thousands of users at the same time and measures the performance of each student in all subjects over the years, through its questions-bank system.

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BIOGRAPHICAL INFORMATION

Dr. Nhu-Hang Ha is the Vice Dean of Graduate School, Duy Tan University. She received a Bachelor's degree from the Foreign Trade University of Vietnam in 2005. She got her Master's degree in 2009 from Shu-Te University and her Doctorate degree from Yuan Ze University in 2015, both in Taiwan and in Information Management. Her research interests involve Knowledge Management, Project Management, Collaboration, and Human-Technology Interaction. Currently she is also a member of CDIO implementation team of Duy Tan University for the Peer-to-Peer Review and Support. She is the co-chair of the Asian Regional CDIO conference in 2017 at Duy Tan University.

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Ms. Thu-Van Van is the Vice principal The East Gia Lai's Ethnic Minoroty Boarding high school. She received a Bacherlor's degree from Quy Nhon University in 1997. She worked as teacher of English at Quang Trung high school from 1997 to 2004. Teaching English at Nguyen Trai high school as Dean of English Department from 2004 to 2012. She learned MA of English Linguistics at Quy Nhon University, and got Master's degree in 2014. In August 2014, moved to teach English at Dong Gia Lai Ethnic Minority boarding high school. Since March, 2017 became The Vice Principal at DGL EMBH. She joined the Microsoft Educator Community and has been a member of MIE since 2020.

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