



Online Learning Competencies of Students: Research Results at Ho Chi Minh City University of Technology and Education

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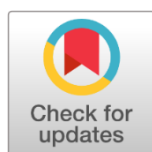
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Abstract: The 4th Industrial Revolution gives us a new protocol in learning named “Online learning”, this new kind on learning is special suitable with the quarantine condition cause by COVID-19. However, we are lack of knowledge how to increase results of online learning. This research based on the survey in students who difference in result in the same time using online learning. Thanks for this research, we have some first theories about the competences for students on new learning environment. These theories can be very useful when we want to increase the learning results.

Keywords: Online learning, Learning competencies, Online learning competencies, Online learning results, Increasing the result of online learning, Optimal results of online learning.

Introduction

In the development of Science - Technology, human knowledge is increasing, learning demands of learners are increasingly too, many different types of non-traditional learning appear (Bui Van Hong, 2019). In which, the most prominent and attracting the most attention in education is online learning (Online Learning), a digitalized version of traditional learning in the internet environment. In addition, the impact of Industry 4.0 on education, IoTs technology (Internet of Things), artificial intelligence (AI), virtual reality technology (VR), big data (Big data) mobile network 5G and global wifi, cloud computing (Icloud) have made the process of digitizing teaching in general and online teaching in particular faster and faster (Molisa, 2018; Justin Ferriman, 2019). With high flexibility, diversity and globalization in the collaborative interaction that online teaching brings to both teachers and learners, it shows that the goal of online teaching is to meet the diversity demands of learners. However, in the learning process, each learner has cognitive characteristics and ability to adapt to

different applications of technology in learning. This has a direct impact on the learners' results of online learning. Therefore, it is necessary to research online learning competencies, thereby proposing the development of online learning competencies for Vietnamese students in the current context.

Over the years, online teaching has opened up many opportunities for the need to access specialized knowledge in unprecedented methods. Through a globally connected internet system, our distance is almost reduced to a minimum. The world has really taken e-learning seriously since the early months of 2020 when an unprecedented event in human history, COVID-19 acute respiratory distress (beginning to appear in the last months of 2019) with a rapid global spread. Up to the time of this study, there were 26.9 million infected people worldwide, 17.9 million people recovering but also killing 880,000 people (WHO, 2021). Besides the influence of covid 19 in recent times, online learning has been selected for the most popular reasons as follow (Theodore Cabot Smith, 2005):

- Lack of time (often due to conflicting demands with family and work responsibilities),
- Lack of money (e.g., lack of financial aid),
- Quality of advising (e.g., lack of contact with advisers, incorrect advising),
- Quality of teaching, and
- Peer interaction (e.g., lack of community among distance students, age differences).

These reasons may also serve as the basis for assessing students' online learning competencies. (Kasiyah et al., 2017) assessed students' e-learning competencies in online learning environment based on questionnaires, discussion transcripts, and in-depth survey, and found that students have a good technological competency, have moderate competency in interaction with learning content, and lack of interaction skills with their learning community. This result shows that it is necessary to research to improve students' e-learning competencies. In Vietnam, have experience in dealing with diseases from before, especially SARS strain in 2002 with fast, strong and timely guidance policies, after nearly 1 year of dealing with pandemic with 3 big waves, we there were 1049 cases, 789 had been cured and 35 died, mainly due to severe underlying disease in the late stage (WHO, 2020). One of the things contributing to the success of epidemic prevention in Vietnam comes from the policies of isolating the entire population and delaying school operations. It is in this situation that the online teaching method through the first platform, Zoom, has gradually become popular and promoted nationwide. After that, we in turn operate on many different platforms such as Jitsi, Skytype and most popular is Googlemeet. Online learning has been around for a long time, but in the context of a complex epidemic it has become a salvage tool for education in the most difficult conditions. Many encouraging achievements have been recorded, but not everyone is highly effective when studying online. The number of successes due to this approach is still very small. What are we lacking, what competencies are needed for students and students to be effective with this new form of organization?

With the goal of identifying the required competencies of learners in a new environment,

the difference between online learning and traditional learning, thereby determining the competencies that learners need in this environment, thereby proposing. In the method of fostering these competencies, the article presents the research results on online learning capacities of Vietnamese students at Ho Chi Minh City University of Technology and Education. (HCMUTE).

2. Research Methods

2.1. Available data research method

The article uses existing data research methods to collect scientific literature and published research results related to online learning, students' online learning and learning competencies. The collected scientific data is used to serve as the theoretical basis for determining online learning competencies for Vietnamese students and to develop a tool to survey the online learning competencies of HCMUTE students.

2.2. Questionnaire survey method

The article has made a survey of 138 students studying in HCMUTE on Autonomy and Self-Study Capacity; Problem solving and creativity in participating in online learning. Survey tool is a set of questionnaires built based on the results of data collection by the available document research method. The survey results are processed by statistical methods, thereby analyzing the assessment of students' online learning ability at HCMUTE.

3. Research Results

3.1. Students' academic competency requirements

According to MOET (2018), through the training process, Vietnamese students develop 05 qualities and 10 core competencies as illustrated in Table 1.

It can be seen that, in the traditional teaching method, despite many years of improvement, it is still aimed to perfect a person in the educational environment, and must have a

clear ethic, right thought, a healthy lifestyle to create. Qualities and must gather sufficient knowledge, precise skills, and appropriate attitudes to form Competencies (MOET, 2020).

3.2. Competencies required for students to study online

- Learning capacities can be understood as the ability to voluntarily define learning goals for themselves; shaping the right learning purpose so that there will be a reasonable action direction; applying proper learning methods to achieve optimal efficiency (Nguyen Ton Nhan, Phu Van Han, 2020). Academic competencies play an important role in any form of learning. According to a survey conducted, students with clear learning purposes often shape themselves self-study methods, allocate a reasonable timetable to achieve work efficiency shown through. Results are shown below. Learning capacities need to be formed early and formed in the form of habits. Humans are similar to other creatures, we can grow and develop into an individual of the same species, but some qualities need to be trained from a young age. Likewise, competency is by nature an ability and therefore requires small self-training. Learning capacities can be understood as the

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- Online learning is a form of teaching in which 80% of knowledge is transmitted through an internet connection. This form appeared with the popularity of computer networks and the ability to popularize personal computers. Online learning was first recognized in the early nineteenth century, until now, online teaching is gradually becoming a new form of teaching (Allen, & Seaman, 2007).

Table 1. The qualities and core competencies of Vietnamese students (MOET, 2018)

5 Qualities		Patriotism
		Kindness
		Hard- working
		Honest
		Responsibility
Required competencies	General competencies	Self-command & self-study
		Communication & cooperation
		Problem solving & creativity
	Professional competencies	Language
		Calculation
		Science (learn the nature and society)
		Technology
		Information Technology
		Beauty
		Physical

- When participating in online learning, students need to have the following core competencies (MOET, 2020):

(1) *Autonomy and self-study*: Self-reliance; Self-affirmation and protection of legitimate rights and demands; Self-regulate your emotions, attitudes, and behaviors; Adapting to life; Career orientation; Self-study and self-improvement.

(2) *Problem solving and creativity capacity*: Recognizing new ideas; Detect and clarify the problem; Forming and implementing new ideas; Proposing, choosing solutions; Design and organize operations; Independent thinking.

(3) *Language capacity*: Direct interaction has been replaced by remote interaction through screens of multinational equipment. Therefore, language capacity helps learners to more receptive to knowledge; Due to the technological barriers, virtual interactions have not met some of the requirements of education, so language capacity as a temporary solution to help convey the content to be presented.

(4) *Computing capacity*: In the age of digital connection technology, information technology is essential for both teachers and learners to participate in the network system. Proficient in information technology helps to simplify data retrieval while avoiding common threats on the information network

(5) *Capability to use technology equipment*: online teaching and learning interactions are done in an online environment through electronic devices, so developing the ability to use devices is extremely important. Learners need to know how to use technology devices, online tools and especially search tools to support their learning.

3.3. The results of students' online learning competency assessment

3.3.1. Self-command & self-study

The work environment is related to the globally connected system, where not only has the exercise but also always other things that are more interesting and easily distract the learner's attention. Survey on 138 students studying at HCMUTE for the results as shown below.

It can be seen that, most of the students spend between 1 and 2 hours per day for self-study purposes. Very few, in particular, about 4% of students do not study at home. The data above shows that most students are aware of the importance of self-study and initially have their own way of organizing their time. The survey also found that more than 90% of first year students study at home, 12.5% of them study more than 4 hours a day. This is most likely coming from a habit that has been cultivated through the high school years.

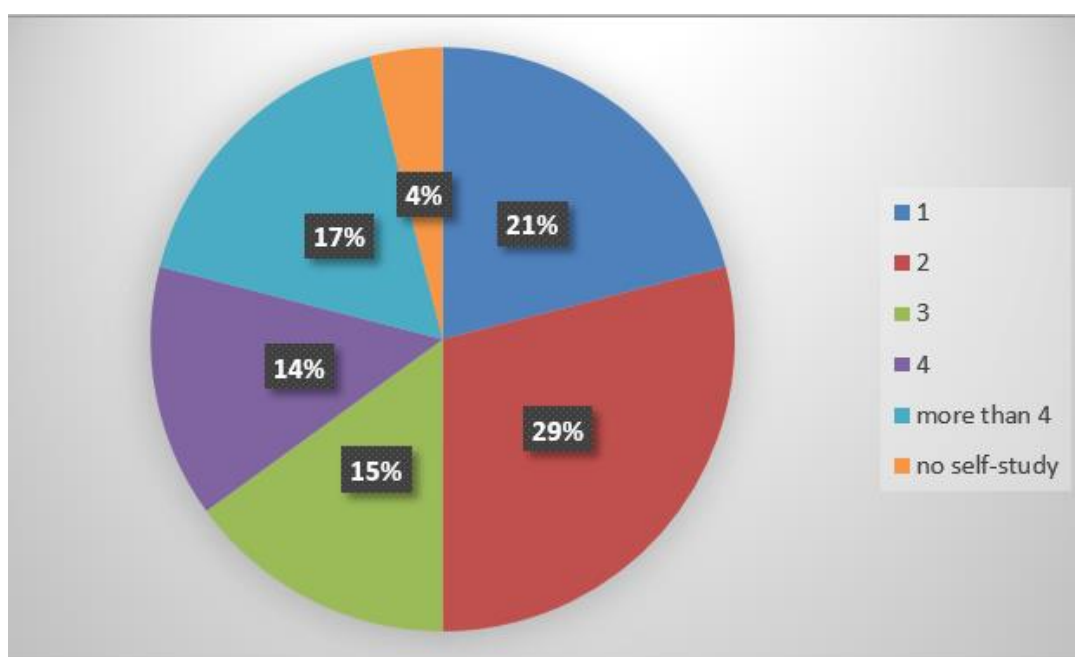


Figure 1. Time for self-study

The reason that more than 50% of freshman students spend less time on self-study during the day is because environmental changes have resulted in so many interesting things and taking time away from self-study. Besides, there is a loose management from the family and the school that leads you to have a break after the National High school graduation exam.

Self-awareness and self-study methods are extremely necessary for you to participate in this new learning environment. All students participating in the survey use computers and cell phones as it is one of the simplest tools to take part in online learning. More than 90% of the students surveyed admitted that they spend a lot of free time surfing the web, watching youtube, watching movies, playing games, ... These recreational activities are available online, easy to use and temporarily no effective management tools. 125/138 candidates said that they often self-study at home (accommodation / dormitory) where you need to have high self-discipline (see in Figure 1).

A temporary solution to this problem is that you, before entering the new learning environment, need to clearly define what you expect, your personal goals when participating in the program as well as participating in the environment. University. Besides, you can refer to some time-lock applications to lock your computer

or phone before starting to use other forms of entertainment. However, the above measures are only temporary, the important thing is in themselves and the will of learners before the attractiveness of the internet.

3.3.2. Problem solving & creativity

Problem-solving capabilities are needed for online learning because this environment has less interaction than traditional methods, but problems are inevitably present. A survey of university students also found that 72 out of 138 respondents said they had problems while participating in online learning. Many issues have been shared by volunteers. Much of it comes from homework and homework requirements and knowledge leaks. In statistical charts, most students tend to find solutions themselves by using the Internet. Next is the priority to ask friends and finally the teacher. This is understandable psychology of most students because most of you are afraid to contact with teachers. Problem-solving capacity needs to be equipped at the same time with creative capacity and quality, competencies because the competencies because this is a basic group capacity that needs much practice to use effectively.

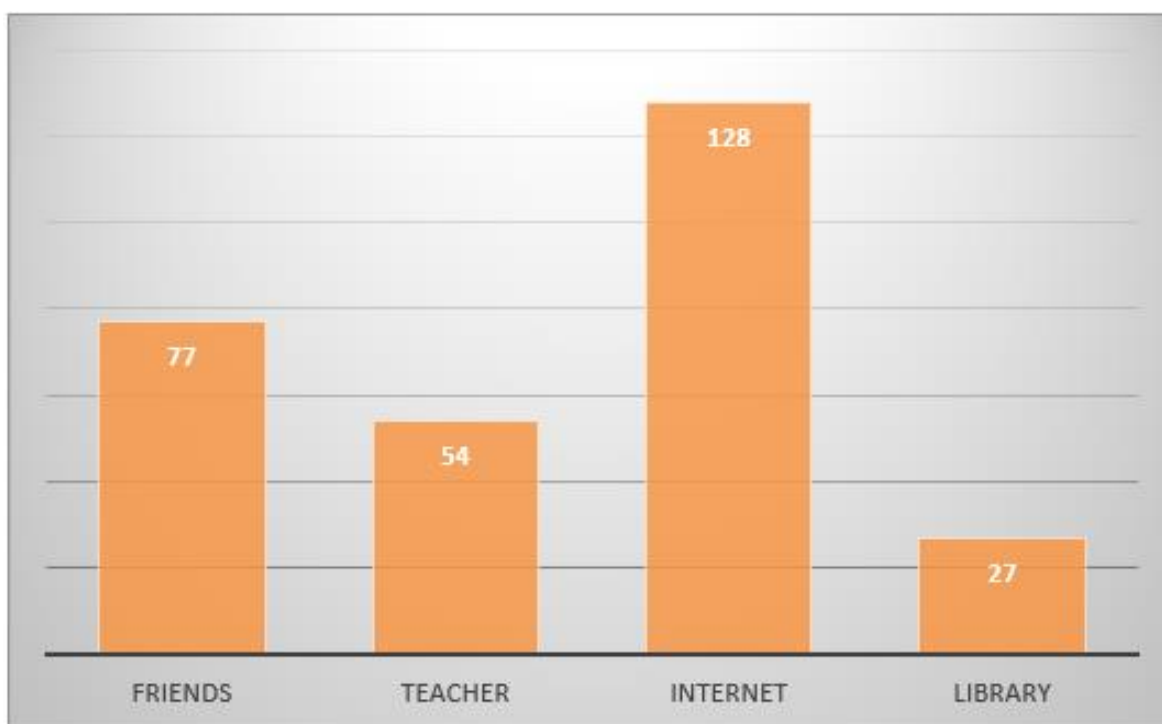


Figure 2. Source looking for student problem solving

This capacity is not only essential for online learning but it also trains them to think and react quickly in future situations.

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4. Conclusion

The Online teaching is no longer a new form, but in the context of the times it has become an important and remarkable issue. In the form of an independent topic on the direction of "Applied Basic Research" with a view to three objectives: 1) Find out the concepts of online learning, learning capacity, innovation trend of the era; 2) Identify the basic theory of learning competencies needed for learners in a traditional environment; and 3) Establish and outlined solutions for fostering a number of competencies needed for online learning.

This is a difficult and new problem not only in Vietnam but also in other countries in the region and in the world. Around the world, many countries have been gradually turning some online training programs such as ASIAN's IELTS online course or National High school graduation exam preparation program operating for many years of Vietnam. However, during the research period, the implementers tried their best to inherit the knowledge and step by step mastered the problem, finally completing the content that the topic posed.

Although not really satisfied due to the time and obstacles of technology, facilities, and supporting tools, the topic has achieved some remarkable results and develops in the permissible conditions in the future.

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