

STRUCTURE AND PROCEDURE FOR DEVELOPING AN ONLINE COURSE

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Received 02/11/2020, Peer reviewed 15/12/2020, Accepted for publication 22/01/2021

ABSTRACT

Online teaching or e-learning allows learners to participate in a virtual classroom environment based on web and based on digital applications or digital tools, to interact with learning content and (possibly) with teacher and other peers from a long distance to achieve learning goals defined by their learning needs. The article provides some theoretical backgrounds of online teaching related to the advantages and limitations of online teaching, the forms of online teaching (synchronous learning, asynchronous learning, blended learning), structure of implementing an online course supporting dialogical and deep learning. The article also shares the experiences of Ho Chi Minh City University of Technology and Education (HCMUTE) in implementing online teaching, especially asynchronous teaching on learning management systems (LMS, FHQLMS) and gives some recommendations for lecturers to improve the quality of organizing online courses. Based on the theoretical analysis method with the literature review and the synthesis of practical education experience from HCMUTE, a four-step and 5W-1H online course design process is suggested.

Keywords: online teaching, synchronous learning, asynchronous learning, blended learning, online course.

1. INTRODUCTION

In the context of increasingly developing science and technology, the amount of human knowledge is increasing exponentially, human beings require many modern, effective and thorough implementation forms of teaching to apply science and technology to create an open learning environment for people to learn anywhere, anytime, learn according to their needs, study on personal progress. The fourth technological revolution (CMCN 4.0) with the development of Internet of Things (IoTs), artificial intelligence (IA), big data (Big Data) and real technology virtual reality (VR) has created conditions for virtual classes, E-learning courses to become popular around the world. In other words, the shift from the traditional education model to the 4.0 education model with a digital learning environment is the inevitable change to meet the requirement of the industrial revolution 4.0.

In particular, the Covid 19 pandemic has put humanity before great challenges, of which educational challenges play a huge role in the general context. The problem, how learners can learn from long distance with online learning while still ensuring quality and efficiency of learning compared to traditional learning styles (face-to-face, classroom study) in case of social distancing is a difficult problem posed for educators, while digital pedagogy is still a relatively new field, research results in the field of digital pedagogy are still limit. To contribute to the development of digital teaching theory, the paper focuses on studying the process of developing an e-learning course and giving recommendations for teachers in improving the quality of online teaching design on the basis of: (1) literature review, analysis, synthesis and systematization of the notions related to designing Online teaching; (2) applying the experience of Ho Chi Minh City University

of Technology and Education (HCMUTE) in implementing Online teaching. This article is conducted in the framework of the ministry-level scientific research program "Research on building an online learning ecosystem in training higher education-level human resources to meet the Industrial Revolution 4.0" supported by Vietnam Ministry of Education and Training with the collaboration of EMVITET Erasmus+ Capacity Building project developing Education 4.0 in Vietnam.

2. LITERATURE REVIEW

2.1 Definition of Online teaching and learning

According to Stern (2020), online learning is an education that takes place on the Internet, which is often called "e-learning" among other terms. Stern supposes that online learning is a kind of "distance learning" - the general term for any learning that takes place over long distances and not in the traditional classroom. Distance learning has a number of types available today, including (1) *Correspondence courses* taking place through regular mail with little interaction, (2) *Distance courses* with learning content transmitted over radio or television, (3) *CD-ROM courses* where students interact with learning content through static computer, (4) *Online learning* referring to Internet-based courses which are offered asynchronously and/or asynchronously, (5) *Mobile learning* using devices such as cell phones, PDAs and digital audio players (iPods, MP3 players).

The authors Popovic, Lindic, Indihar Stemberger and Jaklic (2005) simply define e-learning as the use of the Internet and other related technologies to provide, support and enhance teaching, learning and assessment.

Buzzetto-More (2007) proposes a wider meaningful definition: "E-learning includes all applications of technological solutions to the problem of finding the best match between the needs of a given set of learners with their individual learning demands to learn a given

content, using a given set of learning tools" with the advantage of this definition that it shows at least four relevant aspects for considering Online Learning: (1) learning theories, (2) psychological dimensions and cognitive needs of learners, (3) technology, covering all forms of information and communication technology (ICTs), and (4) specific content to be learnt.

According to Sharma and Kitchens (2005), e-learning refers to learning with web-based training facilities such as virtual universities and virtual classrooms that enable digital collaboration and technology assisted distance learning.

So, based on considering the definitions of online teaching / e-learning by different authors, we suggest a definition for online teaching/ e-learning as follows: Online teaching or e-learning indicates the teaching and learning organization based on web and based on digital applications/ tools, allowing learners to participate in a virtual classroom environment, interact with learning content and (maybe) with teachers and other peers from a long distance to achieve learning goals defined by their learning needs.

2.2 Advantages and disadvantages of online teaching and learning

E-learning has an advantage over traditional learning in that besides the ability to overcome geographical barriers, it also offers the potential for a more flexible, tailor-made learning environment that can be adjusted to suit both the learners' knowledge and skills and their preferred study style (Sambrook, 2003). There are some studies in the world showing that Online teaching also promotes gender equality in learning when there are "no significant differences between the genders in terms of competencies in the usage of general computer software as well as networking software" remained (Atan et al., 2002) and the online discussions in all groups of male and female students had a similar cognitive quality (Bostock, Lizhi, 2005). Similarly, a study by Richter and Zelenkauskaitė (2014) on culture and gender

with Online teaching reveals the proportion of male and female students in different countries (Germany, Ghana, South Korea) on three continents who agree with the concept that "women and men have the same ability in understanding complex technical information" is from 50% to 80%.

On the other hand, a study of Irani (2004) found that in some cases, female learners need assistance in technology related tasks such as computer programming. Besides, research by McSporran and Young (2001) reveals the disadvantage of male learners in self-organizing their learning process and participating in multitasking when they participate in Online learning process. This shows that when designing Online courses, it is necessary to pay attention to supporting some technical aspects for female students (in case of need) and give students, especially male students clear instructions as well as supportive advice related to self-organizing the learning process and participating in multitasking tasks.

In online teaching, the "transactional distance" causes many difficulties for the teaching organization related to the design of learning activities, the interaction between teachers and students, the interaction between students, the control of these interactions. The concept of transactional distance is discussed by Moore (1993, 2013). According to Moore (1993), *transactional distance* is a pedagogical concept indicating the feeling of learners from long distance with their instructor and their peers' experience in interactions with each other and defining the nature of their relationship through this interaction.

2.3 The forms of online teaching and learning

- **Synchronous learning:** Synchronous events happen in real time. Synchronous communication between two people requires them to be present at a certain time. Examples of synchronous activities are chat conversation and audio / video conference, temporarily called video-conferencing

(Ghirardini, 2014). Lawless (2020) defined synchronous learning as a kind of learning that takes place in real time, where a group of people are participating in learning at the same time, but learners don't have to be there in - person or even in the same location. This type of learning allows learners to ask questions and get answers on the spot, while collaborating freely with their peers (Lawless, 2020). Thus, synchronous online learning can be understood as a form of learning in which teachers and learners exchange information and interact directly with each other at the same time through digital media without having to meet face to face.

The history of synchronous teaching dates back to around 1996, 1997. Old documents like Knox (1997), Carville and Mitchell (2000), and Fetterman (1996) tend to discuss the effectiveness of video conferencing versus face-to-face meetings and the potential of (synchronous) live video conferencing to provide educational programming to remote learners, who do not have opportunities to access to traditional educational institutions (Yamagata-Lynch, 2014).

Author Yamagata-Lynch (2014) in her research process found that synchronous learning has many **advantages** when compared with asynchronous learning. Yamagata-Lynch points out that learners while engaging in synchronous learning (compared with asynchronous learning) "(a) find a stable means of communication, (b) tend to stay on task, (c) feel a larger sense of participation and (d) tend to experience better task/ course completion rates" (Yamagata-Lynch, 2014, based on researches of Chen & You, 2007; Mabrito, 2006; Hrastinski, 2010). Besides these advantages, Hans (2013) with his research regarding the effect of video conferencing in synchronous instruction on students' sense of connection with lecturer found that in synchronous courses with instructional video conferencing, compared to asynchronous courses that do not use video transmission,

students can overcome a sense of distance from the instructor. It means, *synchronous learning can reduce the transactional distance*. The fact that learners may feel more or less transactional distance in an online course depends on how much dialogue is shared, the structures the instructor gives, and the level of autonomy the learners experience in this course (Moore, 2013).

- ***Asynchronous learning:*** Asynchronous events are time - independent. A private - paced course is an example of asynchronous online learning, where online learning takes place at any time according to the learner's chosen time. Examples of asynchronous communication tools are email or online discussion forums (Ghirardini, 2014). Author Lawless believes that asynchronous learning is more student-centered. It allows learners to complete courses without the constraints of being in a certain place at a certain time. "As long as they have access to the internet, asynchronous learners have the freedom to complete course materials whenever they choose, and from any location" (Lawless, 2020).

Some studies of online asynchronous learning suggest that learners will experience asynchronous learning in a meaningful way when they are in a *participatory learning environment* (Pratt & Palloff, 2011). This environment are purposefully designed to help learners develop a sense of community to give them an opportunity to participate in collaborative discussions. These interactions encourage learners to actively build new meaning related to the course content (Lehman & Conceição, 2011). Yamagata-Lynch emphasizes that the success of community development efforts in an asynchronous learning environment is often related to the extent to which participants feel *present* in the shared space (Yamagata-Lynch 2014). Garrison and Cleveland-Innes (2005) also recognized through a study comparing cases of asynchronous courses where there was only a single interaction of participants, that these courses do not provide a feeling of sharing about social presence or interaction

in an online course. They found that participants in asynchronous online courses need structures laid down by the instructor / designer or the participants themselves to help them participate in meaningful learning activities. By understanding the *presence* and its relationship to the participation of learners in a course from physical, social, emotional, and psychological perspectives, the teacher can understanding the social nature related to learning activities of human beings, which needs to be handled carefully in designing an asynchronous learning environment (Lehman & Conceição, 2011).

- ***Blended learning:*** Blended learning is often considered as the combination of face-to-face and online learning (Williams 2002; Sacher, Sacher & Vaugan 2014). Bleed argues that this is not a sufficient definition for blended learning because it just seems to be adding technology into a traditional course. He suggested that instead, blended learning should be seen as an opportunity to redesign the way in which courses are carefully developed, planned and delivered through a combination of face-to-face teaching and virtual teaching (Bleed, 2001). The goal of this redesigned educational approach is to combine the best features of face-to-face instruction in the classroom with the best features of online learning to foster positive learning opportunities, self-direction of students with greater flexibility (Garnham & Kaleta, 2002). This view is consistent with opinion of Garrison and Vaughan (2008), who stated that blended learning is an organic integration of carefully selected face-to-face teaching methods and Online approaches and technologies. Likewise, author Bersin (2004) has defined blended learning as combining different training media (e.g. technology, activities and events) to provide an optimal training program for a particular audience, of which the term "blended" means that traditional instructor-led training is being supplemented by electronic formats. Blended learning is a very popular form in implementing e-learning in higher education. (Arabasz et al., 2003) in a

survey of e-learning activities found that 80% of all higher education institutions and 93% of doctoral institutions offer hybrid or blended courses.

Regarding to the implementation of blended learning, contrary to the Bleed's opinion, Bersin (2004, cited by Ghirardini, 2011) determined two main models of blended learning as:

(1) *Program flow model*: Learning activities are organized in linear, sequential order and learners have different tasks to complete with a certain deadline; this is similar to traditional training, but some activities occur online.

(2) *Core-and-speak model*: A core course (e-learning) is provided and a set of additional materials are available to teach face-to-face to strengthen the core course; these documents are optional and are not scheduled.

Considering the opinions of different authors, especially the opposite views of Bleed and Bersin, we identify three different model of implementing blended learning:

(1) *Structured blended learning model*: According to this model, the teacher organizes learning activities in linear order in accordance to the subject's content with a strict plan which is designed from the beginning, determines what activities are done in the classroom and what activities are done online. The percentage of learning activities done in class and done online is approximately 50-50. The way of implementing activities in the classroom as well as implementing online is planned by the teacher based on the learning goals and the characteristics of the learning content.

(2) *Blended learning model of "face-to-face teaching supplemented with e-learning"*: In this model, teachers organize face-to-face teaching, however, some learning activities are designed for learners do it online (for example, do homework/ assignment online, reinforce knowledge online, self-study online in case learners miss the opportunity to

attend class or do research online on certain parts of the subject with the instructors' electronic instructions)

(3) *Blended learning model of "e-learning supplemented with face-to-face teaching"*: Under this model, teachers provide a main "package" of online learning (which can be delivered in the form of synchronous or asynchronous learning), learners will attend this online package. After that, teachers and learners can negotiate a few face-to-face meetings to clarify knowledge learned online as well as consolidate knowledge.

2.4 Structure of implementing an online course supporting dialogical and deep learning

Based on the DIANA model of Aarnio & Enqvist (2016), author Sanna Ruhalahti (2019) has developed a DDD model that emphasizes dialogical, deep learning in digital environment with six main phases:

(1) *Self-paced orientation and internalising*: This is the phase of self-paced individual orientation, students work according to their actual development level (ADL). In this phase, students receive a personal learning task that needs to be handled with the theoretical resources provided (e.g. online materials, video etc). The purposes of this individual assignment at this stage are: (1) to create a framework for students with an orientation to the learning topics through the provided materials, (2) to help learners reflect on their experiences (3) to initiate the internalization according to the learning objectives of the study module. Acquiring knowledge personally and at their own pace is paramount for students to gain deep learning. At this phase, learners are allowed to complete individual assignments at their own pace.

(2) *Prepare for dialogical participation*: This is the phase of initiating the potential development level of students (PDL). Dialogical actions and methods are integrated into this learning process. Teachers can use a

variety of teaching methods / techniques for each situation to increase students' dialogical awareness and attitudes, such as *dialogue tickets*, *word-for-word listening*, *open questions* etc.

(3) *Enabling authenticity in learning*: Teacher ask students to pose profound authentic learning questions individually or in groups according to learning goals. These authentic learning questions allow students to integrate competence development with real-life contexts and personal experiences, fostering commitment and accountability.

(4) *Increasing deep - oriented learning through dialogical collaborative knowledge construction*: This is a phase based on previously established learning questions and theoretically dependent upon the knowledge created. Conversational / interactive actions and collaborative learner participation are key elements of this phase. During this phase, students work at a high level of potential development (PDL). Each group of students (study circle) creates an “artefact”, which needs a combination of theory and practice for the solution of problems posed by the study module. At the beginning of this phase, each study group should have a “framework” for online learning (an online scaffolding) and feedback exchange with their instructors. Each group then writes a report / presentation/ letter to their instructor, specifically describing how they performed their collaborative working and analyzing them in the context of the learning task.

(5) *Self-paced learning and internalisation*: At this phase, students work individually to complete individual assignments according to their current level of development (ADL) and internalize the knowledge constructed. The types of assignments can vary (from essay to game). This is an important stage in achieving deep learning.

(6) *Integrating theory and practice*: This is the phase that demonstrates the achievements of deep learning in students.

Students present their personal contributions on how the theories they gained can be linked to practice. Dialogical evaluation and reflection also take place at this stage. The teacher evaluates the student's results and reflects it with the starting point of the study group according to the designed assessment frameworks.

3. EXPERIENCE OF HCMUTE RELATED TO DESIGNING AND IMPLEMENTING ONLINE TEACHING

At Ho Chi Minh City University of Technology and Education (HCMUTE), in the second semester of the academic year 2019-2020, with the social distance in Vietnam due to the Covid 19 epidemic, Online Teaching is recommended for teaching and study on a university wide scale. The HCMUTE has operated two online learning management systems allowing for asynchronous teaching and learning, namely LMS (learning management system) and FHQLMS (faculty of high quality learning management system). According to the survey results of the Quality Assurance Department of HCMUTE in 2020, approximately 90% of lecturers at the HCMUTE deploy online teaching, using the system of *LMS*, *FHQLMS*, *google classroom* and *some other systems*. Except for the Faculty of Physical Education and National Defense, which has a low rate of implementing Online teaching (about 20%), all other faculties at the HCMUTE apply Online teaching with the rate of using the online learning management systems *LMS* and *FHQLMS* between 70% and 90%. Meanwhile, the ratio of using *google classroom systems* and *other systems* to implement synchronous learning is only about from 5% to 12% and from 2% to 10% respectively (see Figure 1). So, first of all, we can see that in organizing online teaching at HCMUTE, **asynchronous learning** with the application of online learning management systems plays the **main role**.



Figure 1. Online teaching management systems utilized by lecturers at HCMUTE

(Source: Quality Assurance Department of HCMUTE 2020).

Note: Red – using LMS/FHQLMS; Grey – using google classroom; Orange – using other software/ digital applications; Blue – not implementing Online teaching;

LMS and FHQLMS for asynchronous learning allow lecturers to upload learning materials, teaching videos, deliver students tests (quiz) and assignments and allow lecturers and students to discuss on the forums. The lecturers at HCMUTE have designed Online teaching in the following way:

(1) *Design learning content* by chapters / lessons or by learning topics based on learning goals;

(2) *Design online learning activities:* Lecturers instruct students to do online learning activities such as (a) watching teaching videos, (b) reading (digital) materials including powerpoint files, word files, pdf files, e-books etc, (c) discussing on forums, (d) doing personal assignments - these assignments are graded online, (e)

doing online multiple choice tests/ quiz or answering interactive questions in teaching videos, (f) doing learning tasks in group etc.

To evaluate the use of LMS and FHQLMS in designing **asynchronous learning** of lecturers at HCMUTE, the Quality Assurance Department has distinguished 4 levels: (1) Level 1 - Lecturers only upload learning materials/ resources/ documents on LMS / FHQLMS; (2) Level 2 - Lecturers upload full learning materials/ resources/ documents and teaching videos for chapters, lessons or topics; (3) Level 3 - Lecturers upload full learning materials/ resources/ documents, teaching videos and design tests/quiz and assignments for students to do on the online learning management system; (4) Level 4 - Lecturers upload full learning materials/ resources/ documents, teaching videos and design

tests/quiz, assignments and effectively apply the forums on LMS / FHQLMS for students to discuss according to learning topics. The

survey results are shown in detail in Table 1 below.

Table 1. *Application level of LMS / FHQLMS of lecturers at HCMUTE*

(Source: Quality Assurance Department of HCMUTE 2020)

Faculty	Level 1	Level 2	Level 3	Level 4
Faculty of V.E.Engineering	12,90	18,74	24,62	43,74
Faculty of M. engineering	16,50	19,52	26,83	37,13
Faculty of C.F. technology	17,79	17,95	24,52	39,74
Faculty of G. F. Design	8,85	15,76	24,14	53,25
Faculty of Inf. Technology	10,47	14,83	28,75	45,96
Faculty of E.E Engineering	10,96	15,61	25,00	48,43
Faculty of H.Q. Training	13,72	15,24	22,42	48,63
Faculty of Print. Technology	9,71	14,00	23,86	52,43
Faculty of Applied Science	10,36	15,86	22,17	51,61
Faculty of Economics	10,81	14,44	27,90	46,85
Faculty of P. Ideology	14,02	15,06	24,44	46,48
Faculty of F. Language	10,14	9,80	27,04	53,01
Faculty of C. Start-up	19,43	11,85	27.01	41,7 1
Faculty of Construct E.T.	7,72	12,89	24,55	54,85
Institute of T. Education	8,78	11,34	21.34	58,53
Center of P.E and Defense	100,00	0,00	0.00	0.00
Total University	17.45	13,99	23,41	45,15

According to this result, 17.45% of faculty members applied LMS / FHQLMS at level 1 (upload only learning materials), 13.99% of lecturers applied LMS / FHQLMS at level 2 (upload learning materials, teaching videos), 23.41% of lecturers applied LMS / FHQLMS in level 3 (upload learning materials, teaching videos, design assignments, tests) and nearly half of lecturers of the whole university (45,15%) apply LMS / FHQLMS at level 4 (upload

documents, teaching videos, design assignments, tests and effectively use forums for student discussion).

Regarding **synchronous learning**, lecturers at HCMUTE use many other online applications to conduct online lectures with students. The software that lecturers used the most for synchronous learning is Zoom (55.86%). In second place is Google Meet when 20.20% of lecturers used Google Meet to implement "online face to face" teaching

with students. Third place is Messenger Facebook (8.15%). In addition, lecturers at HCMUTE also used some other online

applications with low rate (from 1.13 to 7.15%) (see figure 2).

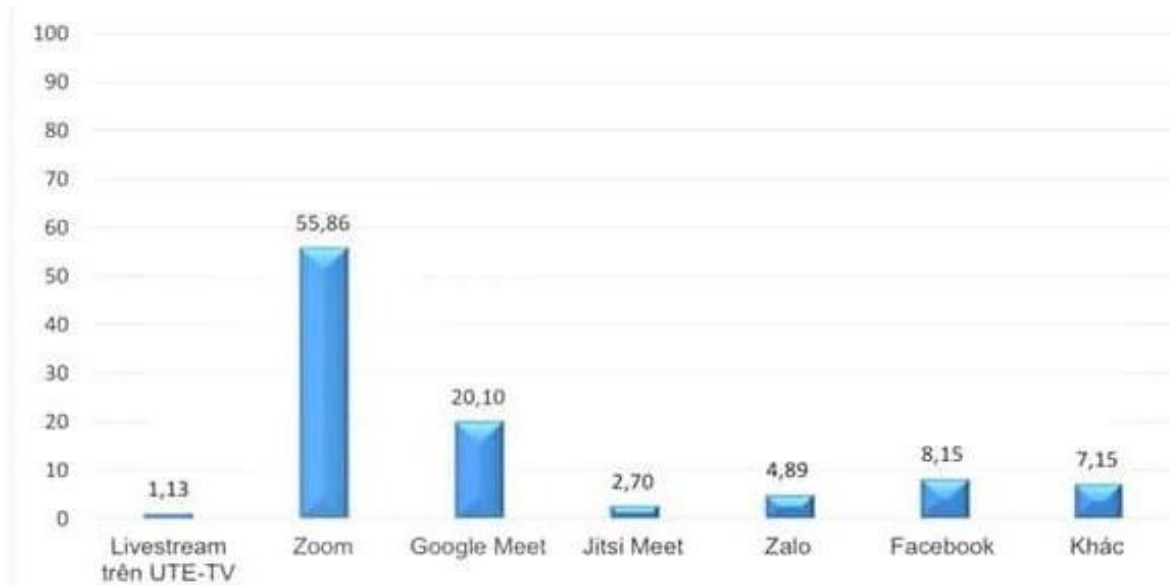
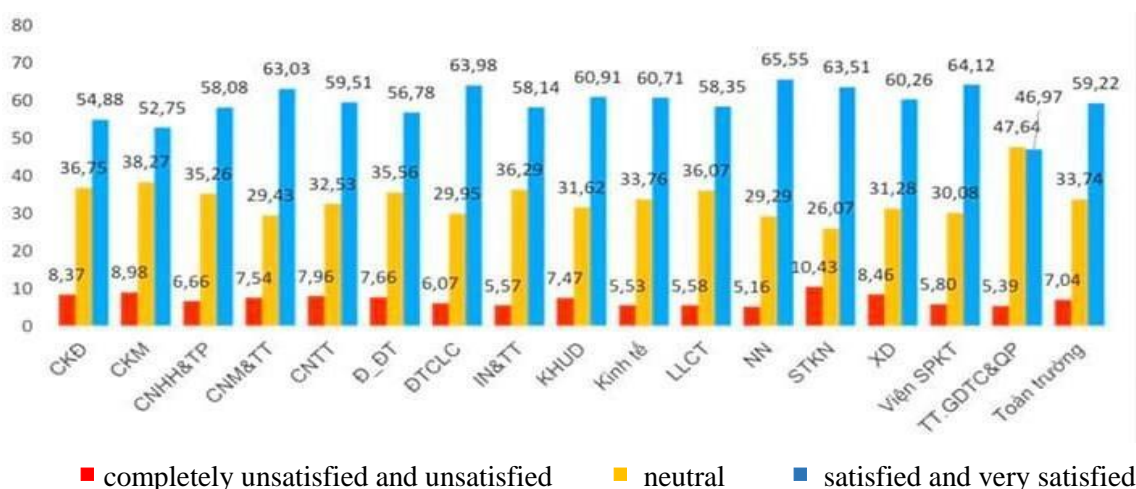


Figure 2. Digital Applications for synchronous teaching used by lecturers HCMUTE
 (Source: Quality Assurance Department HCMUTE 2020).

In order to evaluate the effectiveness of the online teaching implementation (presented above) of the faculty members at HCMUTE, the Quality Assurance Department has surveyed the satisfaction of students in all faculties at HCMUTE with online courses that they has participated in. The implementation of Online Teaching at HCMUTE in 2020 is generally appreciated by the students in all faculties at HCMUTE

according to the survey. About 60% of them feel satisfied and very satisfied with their online learning with their lecturers. Only a very small number of students (about 7%) feel unsatisfied. More than 30% of students are satisfied at average level. And 94.69% of them decide to continue to study online with HCMUTE teachers (see number figure 2 and figure 3)



■ completely unsatisfied and unsatisfied ■ neutral ■ satisfied and very satisfied

Figure 3. The level of student satisfaction with HCMUTE Online courses
 (Source: Quality Assurance Department HCMUTE 2020).

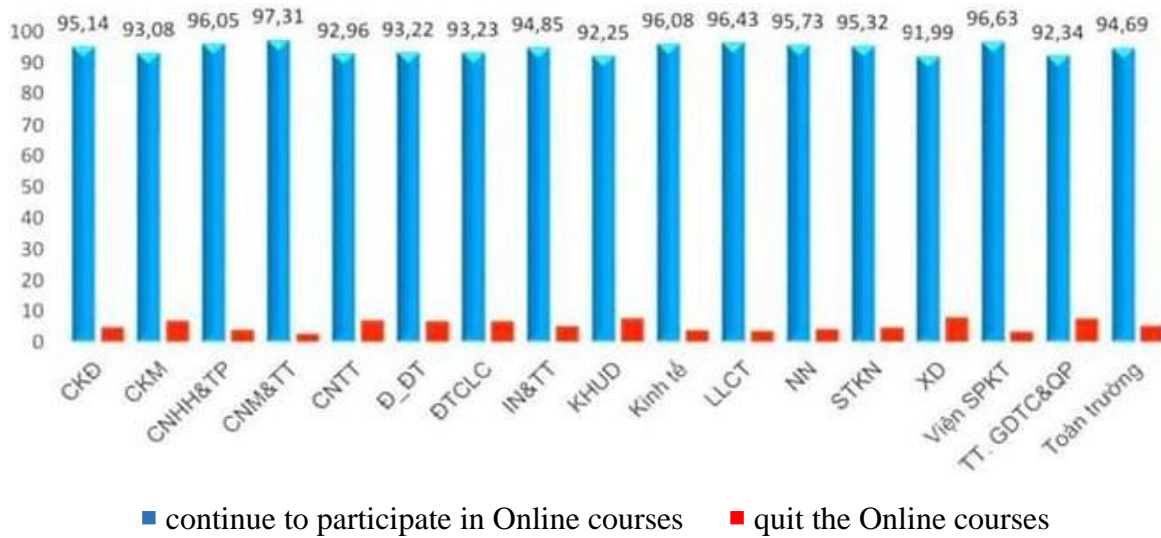


Figure 4. Student's decision to continue to study Online with lecturers at HCMUTE

(Source: Quality Assurance Department HCMUTE 2020).

In addition, the researchers also surveyed students' opinions related to ideas to improve the quality of online teaching at HCMUTE with a sample of 150 students. Students stated that lecturers should: (a) provide a variety of specific, detailed instructions to assist students in the Online learning process for all learning content (for example, instruction on how to participate the course, how to do homework, assessment criteria for homework results, sample of essays, etc.); (b) design assignments, quiz and multiple choice questions for learning topics for students to apply theory and practice; (c) regularly provide feedback to exercise results; (d) effectively apply forums for students to discuss learning topics; (e) survey students' opinion on the teaching quality of each chapter; (f) provide a rich source of learning materials for students, especially provide teaching videos; (g) integrate more applications / software that allow synchronous teaching like Zoom, Google Meet, etc. into the online learning management system. Especially, the idea of adding software / applications allowing synchronous teaching to the online learning management system was repeated in many of the interviewed students (over 50%).

Thus, in general, the implementation of Online teaching at HCMUTE is mainly

conducted in the form of *asynchronous teaching and learning*, using online learning management systems LMS, FHQLMS (nearly 80%). In addition, lecturers at HCMUTE also used other systems / software / digital applications to deploy synchronous teaching in parallel with asynchronous teaching, however, this implementation of synchronous teaching is still very limited and uncommon at HCMUTE. The way of designing online asynchronous teaching in the direction of designing learning content and designing online learning activities on LMS/FHQLMS as mentioned above is *initially effective and satisfying the students' requirements*. However, the effectiveness of online teaching still needs to be improved further based on improving the way of implementing online teaching. The comments from the students outlined above are a valuable reference for lecturers to continue to improve their online teaching. Accordingly, lecturers should:

- add synchronous teaching besides asynchronous teaching;
- provide students with more detailed instructions on how to take the course as well as how to do the assignments;
- give feedback promptly and frequently;

- design exercises/ assignments, questions for each learning topic for students to practice and apply theory through situations;

- offer discussion topics related to learning content on forums of online learning management system and support students to discuss effectively under the control of lecturers who play the role as moderators, helper, advisor;

- provide comprehensively the learning resources/ material, particularly teaching videos;

- increase the interaction with students and regularly ask students for feedback on course quality through learning topics / chapters, lessons.

4. PROPOSING A PROCESS OF DEVELOPING AN E-LEARNING COURSE

Based on the literature review above and the experience of HCMUTE in implementing Online teaching, we propose the process of designing an Online course with the 5W-1H model as follows:

Table 2: Procedure of developing an E-learning course

Steps of designing an online course	Why	What	Where	When	How	Who
1. Determine the learning goals	1. Why is this online course designed? The answer involves defining learning goals.	1. What are the learning goals? Which knowledge, skills and attitudes do learners need to gain after the course?	1. Where does the Online course take place? On the asynchronous learning management system and / or on synchronous teaching applications? Is online learning combined with face-to-face teaching (blended learning), if so, where is the facilities?	1. When does the course take place? How long is the course?	1. How is the online learning like: - Individual study? - Interactive learning?	1. Who are the learners? What are their learning needs and motivation?
2. Design the learning contents	2. Why should the learning content be designed like this? The answer concerns the identification of learners' needs, the requirements of the training program, the scientificity, the practicality and the professional properties of the learning content.	2. What are the learning content? Are these contents designed and organized according to study topics or chapters and lessons?	2. Where are specific learning contents organized? According to which logic are learning contents arranged? It can be considered between chapter/ lesson linear logic or study topic logic, ensuring scientific, practical and professional properties.	2. When will each specific content be taught?	2. How is the order of the learning contents according to learning time and learning process?	2. To whom is these learning contents for?
3. Design	3. Why is this	What are the	Where are the	When do	<i>Design</i>	Who does

Steps of designing an online course	Why	What	Where	When	How	Who
online learning activities	strategy chosen: <i>synchronous teaching</i> or <i>asynchronous teaching</i> or <i>blended teaching</i> (50-50 structured combination, or online teaching added by face-to-face teaching or face-to-face teaching complemented by online teaching? Why? The answer involves the determining of learning goals and the characteristics of learners.	learning activities of learners? a. Personal learning: Design activities for learners to <i>explore knowledge/information</i> in each learning topic (e.g. reading digital documents/ materials, watching teaching video, doing individual assignments, finding information for a topic...), <i>processing information</i> (e.g. posing authentic learning questions) and <i>applying information</i> (e.g. answering questions, solving a situation/ problem etc.); These learning activities help students construct knowledge individually. b. Interactive learning: Design learning activities to increase the interaction and dialogue between students – teacher, students –	online learning materials organized/ arranged? Where are interactive lessons organized? Where do teacher and students "meet" each other for each learning topic? (Meeting on synchronous teaching application/ software, or meeting on asynchronous online learning management system, or meeting face-to-face?)	students learn individually (reading materials, watching video, doing personal assignment etc.)? When do students conduct interactive learning with each learning topic? (answering questions, solving assignment, work in groups and present online) Before joining a virtual class, while participating in a virtual class and after taking a virtual class, what should students do with each learning topic? The instructor should give clear, specific instructions on this.	<i>digital materials for learners to learn individually</i> (e.g. documents, teaching videos); <i>Design interactive lessons/ activities</i> (e.g. design interactive videos, design digital lessons with questions and assignment for individual working or for group working for each study topic; Use a variety of online tools); <i>Provide instructions for individual learning:</i> guide learners to use digital materials/ to watch teaching video, guide learners to do assigned learning activities in each learning topic (answering questions/ doing personal assignment/ exploring a	what learning activity? The learning tasks are clarified: Who is in charge of which learning activity?

Steps of designing an online course	Why	What	Where	When	How	Who
		<p>students for each learning topic. For example: answering questions on an online application/ software, doing assignment/ project in group and present results online.</p> <p>c. <i>Developmental learning:</i> Design learning activities that help learners link learning content with other disciplines, with situations of social context and professional realities, that encourage creativity. E.g.: Solving problem linking with reality and practice, implementing projects (in collaboration with peers and / or with external social organizations) and presenting results online ... Activities a, b, c should be designed in a way that helps to promote both personal constructivism and social constructivism.</p>			<p>certain problem); <i>Provide instruction for interactive learning in group ; Provide regular and timely feedback</i></p>	
4. Design	4. Why does	4. What are the	4. Where are the	4. When are	4. How are	4. Who

Steps of designing an online course	Why	What	Where	When	How	Who
evaluation strategy	teacher design options for regular self-assessment of learners? This is to increase the interaction of learners with the learning content, to help learners take control of their online learning process to improve their learning and increase their engagement with the online course.	evaluation options available? <i>Design tools for learners to self-assess and evaluate each other</i> (e.g. rubric, assessment criteria sheet, etc.) <i>Design automatic responses</i> for learners to self-control the exercise results (e.g. the correct answer accompanied by signal of praise and the wrong answer accompanied by signal of encouragement) Design evaluation tools for teachers to evaluate students' results (e.g. assessment criteria)	assessment tools provided in the online teaching process? There should be a clear and specific pre-designed plan.	assessment tools provided in the online teaching process? There should be a clear and specific pre-designed plan.	the assessment tools designed? Clearly Measurable Specifically	reviews/ evaluates? Teacher evaluates students' learning performance; Students evaluate their own academic results and evaluate each other using assessment tools provided by teacher;

5. CONCLUSION

Based on literature review, the article provides some theoretical background of online teaching such as concept of digital teaching, advantages and limitations of online teaching, some forms of implementing online teaching (synchronous teaching, asynchronous teaching, blended teaching) and structure of implementing online teaching towards dialogical and deep learning. The article also highlights the experiences of HCMUTE in implementing online teaching during the Covid 19 epidemic, in which the asynchronous teaching on the online learning management systems (LMS / FHQLMS) as

digital platforms are effectively exploited with a high level of satisfaction among participating students. The experiences of designing and implementing asynchronous online teaching of HCMUTE teachers have also been shared through this article along with recommendations for improving the quality of implementing online teaching based on survey of HCMUTE students who participated in HCMUTE online courses. Based on literature review and HCMUTE's experiences, a process for developing an e-learning course has been proposed.

ACKNOWLEDGEMENT

The authors of this article would like to express the gratitude to the ministry-level scientific research program "Research on building an online learning ecosystem in training higher education-level human resources to meet the Industrial Revolution 4.0", the topic "Research on building the

process of training online teaching capacity for lecturers at higher education institutions" by Ho Chi Minh City University of Education and Technology, with the support of Vietnam Ministry of Education and Training. We would also like to thank the EMVITET Project funded by the Erasmus+ Programme of the European Union.

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