

The perspective of Vietnamese tertiary students in
Europe toward Emergency Remote Learning during the
COVID-19 pandemic

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I. Introduction

1. Background of the study

1.1 The impact of the COVID-19 to education in Europe

Originating at the end of December 2019 in China, an infectious disease pandemic with is the SARS-CoV-2 virus and its variants are taking place on a global scale. This COVID-19 pandemic quickly spread across the globe and by the end of March 2020, the World Health Organization officially announced Europe as the new epicenter of the pandemic. (World Health Organization, 2020)

The epidemic brought severe negative effects in all fields on a global scale, such as disrupting the supply chains of goods in the world and stalling in business, thus affecting global growth. In particular, the education sector was heavily affected by COVID-19 since the early days of the pandemic. Many educational institutions in many countries were forced to close in response to the spread of the disease. In order to mitigate the effects of COVID-19 on education, educational institutions, particularly universities, swiftly implemented a new method of teaching known as "emergency distance learning" (ERL) in the online environment, utilising information and communication technology (ICT) (Thurab-Nkhosi et.al., 2021). Alternative arrangements in the form of "virtual mobility" were also offered, yet there were still many cancellations and delays of numerous mobility schemes in HE. Even high-income nations, despite their advanced technology capabilities, have suffered learning losses as a result of the rapid shift to virtual learning in March 2020. According to statistics from OECD (2020), together with other traditionally popular hosting countries for international students, such as USA, Australia, and Canada, European countries have faced a dramatic drop in the market share due to the uncertainty and the reluctance of international students to enrol in European higher education institutions (HEIs).

The sudden transition to online education has posed challenges for teaching and learning at higher education institutions (HEIs), resulting in numerous obstacles that have hindered students' learning experiences and made them reluctant to participate in future online courses. (Motiejūnaitė-Schulmeister, A, & Crosier, D., 2020). Amidst the epidemic, numerous students have recognised the necessity of acquiring proficiency in digital technologies to fulfil their educational obligations and effectively communicate with their teachers while adhering to social distancing measures.

International students who were unable to repatriate to their countries of origin faced an elevated risk of social isolation during the lockdown, coupled with probable financial hardships due to limited financing and job loss (European Migration Network (EMN) & OECD, 2020). Conversely, international students who were unable to travel to Europe during the re-opening phase found themselves confined to their home country, persisting with online studies while still burdened with various expenses in the host countries, such as the equivalent tuition fees for on-campus education and housing deposits (Farnel et al 2021).

After the situation became more stable, many European governments announced a phased reopening of the country's borders and welcome travellers from outside of the EU from July 2020 on, including international students. However, the second waves of the COVID-19 caused by new variants continued the severe impact of the pandemic on the internationalisation of higher education (HE) in Europe. Border restrictions and the close down of universities were extended till May 2021 due to the dramatic rising number of infections (World Health Organization, 2020), resulting in the prolonged time of ERL implementation in European HEIs.

1.2 The impact of the COVID-19 to education in Vietnam

At the end of January 2020, the first case of COVID-19 infection appeared in Vietnam. By looking at different aspects of the current health system and experience with similar outbreak that have occurred before (SARS-2003), Vietnam was succeeded in implementing prevention and controlling strategies that focus on tracking, isolate and quarantine the new infected person from the beginning of the pandemic. Compared to the global rate, Vietnam reached a low level of COVID-19 infection in 2020. However, after the extended Lunar New Year break, the Ministry of Education and Training (MOET) of Vietnam still released the order of social distancing and required all educational institutions to switch the education mode to online teaching and learning from March 2020 (Nguyen Thi Yen et al, 2021). The practices of online education have been continued to take place at all levels of education in Vietnam until February 2022, making many students changing their plan about studying abroad.

However, things have been a little different for Vietnamese students who would originally planned to study abroad in Autumn 2020. The application deadlines in Europe universities are most often separated for studies beginning either during the autumn and spring semester, and also depend on the chosen field/programme, country of origin and study mode. Being categorised as non-EU

students, Vietnamese students usually had to prepare their application for the 2020/21 academic year from September 2019 on, submit their documents before March 2020 and then get their study offers at around May-July 2020. Combined with the timeline of the COVID-19 pandemic in both Vietnam and Europe, we have the following graph:

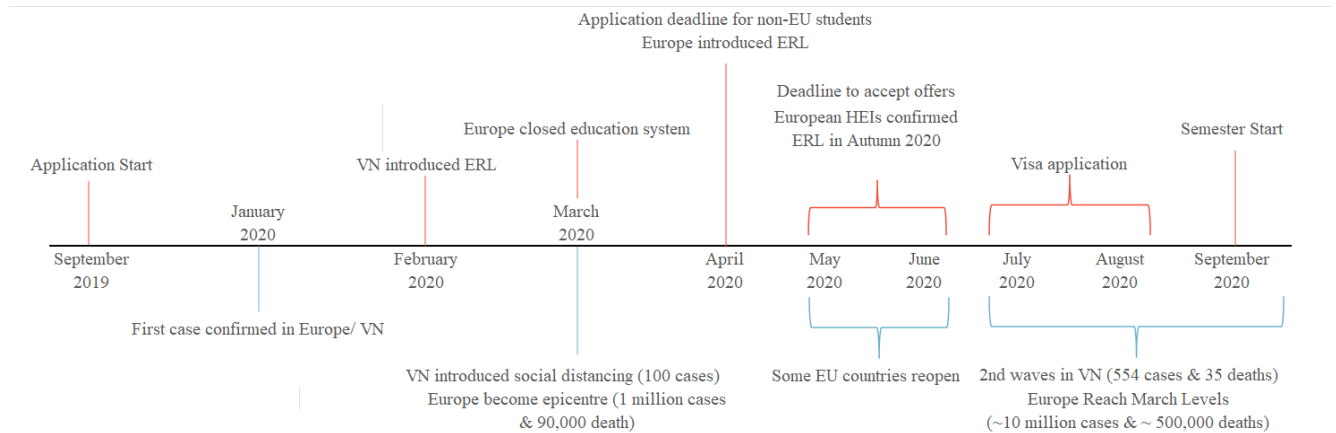


Figure 1. The timeline of the COVID-19 pandemic in Vietnam and Europe (09/2019 – 09/2020)

As can be seen, Vietnamese students' original decisions of applying to EU universities were not affected by the COVID-19 pandemic because they had to decide before the pandemic began. However, during the process of waiting for admission results, they witnessed the outbreak of the pandemic in Europe and experienced the social distancing measures under the COVID-19 from February 2020 on. In addition, the short-term re-opening in Europe extended the time of waiting for the confirmation of ERL from European HEIs for the Autumn 2020 semester. This also made it difficult for Vietnamese students to decide whether they should apply for a visa to depart for Europe or wait for the confirmation from their institutions. Thus, many Vietnamese students decided to reject their study place offers or postpone the study plan due to this uncertainty (Nguyen, 2020).

According to the estimation from the MOET, there were around 40,000 Vietnamese students enrolled at European HEIs in the academic year 2019-2020 (Study in Europe Fair 2021 in Vietnam - Open Your Mind | EEAS, n.d.). In the academic year 2020-2021 (intake Autumn 2020), due to the complicated situation of the global COVID-19 epidemic, with many countries around the world having implemented a lockdown, including a temporarily closing of their HEIs and a switch to online learning. The exact number of Vietnamese students enrolled in European HEIs in

this academic year was not yet stated in official reports, yet it was mentioned by MOET that there were quite a lot of Vietnamese students who decided to study online either in the European host country or even suspend their travel and stay in Vietnam. Based on an online survey data set comparing study abroad trends before and after the COVID-19 pandemic, there was a significant decline in the proportion of Vietnamese students opting to study in Europe, plummeting from 13.4% to 3.8% (Pham et al., 2020).

Several research have investigated the learning experience of students engaged in distant education during the COVID-19 epidemic. However, there has been limited focus on the viewpoint of overseas students. Likewise, the majorities of studies about Vietnamese students during the COVID-19 pandemic have been situated in Vietnam HEIs. Some studies were found to study about Vietnamese student abroad, but the focus is giving to students who have already travelled to the host countries. Therefore, to fill the gap, this project aims to study about Vietnamese students who could not travel to their host countries and stay in Vietnam during studying ERL because of COVID-19, focusing on students of European countries.

2. Conceptual distinction

2.1 Toward the definition of “distance learning”, “online learning” and “e-learning”

The term “distance learning” has been defined in different various in the literature and used interchangeably with “online learning” and “e-learning”. Besides, numerous definitions are used to identify ICT-based learning form, such as web-based learning, virtual classrooms, or online teaching (Guri-Rosenblit, 2005). The absence of differentiation between these words mostly stems from a misconception regarding the function and practical application of ICT in higher education. "Distance learning" and "online learning" have certain areas of overlap, but they are not synonymous because not all distance learning courses are given through electronic media and the Internet. Furthermore, it should be noted that not all e-learning courses serve the objective of 'distance education' (Guri-Rosenblit, 2005).

Distance learning at university level was developed from the 19th century to reach out to students who are geographically distant (Guri-Rosenblit, 2005). Traditionally, “distance learning” has been referred to as “correspondence courses”, in which the instruction was delivered through printed materials to students via postal services (Casey 2008; Palvia et al. 2018). From the early

1920s onwards, the utilisation of radio broadcasting in education gained popularity. Live educational radio shows shortened instructional delivery time and enhanced classroom immediacy, providing a novel means to reach distant students in addition to traditional postal distribution. The phrase "distance learning" has expanded to encompass several forms of education, including online learning, e-learning, technology-mediated learning, online collaborative learning, virtual learning, web-based learning, and more (Moore et al., 2003).

The term "electronic learning" or "e-learning" emerged in the 1980s, at the same time as another method of delivery known as "online learning". Debates persist on the specific kind of technology that are encompassed under the realm of e-learning. Although some authors restrict the definition of e-learning to only include technological tools that are web-based, web-distributed, or web-capable (Nichols, 2003), there is a belief that e-learning encompasses not only content and instructional methods delivered through CD-ROMs, the Internet, and an Intranet, but also a diverse range of electronic devices such as audio and videotapes, satellite transmission, and interactive TV (Luaran, 2014).

Regarding the term "online learning", although there is no precise definition, most authors concur that it involves the utilisation of the World Wide Web and high-speed broadband transmission. Furthermore, many authors consider "online learning" to be an enhanced form of "distance learning" (Moore et al., 2003).

In this study, the term "distance learning" will be defined as a broad concept that encompasses multiple forms of education conducted at different locations and/or times, utilising various types of instructional resources (Casey, 2008; Moore et al., 2003). The term "e-learning" encompasses a diverse array of applications and processes that are specifically designed to provide instruction through various electronic devices, such as CD-ROMs, computer software, and satellite transmission for video conferencing (Casey, 2008; Luaran, 2014). This will also encompass "online learning," which utilises internet-enabled gadgets as the means of delivering instructional content (Dhawan, 2020).

The primary defining feature of these phrases revolves around the spatial distinction between the teacher and the students. Nevertheless, the duration of instruction in online learning may vary based on the level of engagement between educators and learners. Namely, the term "asynchronous" and "synchronous" are used additionally to characterize that degree. Asynchronous learning programmes, also known as self-paced programmes, consist of

communication exchanges in elapsed time and allow students to work at their own pace within an overall timeframe. This is also the original form of “distance learning” with the oldest type of delivery as “mail correspondence”. Contemporary methods of asynchronous transmission include video and audio recordings, print materials, voicemail, fax, email, online discussion forum, and social network. Synchronous programmes involve real-time interaction between students and instructors using various mediums such as web conferencing, direct broadcast satellite, internet radio, telephone, and web-based VoIP video conferencing. This type of programme is similar to traditional classroom instruction in terms of the simultaneous engagement between students and instructors (Dorsah, P., & Alhassan, A., 2021; Dhawan, 2020).

2.2 Emergency remote learning

With the advent of the internet and networking technology, learners have been able to study from anywhere, leading to the suggestion that online learning could replace traditional face-to-face learning. Nevertheless, the instructional approach employed within the COVID-19 pandemic exhibits some variations. It is not comprised of carefully designed distance learning programmes, but rather a transient shift in how teaching is delivered in response to a crisis produced by the pandemic (Wang et al., 2020). Therefore, it is distinct from traditional online education. Researchers have adopted the name "Emergency Distance Learning" (ERL) to describe this alternate kind of education that was conducted entirely online through the internet and with the aid of digital technologies (Hodges et al. 2020).

Technically, ERL can be considered as one branch of “distance learning”, which may fall under the group of “synchronous online learning”, as the lectures are delivered mainly via video conferencing software with a pre-scheduled timetable comparable to the practice of on-campus learning. During ERL, the students may reside either abroad or at the same location as the instructors but there are no face-to-face components due to lockdown measures, such as the social distancing and travel restrictions. However, since the primary objective of this learning approach is to provide online access to education taking the lockdown measures into account and is expected to revert to the normal model once the pandemic is over, the teaching strategies used in ERL were originally designed for face-to-face teaching with little or no conversion (Farnel et al., 2021).

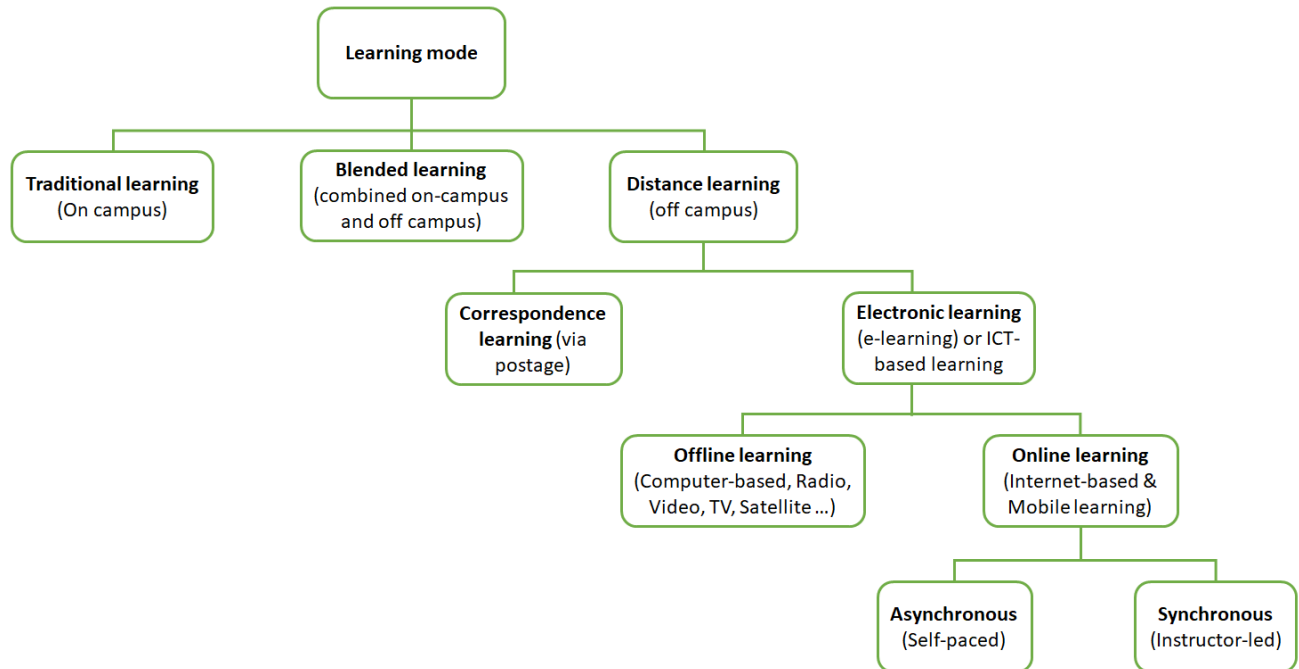


Figure 2. Categorisation of learning mode

3. Research objective and research questions

The main objective of this research is to investigate the correlations between online interactions and students' happiness with online learning during the COVID-19 epidemic, as well as the elements that influence this satisfaction. To achieve this objective, the study puts up three primary research inquiries:

Q1: How are Vietnamese students' online interactions associated with their satisfaction during their study in ERL?

In the first question, the study will examine the correlation between the Vietnamese students' online interactions and their satisfaction in studying ERL at European universities while staying in Vietnam.

Q2: Which variable may have impact on Vietnamese students' online interactions and to what extent that variable affect their online interactions?

In this question, the study will determine the factors affecting Vietnamese students' online interactions and the extent of these effects.

Q3: Which variable may associate with Vietnamese students' online satisfaction and to what extend that variable affect their online satisfaction?

Further analysis will be conducted using the data obtained to determine any potential correlation between factors and the online satisfaction of Vietnamese students throughout the pandemic.

4. Rationale of the study

A significant obstacle in higher education is the ability to maintain student enrolment in online programmes. An analysis of the variables that contribute to higher student satisfaction scores in online learning can furnish educators with valuable information for the development of online courses and programmes aimed at enhancing the retention rate of online learners. While there has been significant research conducted on students' experiences during the COVID-19 pandemic, examining various perspectives and learning contexts, there is a limited number of studies that have specifically investigated the perspective of international students who were unable to return to their home country.

Hence, this study aims to enhance comprehension of the satisfaction levels of Vietnamese students studying in European higher education institutions during the COVID-19 pandemic. It also seeks to explore the correlation between interaction and students' satisfaction in the context of online learning. Furthermore, by examining the influence of past experiences and the physical learning environment on this connection, the study's results will offer valuable insights for Higher Education Institutions (HEIs) to enhance the planning, design, and implementation of online learning activities. This could also enhance student and faculty contentment with online courses and, as a result, the calibre of education.

5. The structure of the thesis

The first chapter commences with a concise overview of the study, encompassing the context, objectives, research questions, and reasons. This chapter 01 also encompasses the elucidation of the notions of distance learning, online learning, and emergency distance learning.

Chapter 02 focuses on elucidating the notion of students' happiness in the context of online learning environment and its primary factors - students' online engagement, along with the presentation of relevant research. This chapter includes a literature analysis that identifies several characteristics that could potentially influence students' online interactions and satisfaction. These

variables are categorised into three groups: prior experiences, physical learning environment, and demographic factors.

Chapter 03 will outline the research models and hypotheses of the study, which are derived from the literature review, then provides a comprehensive explanation of the methodological approach and the techniques utilised for data collection and analysis. This chapter additionally encompasses ethical questions and a discourse on the research's quality.

Chapter 04 comprises the examination of data through empirical analysis, which is subsequently accompanied by a concise overview of the fundamental discoveries.

Chapter 05 provides a summary of the finding, incorporating the literature studies from chapter 02, followed by a reflection on the research and suggestions for future work.

Chapter 06 presents the full lists of References used for this project.

Chapter 07 presents the additional materials as Appendix.

II. Literature review

This chapter will introduce the notion of students' satisfaction in online learning, students' interaction, and present relevant studies about selected factors that may affect the online interactions.

2.1 Students' satisfaction in online learning

The satisfaction of students is a crucial factor that affects the continuation of online learning (Moore and Kearsley, 2004; Parahoo et al., 2016) and serves as an important indicator of the success or failure of online education (Ke and Kwak, 2013; Kuo et al., 2014). Multiple research studies have been carried out to investigate different factors that influence students' contentment with online education.

Satisfaction is a crucial term in marketing theory and plays a central part in the success of every commercial organisation, regardless of whether it is focused on a product or a service. In the context of business and marketing, satisfaction refers to the consumers' positive response to their evaluation of a product or service, or a specific characteristic of a product or service, by comparing it to their perceived value and expectations. It is advised that customers demand a clear and specific value when buying a product or service, which can satisfy their needs. During their consumption, customers evaluate their anticipated value against their actual experience. Therefore, customers might experience satisfaction when their perceived value is fulfilled, for example, by enhancing happy emotions or alleviating negative emotions through problem resolution. (Oliver, 2010).

The notion of students' satisfaction is drawn from the concept of customer satisfaction, as students are increasingly regarded as consumers of higher education services. Various definitions have been proposed to define the concept of students' satisfaction and it is generally accepted as students' attitude results from their evaluation of learning experiences, when the educational service provided meets or exceeds students' expectations (Elliot & Healy, 2001; Elliot & Shin, 2002). Based on their personality, experiences and marketing content from HEIs, students create their own value expectation about the educational service before enrolling to university. However, as they progress through the whole programme, their expectations also evolve differently, which leads to the level of students' satisfaction may increase or decrease in the end of learning journey (Abar & De Moraes, 2019).

In the context of online learning, students' satisfaction arises when the educational service received is the same quality as students require (Dominici & Palumbo, 2013). Specifically, students tend to expect the quality of online learning should be as same as traditional learning, as this is the only educational experience that they may acquire as the first-time online student. The experience of traditional learning now has become the standard for students to develop their expectation about online learning. Thus, it has been suggested that students' satisfaction is a key contributor to student continuance in online learning, since it can become the new experience and hence, affect students' expectation and their decision in the future.

2.2 Interaction in online learning

Interaction is a multifaceted notion that applies to all types of schooling. Historically, interaction mostly revolved around face-to-face discussions held within the confines of a classroom, involving both students and teachers. By engaging in interactive communication with their classmates and teachers, students are able to exchange information and knowledge, thereby constructing new knowledge. Interaction has been identified as a fundamental aspect that influences an individual learner's learning and growth in numerous research (Kang, 2013).

In virtual learning settings, participants, including both learners and instructors, experience physical separation from one another as a result of spatial constraints and, in certain instances, temporal disparities. Nevertheless, recent advancements in technology have facilitated the exchange of information and communication between students and teachers. The notion of interaction in online education has been broadened to encompass mediated synchronous discourse from a distance location (using audio channels, online chat rooms, and videoconferencing); asynchronous forms of simulated conversation (via email and discussion boards); and feedback and responses generated by devices, such as "interactive computer programmes" (Moore & Anderson, 2003; Alamri & Tyler-Wood, 2016).

Due to the growing ubiquity of these technologies, several research have been conducted to explore methods for enhancing learner-instructor contact and improving the quality of interaction in different learning settings (Saba, 2000; Shin, 2004; Woo & Reeves, 2007). Interaction in online learning is considered a crucial aspect in determining students' satisfaction with their online education and academic performance. It is among the different factors that influence students' online learning and academic outcomes (Wu et al., 2010; Cidral et al., 2018).

In a cross-country study undertaken by Baber (2020) amidst the COVID-19 pandemic, it was shown that interaction had a crucial role in determining students' satisfaction with online learning and their academic achievements. Online learning has not attained satisfactory levels of contact due to technology limitations (Downing et al., 2007). Additionally, the importance of interaction has been widely overlooked in the research on distance education (Abrami et al., 2011). Abrami et al., (2011) emphasised that the study of distance education has not adequately addressed or emphasised the concept of interaction, which is a crucial element in online learning. However, a study conducted by Bali and Liu (2018) has demonstrated that face-to-face classes exhibit a greater level of interaction and pleasure compared to online courses. Kuo et al. (2014) found that a significant amount of connection with the instructor, fellow students, or course material results in a high level of satisfaction and indicates strong engagement in online learning (Veletsianos, 2010). Likewise, a dearth of interaction frequently results in subpar student involvement and diminished student contentment (Martin et al. 2018).

Multiple studies on interaction in online learning have led to the development of diverse definitions for this concept. This study will adopt Moore's (1989) concept of interaction in online learning, which encompasses three separate forms of student contact: engagement with instructors, interaction with other students, and interaction with content (Moore, 1989; Anderson et al., 2001; Moore & Anderson, 2003).

2.2.1 Student – Teacher interaction

The conventional form of student-instructor contacts mostly revolved upon in-person discussions held within the classroom setting. Moore (1989) states that during student-teacher contact, the instructor aims to engage and sustain the student's interest in the subject matter, encourage the student to actively participate in learning, and foster the student's self-direction and drive. Within distant learning settings, student-instructor engagement can occur synchronously via telephone conversations, videoconferencing, and chats, or asynchronously through letters, e-mail, and discussion boards. This form of engagement may be focused on offering motivational and emotional assistance, which may have a greater impact on attitude assessments rather than measures of accomplishment (Moore 1989; Moore & Anderson, 2003; Moore & Kearsley, 2004; Anderson, 2008).

According to Swan (2001), there is a positive correlation between the perceived level of connection between students and their instructor, and their happiness with the courses. Furthermore, this involvement also results in a greater percentage of the course grade being acquired. Jung et al. (2002) discovered that consistent interaction with professors accounted for 60% of students' contentment with online courses, especially in the early stages. In a study conducted in the same year, Hong (2002) also found a direct positive relationship between students' contentment regarding the contact between the teacher and students and their satisfaction with online courses and learning outcomes. Bolliger and Martindale (2004) also concurred that the engagement between students and instructors significantly influences student happiness. This finding was based on a study conducted on graduate students enrolled in several online instructional technology courses at a regional institution. Similarly, Battalio (2007) described that student-instructor interaction is the sole necessary form of interaction for effective student learning. Another study in 2009 by Sher investigated the influence of interactions on student learning in a Web-based setting. The findings revealed that both the interaction between students and instructors, as well as among students themselves, played a vital role in determining student satisfaction and learning outcomes. This is because in an online learning setting, instructors are required to provide guidance, instruction, and support tailored to the unique needs of each student. In addition, they have the responsibility of administering both structured and unstructured evaluations, tracking the advancement of every student, inspiring them, and assisting them in implementing their acquired knowledge (Moore, 1989; Moore & Anderson, 2003).

2.2.2 Student – Student interaction

Student-student interaction pertains to the sharing of information and ideas amongst students regarding the course, whether the instructor is present or not. Such engagement can manifest as collective endeavours, or as group deliberation, among other possibilities (Moore, 1989; Sher 2009). Mail classes sometimes lack participation as correspondence students are often ignorant of their colleagues' enrolment and lack knowledge of their identities. In succeeding versions of distance learning, such as two-way videoconferencing and Web-based courses, student-student contact can take place either synchronously, through means like videoconferencing and chatting, or asynchronously, using methods like discussion boards or email messaging (Anderson, 2008).

In a study conducted by Jung et al. (2002), it was discovered that undergraduate students who participated in a collaborative interaction group reported more satisfaction compared to the other two groups. Robles (2006) obtained similar results with regards to adult learners. According to Lee and Rha (2009), when an interactive course is delivered, the satisfaction of students is enhanced by their interaction with one other. Kurucay and Inan (2017) asserted that student interaction plays a crucial role in online learning, impacting both student satisfaction and academic achievement. This form of interaction enables students to engage in socialisation, idea exchange, discussion, and group activities, thereby promoting learning through collaborative efforts and knowledge sharing. However, excessive mandated cooperation among students diminishes student contentment (Bray et al., 2008). It seems unclear whether and under which circumstances these interaction dimensions play a role in predicting student satisfaction.

2.2.3 Student – Content interaction

Student-content interaction is the most basic interaction in any educational situation. This involves the student actively interacting with the subject matter being studied in order to create understanding, connect it with their existing knowledge, and utilise it for problem-solving purposes (Moore, 1989). This interacting process may encompass activities such as perusing informative literature, utilising study aids, viewing films, engaging with computer-based interactive media, employing simulations, or utilising cognitive assistance software (e.g., statistical software). Additionally, it involves doing information searches, fulfilling tasks, and collaborating on projects (Sher 2009). Student-content interaction involves the cultivation of both mental and physical abilities. When students actively engage with the learning material, their cognitive processes and attitudes are likely to undergo transformation. The correlation between this form of contact and the quality of course content has been established, thereby impacting student satisfaction (Kim & Kim, 2021). The better the content quality is, the more motivated and satisfied students are (Knowles et al., 2020). Strachota's (2003) research found that the primary component that had the greatest impact on student satisfaction was the level of interaction between students and the content. Subsequently, there was an exchange between the students and the teacher, along with the correlation between students and technology. Nevertheless, no noteworthy correlation was found between student satisfaction and the interaction among students.

2.3 Physical learning environment

In the research literature on distance and online education, discussions are mainly revolved around interactions between learner and teacher, other learners, and content. However, little attention has been placed on a particular form of interaction: the one that occurs between the learner and the actual environment. Several studies conducted in recent years have focused on the correlation between the physical environment and learning. This research has explored how certain characteristics of the learning environment can impact cognitive load (Choi, 2014) as well as mental health and well-being. Studies have shown that there is a relationship between the conditions of school design and student achievement (Hunley & Schaller, 2009; Tanner, 2008) and the quality of physical space is crucial to learning.

Contrary to students who attend universities on campus, online distance students engage in their learning activities in locations that may not be specifically designated as learning spaces. In the pandemic context, most learning activities were performed at home due to the social distancing. Irrespective of the learning gadgets employed by students and the online instructional or learning settings they engage with, students are inherently situated in the physical world and potentially surrounded by individuals. Hence, the physical learning environment plays a vital role in shaping the online learning experience. Factors such as the physical surroundings and social dynamics, such as being alone or with others, can either facilitate or impede learning activities and online interactions. This study specifically examines three key aspects of the physical environment: the learning space, the learning device, and the internet access.

2.3.1 Learning spaces

The term "learning space" refers to the physical area where educational activities take place. It is not only about the private space but also a functional set up for studying, such as comfortable study table and chair and lightning condition. The need for a designated space for learning online is argued to be important for successful course completion by a number of studies (Holder, 2007; Alphonse et al., 2019).

The learning results of pupils are significantly influenced by the learning environment. The presence of open space and noise in schools, together with incorrect temperature, insufficient light, overcrowded classes, misplaced boards, and inappropriate classroom layout, are all elements that might operate as confounding variables, causing distractions for students during class. While a few

students resided alone or had a dedicated study area, a significant number of students expressed the need to establish clear physical boundaries between their living space and their academic pursuits. They were required to engage in negotiations to allocate a specific area within their residence (Selwyn, 2011) or with others residing in other locations (Hislop and Axtell, 2009). As for Vietnamese students, a recent qualitative analysis in 2021 showed that they had to undertake unexpected tasks and were interrupted while learning due to sharing living space with whole family (Van & Thi, 2021)

2.3.2 Learning devices

For efficient learning in various environments, it is essential for online students to own suitable equipment and software (Alphonse et al., 2019). The absence of adequate technological readiness and technical assistance was recognised as a contributing factor for online students discontinuing their studies (Willging & Johnson, 2019). Learning devices encompass a range of technological tools such as desktop PCs, laptops, and cellphones. These devices facilitate the completion of diverse learning activities across different physical environments. While there is a rapid increase in the ownership of mobile devices, their usability is still unstable due to the variety of features and characteristic of different brands. In 2021, Van & Thi did a study to examine the obstacles faced by students in Vietnam when it comes to the possibility of engaging in online learning, particularly in the midst of the COVID-19 pandemic. Based on their research, a minority of students reported not having access to PCs or laptops for studying, and their mobile devices lacked the capability to run online programmes.

2.3.3 Access to Internet

Although individuals in industrialised nations typically have access to high-speed Internet connections at their workplaces, homes, or schools, and Wi-Fi is readily available in numerous public locations, many students residing in rural areas and developing countries must endure sluggish or nonexistent internet connectivity. Insufficient bandwidth limits the ability to view content that contains a lot of resources, such as video clips, video streaming, and the downloading of huge files (Brown and Mbat, 2015). Furthermore, the issue of data security persists when working in coffee shops and other locations with wi-fi hotspots (Mark and Su, 2010). Van & Thi (2021) found that the expenses and availability of internet are among the most significant obstacles to online learning in Vietnam. Students face limitations in accessing the internet due to the

positioning of wi-fi access points within their community or the location of cellular network towers, as well as the limitations of their cellular data services plan.

2.4 Prior experiences

2.4.1 Online learning experience

Several studies have indicated that students with a greater amount of prior online learning experience are more likely to be well-prepared and confident in their ability to succeed. Consequently, they generally hold more positive opinions of online learning. Based on the research conducted by Waldman et al. (2009) and Platt et al. (2014), students who had greater familiarity with online platforms said that the online learning environment was more favourable for learning and more fun compared to students who were inexperienced with online courses. In the study conducted by Shen and colleagues (2013), it was discovered that students who had more extensive past experience with online learning exhibited more self-efficacy in successfully completing an online course and engaging in collaborative academic work with their peers. According to Wang, Shannon, and Ross (2013), students with prior experience in online courses demonstrated a greater use of efficient learning strategies in their subsequent online courses. Furthermore, pupils who employed more efficient learning techniques exhibited heightened motivation towards their online coursework. These data indicate that students who have previously engaged in online learning are more likely to successfully complete their online courses. Students who have previous experience not only have a higher likelihood of being successful learners, but they also enjoy advantages in the affective domain of learning, such as improved attitude and pleasure with their courses (Rodriguez et al., 2008; Astani, Ready, & Duplaga, 2010; Wang, Shannon, & Ross, 2013).

2.4.2 Study abroad experience and working experience.

Different from the online learning experience, which has been long studied about its impact on students' perceptions of online courses, there are very few studies looking at other types of experience, including studying abroad and working experience. Yet there are some interesting findings about these aspects. According to a study conducted by Aristovnik et al. (2020), students in Oceania, North America, and Europe exhibit much higher levels of satisfaction compared to students in Asia and South America. Conversely, students in Africa reported the lowest levels of happiness. Furthermore, many researches have indicated a considerable correlation between the

level of education and satisfaction with online learning. Specifically, postgraduate international students were more satisfied compared to undergraduate students (Simsek et al., 2021; Tian & Lu, 2022). Two other studies also showed that English-medium-instruction in Asian countries – which only be offered in international programme, have a big impact on students' satisfaction overall (Peng & Samah, 2006; Kim & Yoon, 2018). Although it is not clear whether study abroad experience and working experience may have impact on students' online satisfaction, these characteristics deserve more research attention.

2.5 Age and Gender

2.5.1 Age

The occurrence of interaction between groups that have varied age compositions is becoming more prevalent. According to Dabbagh (2007), the online learner community is diverse, consisting of adults who are primarily employed, focused on achieving certain goals, and capable of directing their own learning, as well as younger students who are adaptable and receptive to technology advancements. Research on online interactions among different age groups is limited, although previous studies have suggested that learners' age may influence their performance in online learning.

Wojciechowski and Palmer (2005) found that older students generally achieve higher grades. This discovery aligns with Dabbagh's assertion (2007) and the fundamental principles of Andragogy (Knowles, 2020) that older adult learners typically exhibit higher levels of intrinsic motivation and self-directedness - two essential qualities necessary for success in online learning. Contrastingly, the research conducted by Lim, Morris, and Yoon (2006) revealed that online learners in the age range of 20 to 29 exhibited superior performance in their knowledge assessment and expressed higher levels of satisfaction with the calibre of online courses. Lim's research provides evidence that aligns with the cognitive ageing perspectives, which suggest that older adult students often lack the necessary abilities or epistemological beliefs to effectively engage in technology-mediated learning interactions. Prior study indicates that the impact of age on online learning can vary depending on another learner characteristic, such as the degree of education. In their study in 2004, Shin and Chan performed a survey on the perceptions of online learning among undergraduate and graduate students. They discovered that students with a higher level of education tend to have a more favourable view of the learning outcomes compared to those with a lower level

of education. Makoe, Richardson, and Price (2008) asserted that adult learners' opinions of online learning were influenced by their previous academic background. Therefore, when examining online interactions among different age groups, it is important to take into account the moderating influence of an age-related learner characteristic, such as educational attainment.

2.5.2 Gender

Multiple research projects have examined the impact of learners' background characteristics on the happiness of online students. According to Harvey et al. (2017), there were no significant gender disparities in the level of pleasure that online learners experienced with their learning. This finding aligns with the research carried out by Hung et al. (2010), Goswami and Dutta (2016), and Mohamad et al. (2020).

Conversely, there have been publications indicating that female students exhibit higher levels of satisfaction with e-learning subjects compared to male students (González-Gómez et al., 2012). Lu and Chou (2010) reported contrasting results, revealing that males exhibited higher levels of satisfaction with e-learning compared to females. In a similar vein, Hoogerheide et al. (2016) discovered that males experienced a much higher level of enjoyment and satisfaction while engaging in e-learning with video models.

With these controversial results, gender difference can still consider to be a relevant factor to examine when studying about students' satisfaction in online learning.

III. Research model and methodology

3.1 Research model

Many studies have shown that students' online interactions are considered as a significant contributor of students' satisfaction and a fundamental need for online learning to be success (Sher, 2009; De Pryck & DePryck, 2021; Yousaf et al, 2022). Yet, surprisingly, the importance of each interaction is found to be quite varied. Several studies have shown that the level of contact between students and instructors is the most reliable indicator of course satisfaction (Bolliger & Martindale, 2004; Battalio, 2007; Sher, 2009). Additional studies on online learning have shown that the level

of contact between students is a more accurate predictor of student satisfaction than the extent of interaction between students and instructors (Jung et al., 2002; Rodriguez Robles, 2006).

Two research models were established. The first research model to be tested in this study suggests that all types of students' online interaction have a positive impact on students' overall satisfaction in ERL. The main goal is to analyse the correlation between each category of online engagement and students' level of satisfaction. Furthermore, it also aims to compare the importance of each type of interaction and identify which one is a better predictor of students' satisfaction. The literature review led to the formulation of the following hypothesis:

H1: There is a positive relationship between the student-instructor online interaction and students' satisfaction in online learning.

H2: There is a positive relationship between the student-student online interaction and students' satisfaction in online learning.

H3: There is a positive relationship between the student-content online interaction and students' satisfaction in online learning.

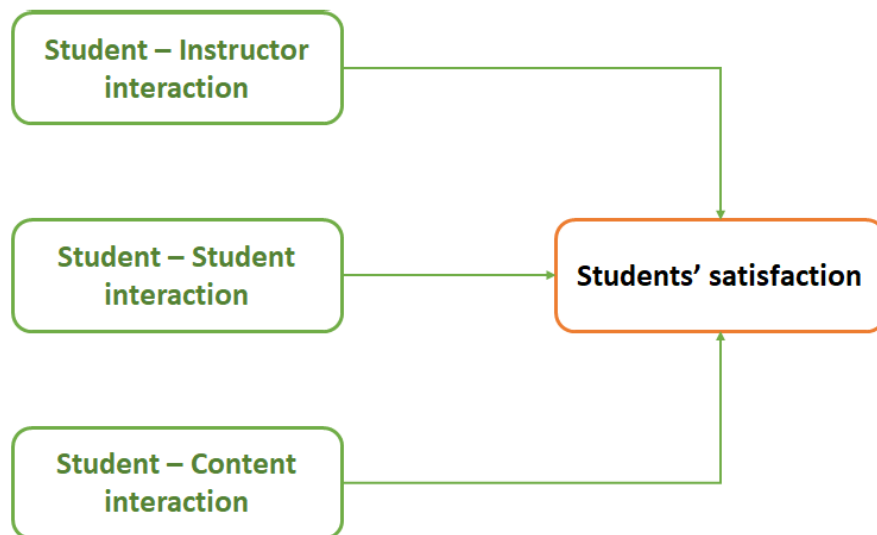


Figure 3. Research model 01

In an online learning environment, the quality of interaction is vital in facilitating communication (Diep et al. 2017). However, the majority of research tend to concentrate on primary aspects that influence students' happiness with online platforms rather than the actual online engagement. Interaction is vital in all types of education as it is the sole means of

transmitting information, assessing comprehension, and establishing an effective feedback mechanism. Therefore, it is crucial to conduct empirical research to examine all potential elements that may influence the manner in which students engage in online learning in general, and specifically in the context of ERL.

The second research model focus on exploring possible determinants of students' online interactions. Based on the findings of literature review, there are total eight possible variables, includes physical learning environment variables (learning space, learning device, access to internet), prior experience variables (online learning experience, study abroad experience, work experience), and demographic variables (age and gender). Here are the hypotheses for the second model:

H4: There is a positive relationship between the prior online learning experience and students' interaction in online learning.

H5: There is a positive relationship between the prior study abroad experience and students' interaction in online learning.

H6: There is a positive relationship between the prior working experience and students' interaction in online learning.

H7: There is a positive relationship between the learning space and students' interaction in online learning.

H8: There is a positive relationship between the learning device and students' interaction in online learning.

H9: There is a positive relationship between the access to internet and students' interaction in online learning.

H10: There is no significant relationship between gender of students and their online interaction.

H11: There is no significant relationship between age of students and their online interaction.

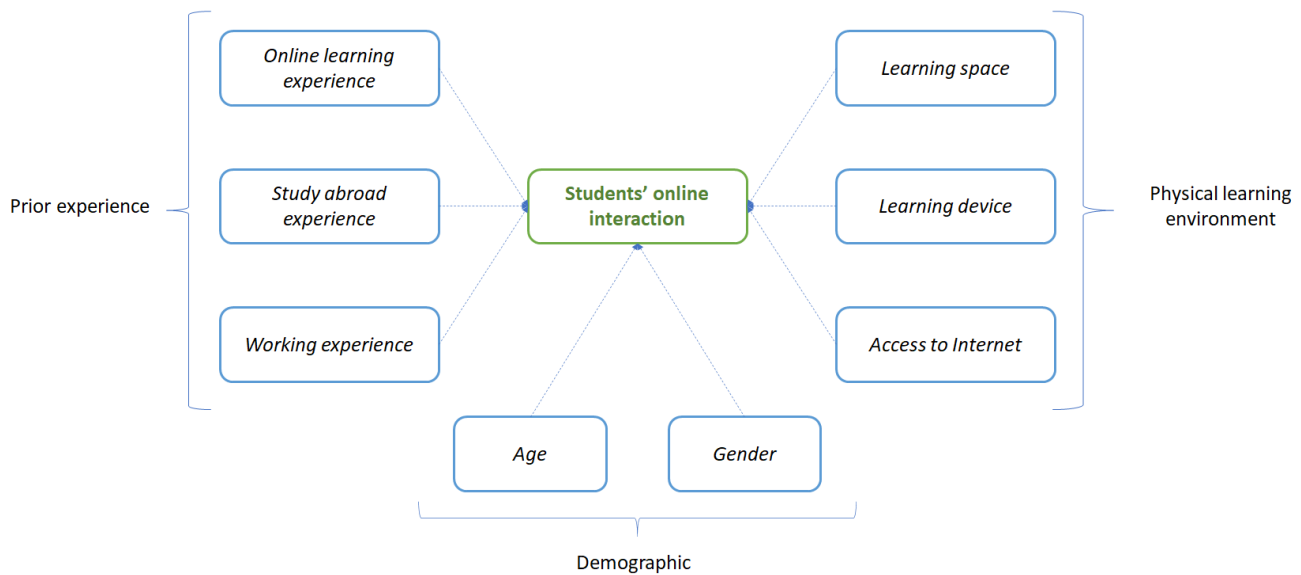


Figure 4. Research model 02

3.2 Methodology

Various research methodologies possess distinct benefits and drawbacks. Typically, there are three primary research methodologies: quantitative, qualitative, and mixed method research.

Quantitative research, as described by Bryman (2016), is a research approach that places focus on quantification during the gathering and analysis of data. This approach is commonly employed to test theoretical hypotheses by analysing the correlation between variables and assumes a perspective of social reality as an external entity. Numerical data, known as quantitative data, can be examined using statistical processes.

In contrast, a qualitative method is a strategy used to investigate and comprehend the significance that individuals or groups attribute to a social or human situation. The qualitative technique is commonly employed to comprehend the participants' experiences, viewpoints, and thoughts in the study. It aims to discover the meaning, purpose, and reality associated with the subject matter. The research process entails the formulation of inquiries and methodologies, the collection of data usually obtained within the participant's environment, the analysis of data by progressively moving from specific details to broader patterns, and the researcher's evaluation of the significance of the findings.

Mixed methods research is a systematic approach to investigation that entails gathering both quantitative and qualitative data, merging the two types of data, and employing specific designs that may incorporate philosophical assumptions and theoretical frameworks. The fundamental premise of this type of investigation is that the integration of qualitative and quantitative methodologies yields a more comprehensive comprehension of a study issue compared to using either methodology in isolation (Ivankova et al., 2006; Bryman, 2016).

This study utilised a mixed method research design to examine the viewpoints of Vietnamese students regarding their learning experience while pursuing distance education through online platforms at European universities within the COVID-19 pandemic. This study investigated students' assessment of their online learning interactions and explored their satisfaction levels with their experience in the online learning environment.

3.2.1 Participants

As being presented in the context of the study, spring term in 2020 is a difficult time for Vietnamese students in deciding to study abroad, as the application period of the academic year 2020-2021 had already started from the autumn 2019, before the COVID-19 occurred. Many Vietnamese students postponed their study journey due to the uncertainty of the pandemic outbreak, while there are still number of students decided to study online instead, whether in Vietnam or in the destination country.

This is opposite to the academic year 2021-2022 onwards, as online learning had become mandatory after 01 year of the epidemic and every student had been aware of studying online when they decided to apply for studying abroad. For students of the academic year 2020-2021, when the epidemic situation was still complicated, and none of them would prepare to study online, the reason behind decision of accepting study offer through online learning is still questionable. However, it is important to discover their perspective because it partly showed their motivation and expectation of studying in distance. This perspective would affect how students perceived the online learning experience that they received after that, thus affecting their feelings and attitudes toward the learning process.

Therefore, the study will focus only on participants admitted as a fulltime student at a HEI located in Europe in autumn 2020 and choose to study distancing from Vietnam via online platform.

3.2.2 Research design: Mixed-method sequential explanatory

Recently, there has been a growing trend in research to combine qualitative and quantitative approaches (Bryman, 2016). This approach, known as mixed method design, is favoured because it allows for the collection of precise and comprehensive data, which in turn facilitates the achievement of research objectives and the answering of research questions. With the aim is to examine the relationship among various variables related to students' interaction and satisfaction, plus explore students' opinions in detail, this study will use the "Mixed-method sequential explanatory design".

This methodology consists of two distinct stages: the quantitative (QUAN) phase, which involves analysing numerical data to gain a statistical understanding of the research problem, and the qualitative (QUAL) phase, which involves conducting a detailed analysis to explain the statistical results by exploring the perspectives of the participants in greater depth. (Ivankova et al., 2006; Bryman, 2016).

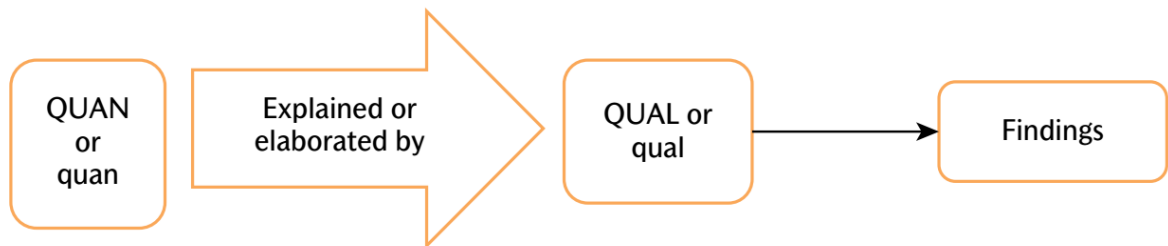


Figure 5. Research Design

3.2.3 Sampling strategy

There are two types of sampling methods: probability-based sampling (sometimes known as 'random sampling') and non-probability sampling. In a probability-based sample, respondents are chosen using a probabilistic method, and the chance of each member of the population being selected into the sample is known. It is not mandatory for the sampling probabilities to be uniform for every individual in the sampling frame. In contrast, non-probability samples are obtained when it is impossible to establish the likelihood of including every unit or respondent in the sample, or when it is the individual's choice to participate in the survey (Ivankova et al., 2006; Bryman, 2016).

In a probability-based survey, participants have the option to choose not to participate, known as 'opting out'. However, rigorous surveys aim to minimise the number of participants who

elect not to participate, which is referred to as nonresponse. Bias can exist in non-probability surveys, but its magnitude is likely to be far higher. This is because the individuals who choose to participate in such surveys are unlikely to constitute a representative sample of the whole population. Additionally, there is usually no data available on those who choose not to participate. However, as the aim is to reach as many respondents as possible in the short time and in the most convenience way, this study would still choose non-probability sampling method as the sampling techniques.

Specifically, a purposeful sampling technique was used to create a list of potential participants who are Vietnamese fulltime students at European HEIs in Autumn 2020 and stay in Vietnam during the time studying ERL for at least one semester. Specifically, “criteria” purposive sampling and “snowball” purposive sampling were applied with the following objective:

- Criteria: to recruit participant that satisfy pre-established criteria. In this study, the criteria include nationalities, country of study, type of learning model, and time of enrollment.
- Snowball: to reach as many as participants that share similar characteristics with the “criteria purposive sample” via personal network.

As for the QUAL data, this phase was conducted after the QUAN phase, and the respondents were chosen among the collected sample. Furthermore, the QUAL data would involve in more in-depth opinions from current participants. Therefore, a probability-based sample techniques were chosen to increase stronger statistical inference about the whole sample, and stratified random sampling was a sampling technique applied for this second phase. Stratified random sampling technique is used to select a specific proportion of participants from various sub-populations (which is divided by their shared characteristic, or “strata”) in the larger population to ensure that the selected subject will be representative of the population of interest (Bryman, 2016). In this study, the population of interest is the sample from the QUAN phase and the chosen strata are level of education and online learning experience. The purpose of using this technique is to obtain the best represent of the whole sample with greater precision while still be able to make a comparison of data between each strata.

3.2.4 Research tools

3.2.4.1 *Phase 1: Online Survey*

The first phase of this study is based on a quantitative research approach, with the survey strategy applied as the research method. The aim is to reach as many responses as possible for the quantitative data.

The data will be collected in the form of survey by distributing online via various Facebook groups of Vietnamese students in European countries. By this way, the participants are already satisfying the criteria of being a Vietnamese citizen accepted as fulltime students in European HEIs. Table 1 presents all the Facebook groups that the survey invitations were sent out in both English (see Appendix A) and Vietnamese (see Appendix B). Due to this criterion, a sampling response rate could not be calculated as it was not possible to see how many students in these various groups saw the invitation and responded. It is also important to understand that many of the Facebook groups have students who are current and past students as members. Furthermore, the criteria set for purposeful sampling was specific for students attended from autumn 2020 and stayed in Vietnam, which lead to the further limitation of the sample collected for the study. The Facebook groups chosen to be distributed the questionnaire must still an active group with minimum 3 posts per week.

- Vietnamese students' group in Austria
- Vietnamese students in Belgium – SIVIBI
- Vietnamese students' association in Czech
- Vietnamese students' association in Denmark
- Vietnamese students' association in France – UEVF
- Vietnamese students' association in Finland – WTF
- Vietnamese students' association in Germany (Vietstudent.org)
- Vietnamese students and Azubi in Germany
- Vietnamese students' association in Hungary – SVHU
- Vietnamese students' association in Italy – ASVI
- Vietnamese Youths and Students in Ireland (VYSI)
- Vietnamese students' association in the Netherlands - VSNL
- Vietnamese students' association in Norway

- Vietnamese students' association in Poland
- Vietnamese students' association in Russia
- Vietnamese students in Sweden
- Vietnamese students' association in Spain
- Vietnamese students in UK
- Vietnamese students' association in UK – SVUK Forum
- VARAM - Vietnam's Association for Research and Methodology
- Opty Hunters
- Vietnamese Humanities & Social Sciences Association (VHSSA)
- VISE - Viet Incoming Scholars to Europe
- VSRM-Vietnam Social Research Methodology
- SJSJH – Group for students search scholarship and work in UK and EU
- Applicants For CHEVENING SCHOLARSHIP
- Erasmus Mundus Vietnam

The questionnaire will be self-developed bilingually (English, and Vietnamese) with multiple response formats: Likert scale, multiple choice with one answer, and multiple answers. Whichever the language was used in the invitation, two links for questionnaire were sent, one for English and one for Vietnamese – which aimed to students studied in non-English taught programme. The content of the survey is presented in Table 2:

	Group of content	Question type
Demographic	Age, Gender Study level, Study major Study country, Residential area	Q1 – Q6 (multiple choice)
Overview of ERL	Reason to accept ERL offer. Reason to stay in Vietnam. Type of LMS Type of online learning activities Type of online assessment	Q7 – Q11 (multiple response)
Prior experience	Confirmation of having prior experience of online learning and the status of completion Confirmation of having working experience and duration	Q12 – Q15 (Yes/No question with multiple options for “Yes” response)

	Confirmation of having experience in travelling abroad for study purpose	
Physical learning environment	Confirmation of having device and quiet place for study Type of devices Usual place for study Type of internet access	Q16 – Q20 (Multiple response)
Student – student interaction (SS) (Q21) - SS1-8: Positive statement - SS9-10: Negative statement		Q21 (10 statements) (5-point Likert scale)
Student – Instructor interaction (SI) (Q22) - SI1-8: Positive statement - SI9-10: Negative statement		Q22 (10 statements) (5-point Likert scale)
Student – learning material interaction (SL) (Q23) - SL1-6: Positive statement - SL7-10: Negative statement The number of hours per week spent on ERL (Q24)		Q23 (10 statements) (5-point Likert scale) Q24 (short answer)
Overall opinion of online interaction		Q25 – Q28 (5-point Likert scale)
Overall opinion of ERL experience (Q29) ERL experience evaluation (Q30) - ERL1-7: Positive statement - ERL8-10: Negative statement Preferable learning model (Q31)		Q29 (overall opinion) Q30 (10 statements) (5-point Likert scale) Q31 (multiple response)

Table 1. Content Designs of Questionnaire

Data is analysed by entering the SPSS system version 29.0 and to perform suitable statistical procedure to get the results and the findings of this research study. Before commencing the descriptive analysis of the dataset, a recoding was performed on the data from “Multiple response” and “Likert scale” questions. In SPSS, data for multiple response question was recorded in multiple columns, with one column per answer option. If participants selected that option, their selections are written as text in that column, and if not, the column would be leave as blank. Data as “written text” in multiple columns like this could not be applied to perform descriptive analysis, so those data needed to be converted to “numerical data”, and the selection of participants would be assigned as “1”.

As for Likert scale data, these were originally expressed as "String data" (Strongly Disagree – Disagree – Neutral – Agree – Strongly Agree). This recoding involved transforming the qualitative responses into "numerical data," assigning values ranging from 01 to 05. Specifically, 'Strongly Disagree' was re-coded as 01, and the numerical values increased incrementally with each subsequent Likert scale category, culminating with 'Strongly Agree' recoded as 05. At the same time, all negative statements (SS9-10, SI9-10, SL7-10, ERL5-7) would be reversed the numerical values, with 01 as 'Strongly Agree' and 05 as 'Strongly Disagree'.

Then, an assessment of the normality of data was performed for all variables. Normality test is a prerequisite for many statistical tests, which is used to determine whether a dataset follows a normal distribution, which is characterized by a bell-shaped curve. The key purpose of this test was to identify whether the mean value should be used to compare between/among the groups to calculate the significance level (P value). If the collected data are not normally distributed, resultant mean could not be a representative value of the whole dataset and medians were used to compare the groups, using nonparametric method. There are two main methods of assessing normality: Graphical and numerical (including statistical tests). It's important to note that normality tests are sensitive to sample size, and with larger sample sizes, even small departures from normality may be detected as statistically significant. With the sample size of 105 (>50), this study decided to employ the Normal Q-Q plot test together with the Kolmogorov–Smirnov test – which is suitable for moderate sample sizes and is often recommended when the sample size is not extremely large.

Specifically, this study planned to perform:

- Descriptive statistical analysis – to summarise the evaluation of participants about ERL experiences in different aspects.
- Linear regression analysis; Independent t-test and/or One-way ANOVA – to identify which variables influence students' online interaction and students' satisfaction and examine the relationship among them.

3.2.4.2 Phase 2: Follow-up semi-structured interviews

The second phase of the study will employ a qualitative (QUAL) method to provide additional explanation and interpretation of the findings from the QUAN. This will be accomplished through the use of semi-structured individual interviews. Semi-structured interviews are utilised as the main method for gathering data in order to gain a more profound comprehension

of the interviewees' experiences, emotions, and perceptions, as expressed in their own words. This approach grants the interviewees a significant degree of autonomy in determining how they respond (Bryman, 2016). The interview responses have been utilised to highlight quotations that either bolster or undermine the assertions stated in the research findings. These quotes have provided insight into the calibre and perspective on the fixed survey findings. The interviews were conducted to gain a more profound insight into a student's perception of their ERL experience.

QUAL participants will be recruited based on their consent for the following interview and their background characteristics in their previous QUAN questionnaires. Ideally, there should be 04 groups of background for participants in this study and 02 persons of each group will be chosen randomly:

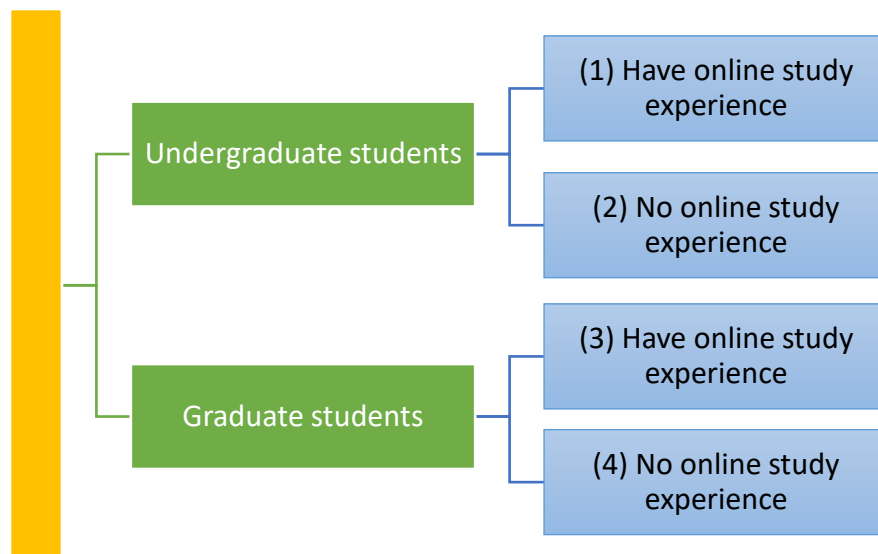


Figure 6. Expected background of participants

Due to the geographical distance between the participants and researcher, the interview is processed online with the time chosen by interviewees at their convenient. Specifically, a set of semi-structured questions for in-depth personal interviews will be developed bilingually and the interviews will be conducted online via one of the four following software (with the choice depends on interviewee preference): Zoom, Google Meet, Zalo, and Facebook. A minimum of four participants will be selected in cluster sampling method based on the Figure 6. Participants are encouraged to use English for the interview, but Vietnamese is also considered. If the participants

choose to answer by Vietnamese, all technical terms would be translated to English and explained in detail by the participants themselves to avoid any misunderstanding in analysis afterward.

The research commences with transcribing the audio-recorded interviews into transcripts as part of the QUAL data processing procedure. Subsequently, the transcription would be sent to the participants with suggested English translated version for final confirmation before undergoing detailed analysis. Following that, a theme analysis will be utilised to extract the primary viewpoints of students regarding their encounter with ERL.

3.2.5 Reliability and Validity

3.2.5.1 Validity

Validity is the extent to which scientific observations and measurements are authentic representations of some reality (Bryman, 2016). To ensure the accuracy of our findings, the transcripts of individual interviews were sent to the interviewed teachers and students for approval of the interview content. It is important to note that, due to the time-consuming nature of the transcription process, the researcher could not send the transcripts immediately after the interviews were conducted.

Given the specific focus on Vietnamese students in European universities during the COVID-19 pandemic, the generalizability to other contexts may be limited. However, providing detailed information about the sample and context in this study increases transparency and assists future studies in determining the applicability of the findings to their own situations.

3.2.5.2 Reliability

Reliability addresses whether the instrument consistently produces the same outcome when conducted again (Bryman, 2016). This study considered stability and internal reliability. Stability examines whether the measure remains constant over time and is typically assessed using the test-retest method. Unfortunately, implementing the test-retest method in this project was unfeasible due to the initially limited time frame and a slow response rate, making it difficult to reach the minimum required 100 responses over two semesters.

For internal reliability, the focus was on whether items in a measure are related to one another. The Cronbach's alpha test was employed as a rigorous statistical measure to assess the internal consistency of Likert scales concerning students' perspectives on online interaction. This

evaluation covered five distinct sets of Likert scale questions, each designed to capture different types of online interaction experiences and students' overall perspectives on the online learning experience.

In contrast to quantitative research, findings derived from qualitative data cannot be generalized (Bryman, 2016). However, the goal of this qualitative study was not to generalize but to provide in-depth insights into the current status of student-centered learning within the context of these institutions.

3.3 Ethical consideration

A social science study carries a moral responsibility towards the population being studied and the broader society. Engaging in investigations into private social lives can lead to the development of different policies, practises, and even laws. Therefore, researchers must guarantee the rights, privacy, and well-being of the individuals and communities that are the subject of their studies. In this study, measures were implemented to safeguard the privacy of the interviewees and prevent any potential harm.

Prior to conducting the research, a comprehensive project proposal, including questionnaires and an informed consent form, will be created and reviewed by the Norwegian Social Science Data Services (NSD).

Furthermore, a cover letter containing a concise summary of this study and the researcher's email contact will be distributed to all participants in the QUAL section. This is done to ascertain if any of the interviewees have any specific needs or concerns before to the interview procedures. In the introduction of the quantitative (QUAN) section, it is crucial to provide a clear explanation of the research aim and potential questions. This ensures that all respondents are fully aware of their responsibilities, as stated in the cover letter. The respondents have granted consent for the interview to be recorded, with the explicit understanding that the recordings will solely be utilised for transcription purposes. Additionally, the participant was required to acknowledge that their presence is optional, they have the freedom to modify their responses, can request the cessation of audiovisual documentation, and have the ability to withdraw from the interview at any moment without providing an explanation.

Furthermore, in order to safeguard privacy, complete anonymity was ensured for all participants in this study, and all primary data (including survey responses and interview recordings) will be permanently eradicated at completion of the research. The transcript data, devoid of any personal identification, will be securely stored in an electronically archived computer database with password protection. This database will be located in a restricted access area at the University of Oslo, solely for the purpose of conducting further study and scientific publishing. All data will be eradicated after a period of 5 years.

Upon completion of the study, all pertinent individuals, such as college administrators and interviewees, will be sent the study findings by email, should they require them.

IV. Finding and analysis

This chapter unfolds the outcomes derived from analyses aimed at addressing three pivotal research questions. In the initial segment, Section 4.1, the focus is on quantitative results. It commences by reviewing demographic information of the respondents, providing a contextual backdrop. Subsequently, a detailed presentation of descriptive statistics for each aspect of the analysis is offered. Then it continues with regression analyses, which investigates the relationship between students' online interactions and online satisfaction. Moving forward to Section 4.2, the subsequent part of the chapter focuses into the results obtained from a qualitative analysis, which complements and enriches the primary findings derived from the quantitative data.

4.1 Quantitative data

4.1.1 Demographic data

The online survey collected 123 responses, with 18 withdrawn, leaving 105 participants as final record. The study's convenience sample consisted of 59% female and 41% male; 66.7% who attended Graduate programme (Master) 33.3% undergraduates (Foundation and Bachelor). Table 2 presented demographic information of Age, Gender and Study Level of the participants. Additional information about Study country, Residential Area in Vietnam, and Study Major were described in Figure 7, Figure 8, and Table 3, respectively.

		Frequency (n=105)	Percent
Age	18 - 24 years old	37	35.2
	25 - 34 years old	60	57.1
	35 - 44 years old	8	7.6
Gender	Female	63	60
	Male	42	40
Study Level	Bachelor	35	33.3
	Master	70	66.7

Table 2. Age, Gender and Study Level

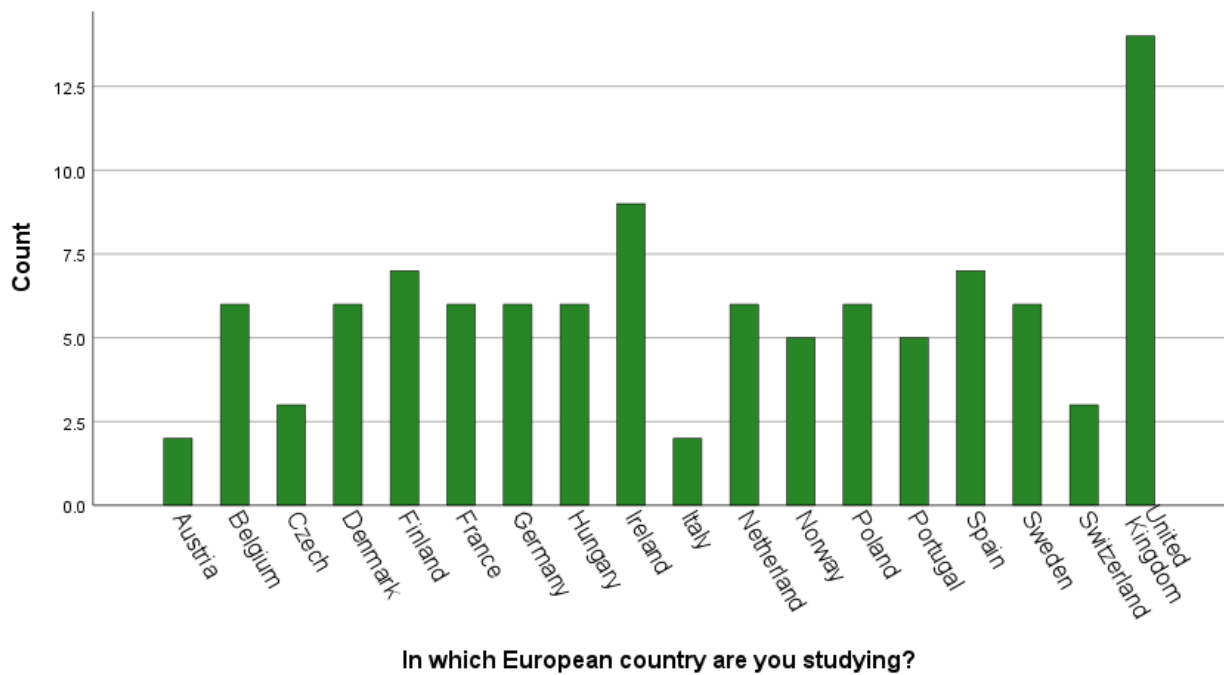


Figure 7. European countries where the participants attended.

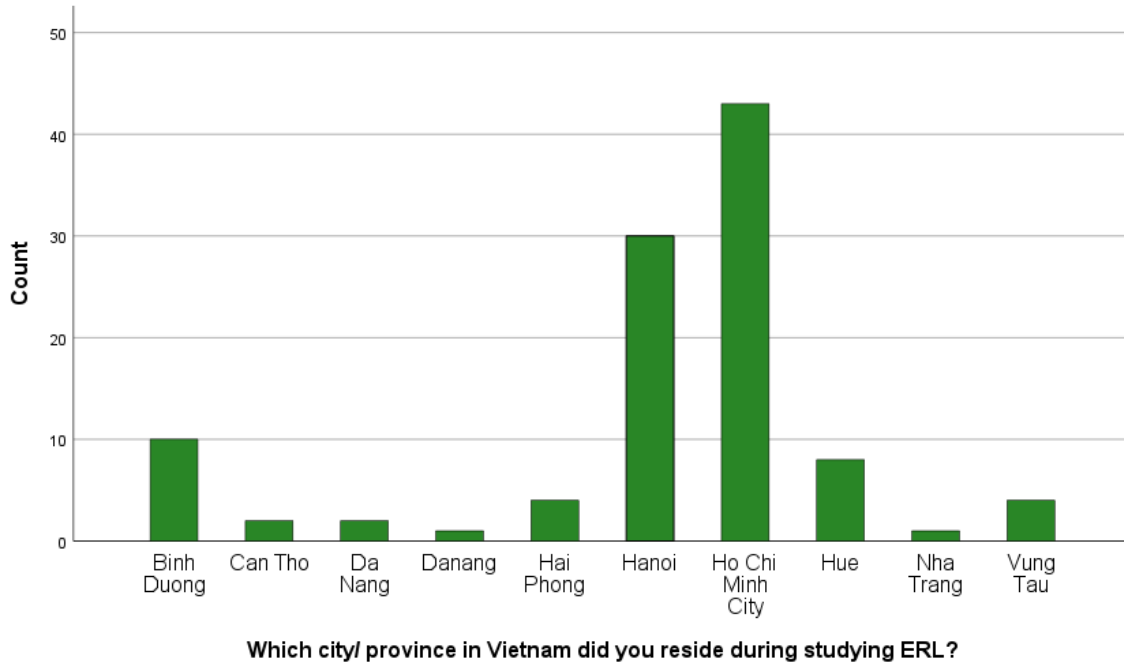


Figure 8. City/Province in Vietnam where participants resided during COVID-19 pandemic.

	Frequency (n=105)	Percent
Agricultural and Veterinary sciences	2	1.9
Business and Administration studies	27	25.7
Educational sciences and Teacher education	7	6.7
Engineering sciences	11	10.5
Health sciences, Welfare and Sport	13	12.4
Humanities and Arts	14	13.3
Information and Technology	14	13.3
Natural sciences	7	6.7
Social and Behavioural sciences	10	9.5

Table 3. Study major

	(n=105)	Percent	Countries applied
Blackboard	9	7.6	Belgium(4), UK(4), Germany(1)
Canvas	23	22.9	Belgium(1), Denmark(4), Ireland(1), Netherland(1), Norway(5), Sweden(3), Finland(2), UK(4), Spain(2)
Moodle	64	61.0	Austria(2), Belgium(1), Czech(3), Denmark(2), Finland(4), France(6), Germany(3), Hungary(5), Ireland(8), Italy(1), Netherland(4), Norway(1), Poland(4), Portugal(5), Spain(4), Sweden(2), Switzerland(3), UK(6)
Other	5	4.8	Finland (Mycourse), Hungary (Neptune), Netherland (Brightspace), Germany (OPAL), Poland (itslearning)
I don't know	4	3.8	Sweden(1), Germany(1), Poland(1), Spain(1)

Table 4. Learning management system (LMS)

Table 4 illustrates the diverse landscape of Learning Management Systems (LMS) employed in the context of ERL. Analysis of the gathered data reveals that Moodle emerged as the predominant LMS across European countries. Following closely, Canvas ranked as the second most popular system, with a notable concentration of use in northern European nations. Additionally, the dataset identified five other distinct types of LMS. However, due to limited available data, a comprehensive analysis of their respective preferences and popularity was constrained.

	Responses		Percent of Cases
	n=105	Percent	
Live videoconference with lecturer and class (via e.g. Zoom, Google Meet, Skype...)	103	24.1%	98.1%
Recorded lectures	100	23.4%	95.2%
Guided self-learning with support materials (book, audio, video, etc...)	99	23.1%	94.3%
Online assessments	105	24.5%	100.0%

Individual 1-1 online meetings	8	1.9%	7.6%
Game-based learning activities	3	0.7%	2.9%
Virtual laboratory learnings	10	2.3%	9.5%

Table 5. Types of online learning activities

As can be seen in Table 5, all the assessments were conducted online (100%) due to the social restriction during the COVID-19 pandemic. Most lessons were delivered through at least one of the three following ways: Live videoconference (98.1%), recorded lectures (95.2%), and guided self-learning with support materials (94.3%). While some supplementary activities such as individual 1-1 meetings and virtual laboratories were noted, their occurrence remained relatively limited in comparison to the predominant modes of lesson delivery.

	Responses		Percent of Cases
	n=105	Percent	
Online Quiz	91	31.4%	86.7%
Home assignment (file submission)	101	34.8%	96.2%
Oral assessment (including presentation) via video conferencing call (such as Zoom, Google Meet, Skype...)	32	11.0%	30.5%
Live written test (have time countdown in secured windows)	66	22.8%	62.9%

Table 6. Types of online assessment

Table 6 provides a comprehensive overview of the assessment methods employed during the COVID-19 pandemic. Notably, online quizzes and home assignments through file submissions emerged as the predominant modes, constituting 86.7% and 96.2%, respectively, of the online assessment landscape. Another prevalent method was live written tests featuring a timed countdown within a secured window, garnering popularity at 62.9%. Additionally, a significant proportion of participants, accounting for around one-third, encountered oral assessments, highlighting the varied approaches employed during this unique period of remote learning.

Responses

	n=105	Percent	Percent of Cases
I enjoy studying online	5	1.7%	4.8%
I assumed that online learning would be not that different from on-site learning.	57	19.9%	54.3%
I thought that I just needed to study online for a short period	93	32.5%	88.6%
I could receive a tuition discount from the university if I agreed to accept my offer	24	8.4%	22.9%
I would lose my scholarship if I cancelled/postponed my study.	43	15.0%	41.0%
I would lose my deposit if I cancelled/postponed my study.	13	4.5%	12.4%
I would lose my study offer if I cancelled/postponed my study.	51	17.8%	48.6%

Table 7. The reason why students decided to accept the offer to study via ERL during the COVID-19 pandemic.

Tables 7 delineated the rationale behind the decisions made by Vietnamese students to opt for Electronic Remote Learning (ERL). The prevailing sentiment among most students was an anticipation of a short-term commitment to online learning (88.6%). This expectation was influenced by the timeline presented in Figure 1 of Section 1.2, highlighting the May-June 2020 period when several European countries reopened for international travel. It was also crucial deadline to accept study offers for Vietnamese students. The re-opening of international travel in some European countries during May-June 2020 led to the prevailing expectation among Vietnamese students that the online learning arrangement would be of a temporary nature and only last for approximately one semester. This, coupled with considerations such as potential financial losses (including scholarships, deposits, tuition discounts, etc.) and missed study opportunities (potential loss of study offers), influenced the decision-making process, ultimately leading to the acceptance of studying via ERL in the autumn of 2020. Only a very small number of students accepted the offer due to their own preference (4.8%).

	Responses		Percent of Cases
	n=105	Percent	
I was uncertain about the pandemic situation in Europe	80	28.7%	76.2%
I could save on my living expenses if I stayed in Vietnam	100	35.8%	95.2%
I did not have enough time to apply for a visa	23	8.2%	21.9%
I was not sure how long the pandemic would last	76	27.2%	72.4%

Table 8. Reason why students choose to stay in Vietnam to study via ERL.

In addition to accepting the ERL study offer, 95.2% students opted to remain in Vietnam instead of traveling abroad, primarily driven by the desire to economize on living expenses, as it can be seen in Table 8. Considering the initial expected duration of the ERL period was one semester (equivalent to 4-6 months), students found it reasonable to defer their travel plans until the subsequent semester. Furthermore, two predominant factors influenced their decision to stay in Vietnam were the wariness of the pandemic situation and the uncertainty regarding its duration.

A significant majority, comprising 76.2% of students, expressed concerns about the pandemic situation in Europe during this period. Notably, as mentioned in Figure 1 of Section 1.2, in March 2020, Vietnam had just reached 100 reported cases, while Europe had become an epicenter with around 1 million cases and 90,000 deaths. Given this stark contrast, students were apprehensive about the health situation in Europe and preferred to remain in Vietnam. Similarly, 72.4% of students shared the sentiment of uncertainty surrounding the duration of the pandemic. With the severity of COVID-19 pandemic in Europe in mid-2020, students were unsure about how long the pandemic would persist, prompting them to choose staying in Vietnam as a precautionary measure to avoid potential challenges or being stranded abroad. A significant subgroup, comprising 22.5% of participants, mentioned insufficient time of applying visa as the reason for staying in Vietnam. This limitation could be caused by the influence of social distancing measures in Europe, which resulted in a decelerated handling of visa applications.

4.1.2 Prior Experiences

		(n=105)	Percent	
Online learning experience	No	52	49.5	
	Yes – blended mode	7	6.7	
	Yes – fully online	26	24.8	
	Yes – both fully online and blended mode	20	19.0	
	Completed online course.	No	4 (n1=53)	7.5
		Yes	49 (n1=53)	92.5
Study Abroad experience	No	71	67.6	
	Yes – Exchange for at least 01 semester	8	7.6	
	Yes – Fulltime degree	10	9.5	
	Yes – Language learning	14	13.3	
	Yes – Summer course	2	1.9	
Working experience	No	25	23.8	
	Under 6 months	4	3.8	
	6 months to less than 1 year	7	6.7	
	1 year to less than 2 years	14	13.3	
	2 years to less than 5 years	41	39.0	
	5 years and more	14	13.3	

Table 9. Information of online learning experiences, study abroad experiences,

Table 9 presents descriptive data encompassing three types of prior experiences that have the potential to influence students' online interactions and satisfaction. Regarding online learning, a notable proportion of participants, specifically 49.5%, had no previous encounter with any type of online education prior to their involvement in ERL during the COVID-19 epidemic. Out of the individuals with prior experience in online learning, 92.5% of them successfully finished their previous online courses.

When examining participants' history of studying abroad, a substantial 67.6% had never travelled abroad for academic pursuits. For those with past experiences of studying abroad before the COVID-19 pandemic, 13.3% of them went abroad for exchange programme while only a 1.9% had engaged in summer courses. The distribution of other types of abroad education was quite balanced between fulltime degree pursuers (9.5%) and language learners (7.6%).

Turning to participants' working experiences, nearly a quarter of number of reported having no prior work experience, primarily consisting of undergraduate students. A total of 10.5% of participants had less than one year of cumulative work experience, while a significant majority, accounting for 39%, boasted a range of 2-5 years of professional experience.

4.1.3 Physical learning environment

		Responses		Percent of Cases
		(n=105)	Percent	
Learning Device	Have access to a personal device	105	100%	100%
	Smartphone	49	22.4%	46.7%
	Tablet	53	24.2%	50.5%
	Laptop	105	47.9%	100.0%
	Personal Computer (PC)	12	5.5%	11.4%
Learning Place	Have access to a quiet place	105	100%	100
	My own room in the house where I am living	103	48.1%	98.1%
	Other rooms in the house where I am living	12	5.6%	11.4%
	Internet café/ Game center	30	14.0%	28.6%
	Work café/ Co-working space	54	25.2%	51.4%
	Library	15	7.0%	14.3%
Internet access	Home internet service	103	53.9%	98.1%
	Mobile broadband	24	12.6%	22.9%
	Wi-Fi service at café/ libraries	64	33.5%	61.0%

Table 10. Physical learning environments

In evaluating the physical learning environment of students during the COVID-19 pandemic, three key variables were considered, and the summarized data in Table 10 provides insights into these aspects. Notably, all participants reported having ownership of a personal laptop and access to a quiet place for online study. Additionally, approximately half of the participants utilized at least one additional device such as smartphones (46.7%) or tablets (50.5%) alongside

their laptops. Access to personal computers was noted for a smaller proportion of participants (11.4%).

Concerning the learning environment, the majority of participants (98.1%) chose to study in their own rooms within their residences. Work cafés or co-working spaces emerged as the second most popular choice for online study, with 51.4% of participants opting for this setting. Notably, a significant portion (28.6%) frequented Internet cafés or game centers, and surprisingly, libraries were not a popular choice, garnering only a 14.3% response.

Given the prevalent practice of studying at home, it was unsurprising that home internet service was overwhelmingly favoured, with a substantial 98.1% response rate. Wi-Fi services at cafés and libraries were also widely utilized, reflecting the choices of participants who opted for studying in such external environments reached 61%.

4.1.4 Reliability Test

The results indicated a high level of reliability for all sets, as evidenced by Cronbach's Alpha values exceeding 0.8. Additionally, the absence of any "Corrected Item-Total Correlation" falling below 0.3 further affirmed the robustness of the Likert scales, suggesting that each item within the sets contributed consistently to the measurement of the underlying constructs. This comprehensive reliability analysis enhances the credibility of the subsequent descriptive analysis, ensuring that the Likert scale questions effectively and consistently measure the intended aspects of students' perspectives on various types of online interaction. All items have (*) mark are items that originally presented in negative tone in questionnaire and have been re-coded as positive tone in SPSS data.

Items of Likert Scale		M	SD	Corrected Item – Total correlation	Cronbach's α if Item Deleted
Student – Instructor interaction	SI1	3.4190	.66189	.783	.841
	SI2	3.8190	.49577	.391	.870
	SI3	3.1810	.66189	.671	.850
	SI4	3.4476	.70685	.670	.850
	SI5	3.1905	.78563	.741	.843

	SI6	3.4762	.63693	.592	.857
	SI7	3.8762	.53160	.389	.870
	SI8	3.9048	.56371	.577	.858
	SI9*	3.2000	.78935	.470	.869
	SI10*	3.2952	.75859	.591	.857
	Cronbach's α with all items = 0.870				
Student – Student interaction	SS1	3.5143	.66671	.686	.867
	SS2	3.9238	.58335	.557	.876
	SS3	3.8381	.63736	.544	.876
	SS4	3.4952	.60644	.761	.863
	SS5	3.5810	.56808	.816	.861
	SS6	3.5333	.65143	.606	.872
	SS7	3.3048	.68112	.565	.875
	SS8	3.1429	.82542	.555	.877
	SS9*	3.2952	.89790	.541	.880
	SS10*	2.9810	.98039	.679	.869
	Cronbach's α with all items = 0.883				
Student – Learning material	SL1	3.5333	.63650	.496	.888
	SL2	3.4095	.71650	.694	.874
	SL3	3.5238	.66644	.615	.880
	SL4	3.7143	.67531	.623	.879
	SL5	3.6571	.61751	.708	.873
	SL6	3.5619	.58710	.561	.883
	SL7*	3.5429	.65087	.705	.873
	SL8*	3.4857	.65213	.744	.871
	SL9*	3.5619	.58710	.675	.876

	SL10*	3.5429	.66548	.466	.890
	Cronbach's α with all items = 0.890				
Perspective of ERL experience	ERL1	3.2286	.91207	.664	.886
	ERL2	3.4190	.87465	.700	.884
	ERL3	2.8952	.86518	.731	.881
	ERL4	2.9238	.68914	.684	.886
	ERL5	3.7714	.50492	.495	.897
	ERL6	3.4095	.59960	.685	.887
	ERL7	2.9619	.90855	.844	.872
	ERL8*	2.6571	.94897	.494	.900
	ERL9*	2.5524	.83183	.754	.880
	ERL10*	2.6857	.82409	.483	.898
		Cronbach's α with all items = 0.898			

Table 11. Reliability test Cronbach's alpha for Likert Scale variables.

4.1.5 Online interactions

4.1.5.1 Student – Instructor interaction

Code	Student-Instructor interaction	Percentage (n=105)				
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
SI1	I had numerous interactions with the lecturers during the course		9.5	39	51.4	
SI2	I asked the lecturers my questions through different electronic means, such as email, discussion board, instant messaging tools, etc.		1	20	75.2	3.8
SI3	It was easy for me to contact my lecturers outside of the class		13.3	56.2	29.5	1

	time with digital communication channel.					
SI4	The lecturers always replied to my questions in a timely fashion.		8.6	41.9	45.7	3.8
SI5	The lecturers regularly posted questions for students to discuss on the discussion board.		20	43.8	33.3	2.9
SI6	I answered all the questions during class and on the discussion board.		2.9	51.4	41	4.8
SI7	I received feedback for every assignment.		3.8	9.5	81.9	4.8
SI8	The lecturers' feedback on my assignment are helpful for my learning progress			21	67.6	11.4
SI9	I have time to communicate with my lecturers in each class.		22.9	34.3	42.9	
SI10	It took a short time to get feedback from my lecturers	1	15.2	37.1	46.7	

Table 12. Frequencies data of perspective on Student – Instructor interactions

According to Table 12, it could be seen that all participants had a highly positive attitude toward their interaction with lecturers during ERL. Notably, most of them agreed that they had actively contact their lecturers via different ways (75.2%), received feedback for every assignment (81.9%) and that feedback were helpful for their learning progress (67.6%). Nearly half of participants response that they actively answered all the questions during class and discussion board (41%) and discuss with lecturers during class time (42.9%). Besides, lecturers also quite supportive for answer all the questions from students (45.7%) and sending feedback for assignments in short time (46.7%).

“Neutral” responses were varied, but there was one key statement that get approved by nearly 60% of participants – the accessible of lecturers outside of class time via digital communication chanel. It was also a notable noted that 13.3% students reported that they had difficulties in contacting lecturer outside of class time. Furthermore, around one-fifth of students

reported that they have very little to no time for communication with lecturers during class (22.9%) and lecturers also didn't utilize the discussion board for discussion off class (20%).

7 out of 10 given statements could receive the highest rate as Strongly agree, though the percentage were quite low.

4.1.5.2 Student – Student interaction

Code	Student-Student interaction	Percentage (n=105)				
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
SS1	I had numerous interactions related to the course content with fellow students		7.6	35.2	55.2	1.9
SS2	I communicated with my classmates about the course content through various electronic means, such as email, discussion boards, instant messaging tools, etc.		1.0	18.1	68.6	12.4
SS3	My classmates communicated with me through various electronic means, such as email, discussion boards, instant messaging tools, etc.		1.0	26.7	60.0	12.4
SS4	I shared my thoughts or ideas about the lectures and its applications with other students during the course.		5.7	39.0	55.2	
SS5	My classmates were willing to share their ideas with me about the lectures during the course.		3.8	34.3	61.9	
SS6	My classmates replied to my questions on the discussion board.		5.7	38.1	52.3	2.9
SS7	I commented on other students' thoughts and ideas on the discussion board.		9.5	53.3	34.3	2.9
SS8	It was easy for me to contact my classmates outside of the class time.	3.8	14.3	47.6	32.4	8.1

SS9	I interacted with my classmates many times during the course.	3.8	18.1	22.9	55.2	
SS10	I found it easy to collaborate with my classmate while working on online group assignment.	4.8	33.3	21.9	39.0	1.0

Table 13. Frequencies data of perspective on Student – Student interactions

Concerning the engagement between students and their classmates during ERL, the majority of participants expressed a strongly good interaction. Specifically, over 50% of respondents "agreed" with 7 out of 10 favourable remarks listed in Table 13. Nevertheless, a significant majority of students (47.6% neutral, 14.3% disagree, and 3.8% strongly disagree) encountered difficulties in reaching out to their classmates outside of scheduled class hours. Additionally, a considerable portion of students (21.9% neutral, 33.3% disagree, and 4.8% strongly disagree) faced challenges when it came to collaborating with their peers on online group tasks. It is expected that the underlying causes for those figures will be identified by more qualitative data obtained through further investigation.

4.1.5.3 Student – Learning materials

		Percentage (n=105)				
Code	Student-Student interaction	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
SL1	I was provided a variety of online resources (i.e., video, animation, interactive media, simulations, virtual manipulatives, etc.) related to my course.		3.8	42.9	49.5	3.8
SL2	It was easy for me to use the LMS and online library system.		9.5	43.8	42.9	3.8
SL3	The learning materials related to the live lectures (i.e., lecture slides, recorded lessons or video lectures) were well-designed and stimulated my interest for the class content.		4.8	42.9	47.6	4.8
SL4	The digital reading materials (i.e., textbook, report, article)		2.9	32.4	55.2	9.5

	helped me to understand class content better.					
SL5	The homework assignments helped me to assess my understanding of the topic.		2.9	33.3	59.0	4.8
SL6	The process of taking online assessment went smoothly.		4.8	34.3	61.0	
SL7	I found it easy to access the online learning materials.		4.8	40.0	51.4	3.8
SL8	I had NO trouble finding the right digital resources to use for my learning.		6.7	40.0	51.4	1.9
SL9	I was comfortable with the download duration of learning resources.			48.6	46.7	4.8
SL10	I rarely have technical problems when I try to use digital resources (i.e., system error or internet connection)		7.6	32.4	58.1	1.9

Table 14. Frequencies data of perspective on Student – Learning materials interactions

Table 14 presented a positive report regarding the interaction between students and learning resources. All 10 items pertaining to their activities in this form of interaction had a minimum of 40% agreement. The absence of a "strongly disagree" option was noted, however, approximately 3-10% of respondents expressed disagreement for 9 out of 10 assertions. It seemed that universities should take into account the technological proficiency of Vietnamese students when it comes to utilising online learning materials.

4.1.6 Students' perspective about their experiences during ERL

		Percentage (n=105)				
Code	Perspective on ERL experience	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
ERL1	The guidance of using technology for ERL from my university were detailed and helpful	1.9	20.0	38.1	33.3	6.7
ERL2	I received adequate student support service (i.e., course	1.9	13.3	32.4	45.7	6.7

	registering, access to online materials, grade appeal, IT support, financial counselling, tutoring and mentoring, etc.) from my university during ERL.					
ERL3	I preferred to interact with others via online communication channel.	1.9	32.4	44.8	16.2	95.2
ERL4	The response time from my lecturers, classmates and university support was quicker via online communication than in onsite setting.	1.0	24.8	55.2	19.0	
ERL5	There were more opportunities for me to develop my IT skills during ERL.		1.0	23.8	72.4	2.9
ERL6	I felt comfortable with the amount of workload while attending ERL.		3.8	53.3	41.0	1.9
ERL7	I enjoyed participating in ERL as much as I enjoyed traditional onsite learning.	4.8	26.7	38.1	28.6	1.9
ERL8	It was easy to stay focused and keep up during the online session.	7.6	43.8	24.8	22.9	1.0
ERL9	I felt motivated and not isolated while attending ERL.	3.8	55.2	22.9	18.1	
ERL10	I was able to apply what I learned during ERL.	2.9	44.8	34.3	17.1	1.0
		Very negative	Negative	Neutral	Very Positive	Positive
O1	How enjoyable were your ERL classes during the pandemic?	1.0	19.0	32.4	39.0	8.6
O2	How would you rate your experience of all online interaction during ERL?		16.2	34.3	47.6	1.9
O3	How would you rate your overall experience of online interactions with all your lecturers?		15.2	39.0	43.8	1.9

O4	How would you rate your rate your overall experience of online interactions with your classmates?		18.1	28.6	48.6	4.8
O5	How would you rate your rate your overall experiences in using online learning materials?		8.6	36.2	45.7	9.5

Table 15. Frequencies of students' perspective in their overall ERL experience and overall experience of online interaction

The feedback addressing the general perception of the ERL experience was diverse. Although the majority of students reported positive online interactions in Tables 12-14, 32.4% of students still express a preference for offline communication with their instructor and classmates, while 44.8% of students responded with a neutral stance. 41% of students expressed a sense of ease with the online workload, while an additional 53% reacted with a neutral stance. In addition, we discovered significant data indicating that approximately 20-25% of students expressed disagreement with statements ERL1-3-4-7. This disagreement suggests that these students did not find the direction provided by the institution to be beneficial and instead decided to continue their studies offline. According to statements ERL8-9-10, a significant proportion of students (40-55%) experienced negative emotions when studying online. These emotions included feelings of being unfocused, unmotivated, and alienated. Additionally, these students believed that they were unable to apply what they learned to real-life circumstances.

4.1.7 The relationship between students' online interaction and students' online satisfaction

Firstly, we conducted one way ANOVA test to determine whether there are any statistically significant differences between the means of the students' overall online interaction level and the students' overall satisfaction of ERL. After that, three additional tests are performed to check whether there are any statistically significant differences with each type of online interactions.

ANOVA						
Students' overall perspective of ERL						
		Sum of Squares	df	Mean Square	F	Sig.
Overall online interaction	Between Groups	74.965	3	24.988	194.189	<.001
	Within Groups	12.997	101	.129		

	Total	87.962	104			
Student - Instructor	Between Groups	59.081	3	19.694	68.872	<.001
	Within Groups	28.881	101	.286		
	Total	87.962	104			
Student – Student	Between Groups	45.454	3	15.151	36.000	<.001
	Within Groups	42.508	101	.421		
	Total	87.962	104			
Student – Learning material	Between Groups	40.841	3	13.614	29.179	<.001
	Within Groups	47.121	101	.467		
	Total	87.962	104			

Table 16. One-way ANOVA for differences in students' overall satisfaction of ERL experience by students' online interaction

According to Table 16, all p-values are less than 0.05, therefore, there is a statistically significant difference in the mean of overall students' satisfaction level between different types of online interactions. This is great to know, but this table does not show which of the specific groups differed. Thus, the Multiple Comparisons table (table 17, 18, 19, 20) will reveal those differences with Tukey Post hoc test.

Multiple Comparisons

Dependent Variable: Students' overall satisfactory level

Tukey HSD

(I) O2	(J) O2	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
2.00	3.00	-.94771*	.10556	<.001	-1.2235	-.6719
	4.00	-2.15882*	.10071	<.001	-2.4219	-1.8957
	5.00	-3.05882*	.26816	<.001	-3.7593	-2.3583
3.00	2.00	.94771*	.10556	<.001	.6719	1.2235
	4.00	-1.21111*	.07841	<.001	-1.4159	-1.0063
	5.00	-2.11111*	.26060	<.001	-2.7919	-1.4303
4.00	2.00	2.15882*	.10071	<.001	1.8957	2.4219
	3.00	1.21111*	.07841	<.001	1.0063	1.4159
	5.00	-.90000*	.25868	.004	-1.5757	-.2243
5.00	2.00	3.05882*	.26816	<.001	2.3583	3.7593
	3.00	2.11111*	.26060	<.001	1.4303	2.7919
	4.00	.90000*	.25868	.004	.2243	1.5757

*. The mean difference is significant at the 0.05 level.

Table 17. Tukey Simultaneous Tests for Differences of Means in Overall online interaction (O2)

Table 17 showed the differences of means in overall online interaction, and there is a statistically significant difference in satisfactory level between the rates of students' evaluation in overall online interaction.

Multiple Comparisons

Dependent Variable: Students' overall satisfactory level

Tukey HSD

(I) O3	(J) O3	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
		(I-J)			Lower Bound	Upper Bound
2.00	3.00	-1.04878*	.15763	<.001	-1.4606	-.6370
	4.00	-2.02174*	.15520	<.001	-2.4272	-1.6163
	5.00	-3.00000*	.40106	<.001	-4.0477	-1.9523
3.00	2.00	1.04878*	.15763	<.001	.6370	1.4606
	4.00	-.97296*	.11485	<.001	-1.2730	-.6729
	5.00	-1.95122*	.38723	<.001	-2.9628	-.9396
4.00	2.00	2.02174*	.15520	<.001	1.6163	2.4272
	3.00	.97296*	.11485	<.001	.6729	1.2730
	5.00	-.97826	.38625	.061	-1.9873	.0308
5.00	2.00	3.00000*	.40106	<.001	1.9523	4.0477
	3.00	1.95122*	.38723	<.001	.9396	2.9628
	4.00	.97826	.38625	.061	-.0308	1.9873

*. The mean difference is significant at the 0.05 level.

Table 18. Tukey Simultaneous Tests for Differences of Means in Student - Instructor online interaction (O3)

Table 18 showed the differences of means in Student – Instructor interaction, and there is NO statistically difference between means those people rated as “positive” and as “very positive” ($p = 0.061 > 0.05$)

Multiple Comparisons

Dependent Variable: Students' overall satisfactory level

Tukey HSD

(I) O4	(J) O4	Mean Difference			95% Confidence Interval	
		(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
2.00	3.00	-.41228	.19021	.139	-.9092	.0846
	4.00	-1.48091*	.17437	<.001	-1.9364	-1.0254
	5.00	-1.97895*	.32608	<.001	-2.8308	-1.1271
3.00	2.00	.41228	.19021	.139	-.0846	.9092
	4.00	-1.06863*	.14927	<.001	-1.4586	-.6787
	5.00	-1.56667*	.31337	<.001	-2.3853	-.7480
4.00	2.00	1.48091*	.17437	<.001	1.0254	1.9364
	3.00	1.06863*	.14927	<.001	.6787	1.4586
	5.00	-.49804	.30402	.362	-1.2922	.2962
5.00	2.00	1.97895*	.32608	<.001	1.1271	2.8308
	3.00	1.56667*	.31337	<.001	.7480	2.3853
	4.00	.49804	.30402	.362	-.2962	1.2922

*. The mean difference is significant at the 0.05 level.

Table 19. Tukey Simultaneous Tests for Differences of Means in Student - Student online interaction (O4)

Table 19 showed the differences of means in Student – Student interaction, and there is NO statistically difference between means those people rated as “Negative” and “Neutral” ($p = 0.139 > 0.05$) and between those people rated as “Positive” and “Very positive” ($p = 0.362 > 0.05$)

Multiple Comparisons

Dependent Variable: Students' overall satisfactory level

Tukey HSD

(I) O5	(J) O5	Mean Difference			95% Confidence Interval	
		(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
2.00	3.00	-.56725	.25321	.119	-1.2287	.0942
	4.00	-1.65278*	.24811	<.001	-2.3009	-1.0046
	5.00	-1.77778*	.31384	<.001	-2.5976	-.9579
3.00	2.00	.56725	.25321	.119	-.0942	1.2287
	4.00	-1.08553*	.14831	<.001	-1.4730	-.6981
	5.00	-1.21053*	.24276	<.001	-1.8447	-.5764

4.00	2.00	1.65278*	.24811	<.001	1.0046	2.3009
	3.00	1.08553*	.14831	<.001	.6981	1.4730
	5.00	-.12500	.23743	.952	-.7453	.4953
5.00	2.00	1.77778*	.31384	<.001	.9579	2.5976
	3.00	1.21053*	.24276	<.001	.5764	1.8447
	4.00	.12500	.23743	.952	-.4953	.7453

*. The mean difference is significant at the 0.05 level.

Table 20. Tukey Simultaneous Tests for Differences of Means in Student - Learning materials using (05)

Similarly, table 20 showed the differences of means in Student – Learning material using, and there is NO statistically difference between means those people rated as “Negative” and “Neutral” ($p = 0.119 > 0.05$) and between those people rated as “Positive” and “Very positive” ($p = 0.952 > 0.05$)

Next, Chi-Square test is conducted to determine if there is any relationship between variables. However, it is noted that some values appeared less than 5 times, thus the trusting level of Chi-square may not be accurate as expected.

Chi-Square Tests

		Value	df	Asymptotic Significance (2-sided)
Students' satisfaction *	Pearson Chi-Square	191.525 ^a	12	<.001
	Likelihood Ratio	184.251	12	<.001
	Linear-by-Linear Association	88.134	1	<.001
	N of Valid Cases	105		
a. 12 cells (60.0%) have expected count less than 5. The minimum expected count is .02.				
Overall online interaction	Pearson Chi-Square	128.392 ^a	12	<.001
	Likelihood Ratio	114.330	12	<.001
	Linear-by-Linear Association	69.814	1	<.001
	N of Valid Cases	105		
a. 12 cells (60.0%) have expected count less than 5. The minimum expected count is .02.				
Student – Instructor interaction	Pearson Chi-Square	80.365 ^a	12	<.001
	Likelihood Ratio	82.495	12	<.001
	Linear-by-Linear Association	51.015	1	<.001

Student interaction	N of Valid Cases	105		
	a. 12 cells (60.0%) have expected count less than 5. The minimum expected count is .05.			
Students' satisfaction *	Pearson Chi-Square	86.626 ^a	12	<.001
	Likelihood Ratio	90.208	12	<.001
	Linear-by-Linear Association	43.039	1	<.001
Student – Learning material using	N of Valid Cases	105		
	a. 14 cells (70.0%) have expected count less than 5. The minimum expected count is .09.			

Table 21. Chi-square test between Satisfaction and Online interactions

As all values of Asymptotic Significance (2-sided) are less than 0.01, it can be temporarily expected that there are relationships between Students' online learning satisfaction and Students' online interactions.

Now, the Pearson correlation coefficient is conducted to measure the strength of a linear association between two variables.

		Correlations			
		O2	O3	O4	O5
O1	Pearson Correlation	.921	.819	.700	.643
	Sig. (2-tailed)	<.001	<.001	<.001	<.001
	N	105	105	105	105

Table 22. Pearson correlation coefficient (1)

The Pearson correlation coefficient values, r , are all positive, which means there is a positive association between Students' online satisfaction and all types of online interaction. With these results from table 22, it can be assumed that hypothesis H1, H2, and H3 can be all accepted.

4.1.8 The relationship between different variables and students' online interaction

According to the literature review, we conducted the analysis on three sets of variables following Research model O2 to identify the answer for Hypothesis H4 – H11. Unfortunately, it was impossible to conduct One-way ANOVA test with Variable set of Multiple response, so the hypothesis H7, H8, and H9 were discarded due to unavailability. Similarly in Section 4.1.7, there will be One-way ANOVA, Chi-Square and Pearson Correlation.

ANOVA						
Students' overall perspective of online interaction						
		Sum of Squares	df	Mean Square	F	Sig.
Age	Between Groups	2.651	2	1.325	2.779	.108
	Within Groups	59.311	102	.581		
	Total	61.962	104			
Gender	Between Groups	4.629	1	4.629	8.315	.005
	Within Groups	57.333	103	.557		
	Total	61.962	104			
Study Level	Between Groups	.576	1	.576	.967	.328
	Within Groups	61.386	103	.596		
	Total	61.962	104			
Online learning experience	Between Groups	12.190	3	4.063	8.245	<.001
	Within Groups	49.772	101	.493		
	Total	61.962	104			
Working experience	Between Groups	1.710	4	.428	.694	.598
	Within Groups	59.161	96	.616		
	Total	60.871	100			
Study abroad experience	Between Groups	12.042	4	3.010	6.031	<.001
	Within Groups	49.920	100	.499		
	Total	61.962	104			

Table 23. One-way ANOVA for differences in students' overall evaluate of online interaction by demographic profiles and prior experiences

According to Table , only p-value of prior online learning experience and prior studying abroad variable is less than 0.05, thus, it can be concluded that there is significance difference in students' overall online interactions between those who has prior experiences in either online learning or studying abroad and those who had none. For more specific analysis of each category in each variable, a Tukey Simultaneous Test is performed.

Multiple Comparisons

Dependent Variable: O2

Tukey HSD

(I) online	(J) online	Mean Difference			95% Confidence Interval	
		(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
No	Blended	-.47527	.28262	.339	-1.2136	.2630
	Fully online	-.21154	.16861	.594	-.6520	.2289
	Both	-.90385*	.18471	<.001	-1.3864	-.4213
Blended mode	No	.47527	.28262	.339	-.2630	1.2136
	Fully online	.26374	.29892	.814	-.5171	1.0446
	Both	-.42857	.30828	.508	-1.2339	.3768
Fully online	No	.21154	.16861	.594	-.2289	.6520
	Blended	-.26374	.29892	.814	-1.0446	.5171
	Both	-.69231*	.20879	.007	-1.2377	-.1469
Both	No	.90385*	.18471	<.001	.4213	1.3864
	Blended	.42857	.30828	.508	-.3768	1.2339
	Fully online	.69231*	.20879	.007	.1469	1.2377

*. The mean difference is significant at the 0.05 level.

Table 24. Tukey Simultaneous Tests for Differences of Means in online learning experience (1)

According to table 24, there is a statistically significant difference in evaluation of students' overall interaction between those who had no online learning experience and those who had learned both types of online learning course.

Multiple Comparisons

Dependent Variable: O2

Tukey HSD

(I) Abroad	(J) Abroad	Mean Difference			95% Confidence Interval	
		(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
No	Summer	-.85915	.50659	.441	-2.2665	.5482
	Language	-.93058*	.20661	<.001	-1.5046	-.3566
	Exchange	-.35915	.26350	.653	-1.0912	.3729
	Fulltime	-.45915	.23864	.312	-1.1222	.2038
Summer course	No	.85915	.50659	.441	-.5482	2.2665
	Language	-.07143	.53410	1.000	-1.5552	1.4124
	Exchange	.50000	.55857	.898	-1.0518	2.0518
	Fulltime	.40000	.54728	.949	-1.1205	1.9205
	No	.93058*	.20661	<.001	.3566	1.5046

Language learning	Summer	.07143	.53410	1.000	-1.4124	1.5552
	Exchange	.57143	.31314	.365	-.2985	1.4414
	Fulltime	.47143	.29254	.494	-.3413	1.2841
Exchange 01 semester	No	.35915	.26350	.653	-.3729	1.0912
	Summer	-.50000	.55857	.898	-2.0518	1.0518
	Language	-.57143	.31314	.365	-1.4414	.2985
Fulltime degree	Fulltime	-.10000	.33514	.998	-1.0311	.8311
	No	.45915	.23864	.312	-.2038	1.1222
	Summer	-.40000	.54728	.949	-1.9205	1.1205
	Language	-.47143	.29254	.494	-1.2841	.3413
	Exchange	.10000	.33514	.998	-.8311	1.0311

*. The mean difference is significant at the 0.05 level.

Table 25. Tukey Simultaneous Tests for Differences of Means in studying abroad experience (1)

Regarding table 25, there is a statistically significant difference in evaluation of students' overall interaction between those who had never travelled abroad for study purposes and those who had went abroad for language learning.

Chi-Square Tests

		Value	df	Asymptotic Significance (2-sided)
Overall online interaction * Age	Pearson Chi-Square	9.263 ^a	6	.159
	Likelihood Ratio	10.877	6	.092
	Linear-by-Linear Association	.470	1	.493
	N of Valid Cases	105		
a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is .15.				
Overall online interaction * Gender	Pearson Chi-Square	25.398 ^a	3	<.001
	Likelihood Ratio	26.677	3	<.001
	Linear-by-Linear Association	7.769	1	.005
	N of Valid Cases	105		
a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is .80.				
Overall online interaction * Study level	Pearson Chi-Square	4.253 ^a	3	.235
	Likelihood Ratio	4.651	3	.199
	Linear-by-Linear Association	.967	1	.325
	N of Valid Cases	105		

	a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is .67.			
Overall online interaction *	Pearson Chi-Square	36.349 ^a	9	<.001
	Likelihood Ratio	37.627	9	<.001
	Linear-by-Linear Association	15.578	1	<.001
	N of Valid Cases	105		
Online learning experience	a. 9 cells (56.3%) have expected count less than 5. The minimum expected count is .13.			
Overall online interaction *	Pearson Chi-Square	31.468 ^a	12	.002
	Likelihood Ratio	33.075	12	<.001
	Linear-by-Linear Association	9.918	1	.002
	N of Valid Cases	105		
Study abroad experience	a. 14 cells (80%) have expected count less than 5. The minimum expected count is .4			
Overall online interaction *	Pearson Chi-Square	36.688 ^a	12	<.001
	Likelihood Ratio	20.858	12	.053
	Linear-by-Linear Association	1.137	1	.286
	N of Valid Cases	101		
Working experience	a. 13 cells (65.0%) have expected count less than 5. The minimum expected count is .14.			

Table 26. Chi-square test between Overall online interactions and Demographic characteristics and Prior experiences

Looking for values of Asymptotic Significance (2-sided) are less than 0.05, it can be temporarily expected that there are relationships between the evaluation of online interactions and following variables, including Gender, prior online learning experience, prior studying abroad, and prior working experience. Next, a correlation test will be performed for those variables.

		Correlation			
		Gender	Online learning	Studying abroad	Working experience
Overall online interaction	Pearson Correlation	.273	.387	.309	.107
	Sig. (2-tailed)	.005	<.001	.001	.289
	N	105	105	105	101

Table 27. Pearson correlation coefficient (2)

The Pearson correlation coefficient values, r , are somehow different this time. Only Sig. value (2-tailed) of Online learning experience and Studying abroad experience are less than 0.01.

Therefore, we can only count these two variables as meaningful, although the association between them and students' overall online interaction are very small. With these results from table 27, it can be assumed that hypothesis H4 and H5 can be all accepted, and all remained hypothesis from 6-11 are either rejected or discarded.

4.1.9 The relationship between different variables and students' online satisfaction

Another set of analysis is conducted additionally, this time is to examine whether there is any relationship between demographic characteristics and prior experiences and students' online satisfaction.

ANOVA						
Students' overall perspective of ERL						
		Sum of Squares	df	Mean Square	F	Sig.
Age	Between Groups	2.374	2	1.187	1.415	.248
	Within Groups	85.588	102	.839		
	Total	87.962	104			
Gender	Between Groups	7.557	1	7.557	9.681	.002
	Within Groups	80.405	103	.781		
	Total	87.962	104			
Study Level	Between Groups	.119	1	.119	.140	.709
	Within Groups	87.843	103	.853		
	Total	87.962	104			
Online learning experience	Between Groups	20.016	3	6.672	9.918	<.001
	Within Groups	67.946	101	.673		
	Total	87.962	104			
Working experience	Between Groups	4.917	4	1.229	1.440	.227
	Within Groups	81.954	96	.854		
	Total	86.871	100			
Study abroad experience	Between Groups	20.910	4	5.228	7.796	<.001
	Within Groups	67.051	100	.671		
	Total	87.962	104			

Table 28. One-way ANOVA for differences in students' overall satisfaction of ERL experience by demographic profiles and prior experiences

It can be seen that only p-value of “prior online learning experience” and “prior study abroad” variables are less than 0.05, thus, it can be concluded that there is significance difference in students’ overall satisfaction level between male and female students, and between those who has prior experiences in either online learning or studying abroad. For more specific analysis of each category in each variable, a Tukey Simultaneous Test is performed.

Multiple Comparisons

Dependent Variable: Student’s overall perspective

Tukey HSD

(I) online	(J) online	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
		(I-J)			Lower Bound	Upper Bound
No	Blended	-.81868	.33021	.069	-1.6813	.0439
	Fully online	-.19231	.19701	.763	-.7070	.3223
	Both	-1.11154*	.21581	<.001	-1.6753	-.5478
Blended mode	No	.81868	.33021	.069	-.0439	1.6813
	Fully online	.62637	.34925	.282	-.2860	1.5387
	Both	-.29286	.36020	.848	-1.2338	.6481
Fully online	No	.19231	.19701	.763	-.3223	.7070
	Blended	-.62637	.34925	.282	-1.5387	.2860
	Both	-.91923*	.24395	.002	-1.5565	-.2820
Both	No	1.11154*	.21581	<.001	.5478	1.6753
	Blended	.29286	.36020	.848	-.6481	1.2338
	Fully online	.91923*	.24395	.002	.2820	1.5565

*. The mean difference is significant at the 0.05 level.

Table 29. Tukey Simultaneous Tests for Differences of Means in online learning experience (2)

After reviewing the p-value of each pair, it can be seen from the table below that there is a statistically significant difference in satisfactory level of students between those who had no online learning experience and those who had learned either fully online or both types of online learning course.

Multiple Comparisons

Dependent Variable: O1

Tukey HSD

(I) Abroad	(J) Abroad	Mean Difference		Sig.	95% Confidence Interval	
		(I-J)	Std. Error		Lower Bound	Upper Bound
No	Summer	-1.92958*	.58711	.012	-3.5607	-.2985
	Language	-1.00101*	.23945	<.001	-1.6662	-.3358
	Exchange	-.55458	.30538	.370	-1.4030	.2938
	Fulltime	-.72958	.27658	.071	-1.4980	.0388
Summer course	No	1.92958*	.58711	.012	.2985	3.5607
	Language	.92857	.61899	.565	-.7911	2.6482
	Exchange	1.37500	.64736	.218	-.4235	3.1735
	Fulltime	1.20000	.63428	.328	-.5621	2.9621
Language learning	No	1.00101*	.23945	<.001	.3358	1.6662
	Summer	-.92857	.61899	.565	-2.6482	.7911
	Exchange	.44643	.36292	.734	-.5618	1.4547
	Fulltime	.27143	.33904	.930	-.6705	1.2133
Exchange 01 semester	No	.55458	.30538	.370	-.2938	1.4030
	Summer	-1.37500	.64736	.218	-3.1735	.4235
	Language	-.44643	.36292	.734	-1.4547	.5618
	Fulltime	-.17500	.38841	.991	-1.2541	.9041
Fulltime degree	No	.72958	.27658	.071	-.0388	1.4980
	Summer	-1.20000	.63428	.328	-2.9621	.5621
	Language	-.27143	.33904	.930	-1.2133	.6705
	Exchange	.17500	.38841	.991	-.9041	1.2541

*. The mean difference is significant at the 0.05 level.

Table 30. Tukey Simultaneous Tests for Differences of Means in study abroad experience (2)

Regarding the experience of studying abroad, there is a statistically significant difference in the satisfactory level of students between those who had no experience and those who had travelled abroad either as for language learning or summer course. (Table 30)

Chi-Square Tests

		Value	df	Asymptotic Significance (2-sided)
Students' satisfaction * Age	Pearson Chi-Square	9.555 ^a	8	.298
	Likelihood Ratio	11.168	8	.192
	Linear-by-Linear Association	1.236	1	.266
	N of Valid Cases	105		
	a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is .08.			
Students' satisfaction * Gender	Pearson Chi-Square	30.663 ^a	4	<.001
	Likelihood Ratio	34.033	4	<.001
	Linear-by-Linear Association	8.935	1	.003
	N of Valid Cases	105		
	a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is .40.			
Students' satisfaction * Study level	Pearson Chi-Square	2.188 ^a	4	.701
	Likelihood Ratio	2.556	4	.635
	Linear-by-Linear Association	.141	1	.708
	N of Valid Cases	105		
	a. 3 cells (30.0%) have expected count less than 5. The minimum expected count is .33.			
Students' satisfaction * Online learning experience	Pearson Chi-Square	53.996 ^a	12	<.001
	Likelihood Ratio	57.165	12	<.001
	Linear-by-Linear Association	15.380	1	<.001
	N of Valid Cases	105		
	a. 13 cells (65.0%) have expected count less than 5. The minimum expected count is .07.			
Students' satisfaction * Study abroad experience	Pearson Chi-Square	46.223 ^a	16	<.001
	Likelihood Ratio	41.070	16	<.001
	Linear-by-Linear Association	13.165	1	<.001
	N of Valid Cases	105		
	a. 20 cells (80.0%) have expected count less than 5. The minimum expected count is .02.			
Students' satisfaction * Working experience	Pearson Chi-Square	24.344 ^a	16	.082
	Likelihood Ratio	24.270	16	.084
	Linear-by-Linear Association	2.237	1	.135
	N of Valid Cases	101		

a. 18 cells (72.0%) have expected count less than 5. The minimum expected count is .07.

Table 31. Chi-square test between Students' satisfaction and Demographic characteristics and Prior experiences

Looking for values of Asymptotic Significance (2-sided) are less than 0.05, it can be temporarily expected that there are relationships between the student's online learning satisfaction and following variables, including Gender, prior online learning experience, and prior studying abroad. Next, a correlation test will be performed for those variables.

		Correlation		
		Gender	Online learning experience	Studying abroad
Students' satisfaction	Pearson Correlation	.293	.385	.356
	Sig. (2-tailed)	.002	<.001	<.001
	N	105	105	105

Table 32. . Pearson correlation coefficient (3)

Not surprisingly, all three variables show a positive relationship with students' satisfaction level, however, as the r values are all less than 0.5, it can be concluded that those between them are quite weak.

4.2 Qualitative data

4.2.1 The student background.

Upon agreement during the completion of the survey from phase 1, respondents who choose to participate in a subsequent interview will be asked to give their contact information (email or social media account) in the consent question included in the online surveys. Among the 113 collected responses, a mere 11 respondents willingly offered to partake in the subsequent interview. Four participants were randomly chosen from this group to gather data in phase 2. All interviews were performed in Vietnamese, as requested by the participants, to ensure smoother and more fluid communication. The information presented in Table 33 provides a summary of the respondents' background, as derived from their responses submitted during Phase 1.

	Pseudonym			
	Amy (F)	Beth (F)	Cindy (F)	Dan (M)
Study level	Bachelor	Bachelor	Master	Master
Online learning experience	Yes – both fully online and blended	No	Yes – both fully online and blended	No
Working experience	6 months to less than 1 year	1 year to less than 2 years	More than 5 years	2 years to less than 5 years
Study abroad experience	No	Yes – fulltime degree	Yes – fulltime degree	No

Table 33. Interview participants' demographic

The data analysis in this study began by transcribing the audio-recorded interviews into written transcripts and then translating them into English. The interviewees themselves provided translations for key ideas and specific terminologies with nuanced meanings, as requested by the interviewer, so order to prevent any misinterpretation of their beliefs. The analysis will integrate the participants' responses obtained from an online survey.

4.2.2 Students' perspective about the initial expectation of ERL before enrolling

The initial part of interview focused on examining the participants' initial expectations of ERL when they made the decision to accept offers from colleges. Beth was the only one who believed that online learning would not differ much from on-site learning. The other three, including those who had previous experience with online learning, accepted the offer with the expectation that ERL would only be temporary. The responses had a notable similarity, as they all expressed a good disposition towards engaging in distant learning from Vietnam. More precisely, they have either had prior experience with online learning or have received positive feedback about it. As a result, they all anticipated a positive experience for their ERL programme.

According to Amy:

Enrolling in online short courses has gained considerable popularity for a long time due to their convenience and appealing pricing. However, prior to the pandemic, I hesitated to try some courses. My former head teacher of Year 12 is a biology teacher, and she tends to use a lot of technology to support for her teaching, like video, virtual lab, online assessment, Skype group video call... so I have already imagined what

online learning would be. Before official enrolment, I held the belief that participating in ERL in 2020 would allow me to acquire and absorb knowledge seamlessly, maintaining the essential connection between learners and instructors.

Cindy also expressed her positive views about studying via ERL, stating that she had an abundance of learning experience. She believes that the success of online learning is solely on the learner.

I have taken many short online courses on Coursera and EdX and also participated in workshops, so online learning is not unfamiliar to me. When I received an offer from the university and an email stating that classes for the first semester would be online, I was even glad because it saves living expenses for half a year. Honestly, if the university did not require online learning at that time, I would have requested it. If not accepted, I was ready to decline the offer and apply again next year. Anyway, online learning is something I'm familiar with, and whether it succeeds or not depends mostly on the students' self-learning abilities, so I welcome online learning.

Different from Amy and Cindy, who had experience with online learning before, both Dan and Beth accepted to study ERL mostly due to the information from their current university on Open Day.

Beth: I don't think much about online learning, but I've tried using the Blackboard system at my foundation programme to download materials and view my grades. So, when I learned that online learning from my university would be similar, with online interactions like group video calls and pre-recorded lectures, I was okay with it. Anyway, I consider it temporary, and I can continue studying in Vietnam, avoiding areas with outbreaks, which is great.

Dan: The Open Day provided a lot of information about temporary ERL learning for the fall semester of 2020. My university itself has a strong focus on online education, so I reassure myself that learning online remotely won't be too difficult, especially since there are many international students, and class schedules are reasonably arranged for everyone to study during business hours.

For Amy and Cindy, the interviewer asked them an additional question about their prior online learning experience and whether it affected their expectations for ERL in autumn 2020. They both agreed that it had an impact on their expectations and their decisions later.

Amy: My prior experience was truly ERL. During the COVID-19 in Vietnam, I had to study via ERL for my last semester. It was not much, as the last semester of Year 12 High School was mostly for practice Demo Exam. I also once had some experience of study blended mode with online assessment and group chat, in the enrichment class with my Math and Biology teacher. Basically, since the outbreak, I have determined that I will have to participate in ERL for the academic year 2020-2021, regardless of where I study. In terms of impact, there are both positive and negative aspects, but overall, I personally feel that I can still acquire knowledge in this kind of teaching method.

Cindy: My prior experience was not ERL, as you explained the term for me before. However, at that time, I saw it no different between ERL in autumn 2020 and my prior experience with Coursera and EdX. They are both fully online, both have to work with international lecturers and classmate, both have to do the assessment online. I even expected the ERL better as it would be synchronous course rather than asynchronous like Coursera or EdX. And I agreed that I am welcoming ERL because I experienced a similar way before and acquire a good result.

4.2.3 Students' perspective in their learning space during ERL

When looking at participants' perspectives on their learning space during ERL, it was noteworthy that "personal room in the house" and "Work Café/Co-working space" were the most popular choices, with 3 out of 4 choosing at least one of them as their learning place. Only Amy and Cindy went to an Internet Café/Game Center to study, and surprisingly, Cindy was also the only one who went to the library for her learning.

According to the interview, all three individuals who stayed in their personal rooms—Amy, Beth, and Cindy—agreed that while studying in their own rooms was convenient and had a proper

setting for their learning, they were easily distracted by other things or interrupted by housework. Specifically

Amy: My private room offers privacy, but I was easily disturbed by my family as they keep calling me for doing household chores, so I don't prioritize it much.

Beth: Honestly, studying at home is convenient, but sometimes I get easily distracted, especially by Facebook or Zalo messages. I think there isn't much difference between the chairs and lighting in my room and the Co-working space. However, as I mentioned, the main thing is the focused atmosphere for work and study. In my private room, besides the study desk, there is also a bed, making it tempting to take a nap during study breaks (laughs).

Cindy: Studying at home might have better chairs and lighting compared to the café, but it's prone to interruptions. I live with my family, and since classes were not during Vietnamese working hours due to the difference of time zone, they often interrupt me for household chores.

Co-working space was chosen as the most favorite place for learning based on Amy, Beth, and Dan's perspectives. It refers to shared workspaces where individuals, freelancers, startups, and small businesses can rent a desk, office, or meeting space. Co-working spaces offer flexible seating options and provide access to shared facilities such as meeting rooms, kitchen areas, and lounge spaces. All of them reported many benefits, as it provided all the facilities required for studying, and the conditions were much better than a normal internet café and a personal room. Namely, Amy pointed out that the co-working space was quieter than a normal café, Beth emphasized the importance of the surrounding atmosphere that helps her focus on her studying, and Dan focused on the spacious seating and the booking service that kept his seat on time whenever he came.

Amy: I like going to a co-working space the most because it provides essential facilities such as tables and chairs for studying and working, sufficient light, good Wi-Fi, and power outlets. They also have basic office services like printing and projectors. Some even provided kitchen areas, automatic selling machine, and coffee kiosk. The nature of co-working spaces, designed for individuals from various

backgrounds, makes it an ideal environment for both studying and working. Importantly, people there are conscious of respecting the shared atmosphere, ensuring a quiet environment for everyone.

Beth: From August 2020 to February 2021, although there were social distancing measures in Vietnam, my area was not under lockdown. Most of the time, I studied in my private room, just like during normal times. Classes in Vietnam were around 3-4 pm, so during that time, I often went to a co-working place for better concentration. There is one building near my home offer these services, and my family subscribes to their monthly service for our own company employees, so I can go there without additional costs. When studying alongside those people in co-working space, the high level of concentration in the surrounding atmosphere also influences me, helping me stay more focused and making me less inclined to use Facebook during study sessions.

Dan: In the fall semester of 2020, the pandemic in Vietnam was not out of control, and social distancing was not strict. I could still go to a co-working space for most of my study sessions. While most cafés in Vietnam have Wi-Fi, a co-working space is more convenient for studying purposes. It provides all the necessary facilities for you to spend yourself there all day, and the cost for a session is not expensive if you subscribe to a long-term package. That place is originally designed to serve freelancers, so the study space is much better than regular cafés, and you won't be squeezed for seats. The most important thing is it has a booking service, so I don't worry about losing my spot since I can book according to my class schedule.

For the Internet café, while Amy did visit there to study once, she didn't rate that place highly due to a lack of office services like printing or projectors. This was completely different from Cindy, who favored the working-friendly Internet café. According to her, not everyone could afford the fee for co-working space, and she also enjoyed the atmosphere and décor of a normal internet café because she just needed to wear headphones to prevent surrounding noise.

It might sound surprising, but my favorite place is a café. Most cafés in Vietnam now have internet, and larger shop or chain cafés have higher bandwidths than at home, reducing the risk of disconnection. Large cafés usually provide individual seating and power outlets, making them a preferred choice for many students compared to their rooms. The prices of drinks in these cafés are not too high for my current budget. What makes me prioritize cafés is the independence and lack of disturbance. With headphones on and a set schedule, I can guarantee a fixed time for online classes and homework. I prefer Phuc Long and Coffee House, where various drinks are reasonably priced, and the seating is suitable for studying and working.

During the interview, the library was mentioned, and none of the four respondents considered it as a study place. Amy, Beth, and Dan outright said that the public library was definitely not their choice for study, as the office services in Vietnamese public libraries were not good. Dan also emphasized that he only went to his previous university's library to borrow books and brought them back home for study when he was still in his Bachelor's program. Cindy elaborated more on her choice of study place as the library, but she also didn't see it in good review.

I have tried going to the city library, but the network is quite weak, and the process of getting a library card is quite cumbersome, so I don't prefer it much. Additionally, the public library in the city is sometimes chaotic and noisy. The seating for group study is old, with many desks designed for students to write with an inclined surface, which is not convenient for laptop user at all. Moreover, the room is designed in an old style, lacking electrical outlets and internet cables. Considering the suitability for laptop users, it is not as good as cafes with internet, not to mention workspace cafes. Library of international universities are much better, but they are located very far from the city centre.

Overall, co-working spaces were seen as an ideal place to study online, although it seemed the price would not be quite friendly to some students. It was also noteworthy that all four participants were residing in big cities in Vietnam, namely Hanoi and Ho Chi Minh City. Co-working space, while it has become a rising trend, still rarely appears in smaller cities or faraway provinces. Libraries were deemed unsuitable for studying online due to the low speed of the

internet, the non-friendly design of learning spaces, and those responses somehow helped to explain why only 14.3% of participants chose it as a learning place. The Internet café seemed to also be a favorite place to study. Another key point was that the three participants who chose to study in their own room were all female, and they didn't prefer it because they would be interrupted by house chores. It would be better if this study could gather more respondents in the interview about this matter.

4.2.4 Students' perspective in their learning device and Internet access

According to the interview, all respondents agreed that the laptop was the most convenient device for studying online. The key benefits of using a laptop included its ease of searching for information, easy use with all necessary software (especially Microsoft Office), and much easier portability compared to a personal computer. The screen size was easier to read compared to a smartphone and tablet. Amy was the only one who stated that a smartphone was more convenient for her, but she still preferred a laptop due to its size and more advanced functions. Cindy used her smartphone to check mail and store her recorded lessons for on-the-way listening, while Beth and Dan rejected the idea of using a smartphone for learning. As for tablet users (Beth, Cindy, and Dan), they all used a tablet just for quick information searches.

Amy: A smartphone is convenient and compact, making it easy for me to participate in ERL from anywhere. However, I prefer using a laptop because it offers more features and easy access to research materials. The wider screen helps me feel more comfortable, especially when my vision is not really good.

Beth: Of course, a laptop is still the best. The tablet's only advantage is its smaller size, but with many new lightweight laptops nowadays, I really don't need my tablet anymore. Tablets, if not IOS, then Android, are inconvenient for doing assignments on Microsoft software. Besides, my tablet is only a 7-inch type, with the only advantage being better visibility than a phone. I've never thought of using a smartphone for studying.

Cindy: A laptop is, of course, the most convenient. My tablet is from Apple, so it's fine for browsing the internet. However, working directly through Microsoft software is

quite inconvenient, so I often use both the laptop and tablet to access multiple websites simultaneously to avoid freezing. I usually use my smartphone to check emails and notifications. Additionally, I often use the smartphone to download lecture videos and listen to them anytime during the day.

Dan: Due to my major, I have to practice a lot on the computer. A laptop is the best tool for studying because I can easily search for information when working in groups during class, which is more challenging with a smartphone. In my opinion, for learning and working purposes, laptops and desktop computers should be used, smartphones are only convenient for entertainment, and tablets should only be used when quick search is needed.

Regarding internet access, except for Dan, who didn't study in his own room, all the other girls—Amy, Beth, and Cindy—used “home internet service,” and they all used the “small company package” rather than the normal “basic home package,” either as a later upgrade or originally bought. Dan also emphasized that the co-working spaces he visited for study also upgraded their package to a higher level for better speed, all due to the rising trend of “work from home.” Additionally, Amy and Cindy also bought a 3G/4G package and used it for mobile broadband.

Amy: My home internet is quite ok, however I mostly use 3G package for Mobile Broadband as the price is very affordable for students and the data usage is very high.

Beth: Fortunately, the places I study all have very good internet connections. Regarding Co-working space, it goes without saying. Since both my parents run a company at home, the internet at home is also a package for businesses, so the transmission speed and stability are very high.

Cindy: During the pandemic, my family upgraded the network system at home, so the network is quite stable. However, with many walls at home, when the room is closed, the 5G network space is almost inaccessible in the enclosed room. Sometimes I have

to temporarily use the hotspot from the phone's 4G. This is also why I prefer going to a cafe because the network there is stable, and the download capacity is better.

Dan: The pandemic is a time when the trend of working from home is on the rise, so all places that provide Wi-Fi services for studying and working have mostly strengthened the quality of Wi-Fi connections. The cost has increased, but for me, it still remains at an acceptable level for good Wi-Fi quality. This is also why I don't study at home because the family internet packages will not meet the demand for running the applications I am using.

4.2.5 Students' perspective in their online interaction during ERL

Amy, Beth and Cindy all rated their online interaction with their lecturers as “positive”.

Amy: I find interacting with teachers during ERL quite convenient, even outside of class hours. Of course, there are challenges, such as the time-consuming process of receiving feedback on test results, but I can accept that drawback.

Beth: The teachers are very enthusiastic about teaching and supporting international students. The school has arranged numerous online seminars to prepare for online learning. We even have scheduled one-on-one online meetings with the head of the department and the program coordinator to express our aspirations for future development.

Cindy: On the interaction with teachers, everything is quite good. If there was something I need to state as problem, it would be the limitation use of discussion board, but I saw it quite acceptable as we had discussion group on social media already.

As for Dan, he was very dissatisfied with his interaction with lecturers. He reported that he rarely has exchanges with his lecturers during class and hardly reached them due to the time zone difference. On the other hand, he was satisfied that the feedback from lecturers was really detailed and helpful to his learning process.

The program's content is quite theoretical in the first semester, so I really didn't have the opportunity to talk much with the professors. The lectures also focus a lot on looking at slides and listening to the professor, making it very easy to get sleepy because it was around noon to afternoon in Vietnam. Due to the time difference, contacting professors outside of class hours is quite difficult. Not to mention that their working hours are quite short, so you have to time sending emails if you want them to reply soon. The only positive point is that all the teachers provide detailed feedback on homework and exams, explaining and analyzing where your answers did not meet the requirements, which is completely different from Vietnam.

As for the interaction with their peers, the perspectives of participants were quite varied. Both the bachelor students view their interaction with their classmates in a positive way, and Beth only stated one problem while working as group online, but she and her classmates had resolved that problem on their own. It would be also the reason why she evaluate this type of interaction as very positive.

Me and my classmates were getting close very fast and the interaction between us was good. However, there are still some aspects that are not entirely satisfactory, such as the difficulty of group work outside of class hours due to different time zones. I'm a bit disappointed that some students from the United States and Brazil had to drop out midway because the time zone didn't suit them, making it difficult for them to attend classes in the long run. Usually, we take advantage of the time right after class to work on group assignments because that's when everyone is still online together because if we postpone it and schedule a later meeting, it's challenging to gather everyone.

Contrastingly, both master students saw it negatively. The same problem with Beth in group working for home assignments also occurred with both Cindy and Dan, and it was viewed as worse. Overall, Cindy expected more from the ERL as it was synchronous study and not asynchronous like other Coursera or Edx courses she learned before. However, she reported that everyone didn't have enough time to exchange during class. Furthermore, she felt lonely and was being abandoned by her own classmates as she belonged to the minority of the class. Her replies were very emotional, as follows:

My class also has only two people from Asia, me and another student, while the rest are in different time zones. The worst part is around the middle of the semester. In January, when the pandemic began to ease in the study country, students from Europe had time to attend class, even though they still had to fly back and forth easier than those in Asia. The class is also small, about 10 students, so it's not restricted much by the ban on gatherings. So, on some days of online classes, when the class opened the panoramic camera, seeing everyone sitting together, and I was completely separated, I felt a bit uncomfortable, like being left out. Not to mention that in December, I had to fly over to catch the new semester in January, but I had to transit, and at that time the transit station from Vietnam to the destination country had only one route through Turkey and that place is currently a hotspot for the pandemic. Europe said the pandemic has decreased, but that state was still very dangerous. Europe have had over ten million infections and more than half a million deaths, while Vietnam has less than a thousand infections and fewer than 50 deaths in the end of 2020. Honestly, I was scared, so I asked to stay in Vietnam for another semester. Indeed, until February of the following year, the pandemic in Europe flared up again, and my study country had to close its borders until July. I had studied online for 2 consecutive semesters, while those who had travelled were stuck in Europe, but as long as there was an opportunity, they could go to class together, while I stayed in Vietnam, and my only Asian classmate drop out in the second semester. So, the feeling of loneliness and being overlooked increased. Contacting outside of class is also difficult because of the time difference. Doing group assignments in class is okay, but doing group assignments at home is already a problem, especially when there's a friend who assigns me to do part A and they will meet separately to do part B later. I know they don't mean any harm, and everyone is just trying to make it more convenient for everyone, but it's really uncomfortable. So, my interactions with classmates are not very positive. Only when I went to meet them in person did it get better, but I always felt like I missed an important period because people had already known each other before I joined.

Similarly, Dan expressed his frustration with online interaction with classmates. Although not as emotionally charged as Cindy, he plainly reported that there was no discussion between peers

except the limited time assigned during class by lecturers. In his words, group home assignments were meaningless as everyone just divided the content and completed it individually.

Interaction with classmates is indeed bad, almost no interaction except for when the teacher divides discussion groups on Zoom. If we are assigned group assignments, the most difficult part is that people cannot find a common schedule to discuss outside of class hours. The only communication channel is through email, and so there is no discussion at all. Many assignments are done individually, and then people take advantage of going to the Zoom 1-2 hours before class to synthesize everyone's opinions.

Next, let's discuss the perspective on using "learning materials online." This time, except for Amy, all other participants highly rated this type of interaction, with both Master's students evaluating it as "very positive." According to Amy, all interactions with the Learning Management System (LMS) or using learning materials online were very similar to Vietnam, and the key difference that led to the success of online learning solely lay in the human factor. As for the other three, all agreed that the use of online materials provided was sufficient for them.

4.2.6 Students' perspective about the overall experience with ERL and the opportunities to pursue online learning in future.

Regarding the overall experience with ERL during the COVID-19 pandemic, Amy, despite seeing interactions with her lecturers and classmates as positive and expressing her gratitude for having a new experience with ERL, still rated her overall experience as "neutral." While feeling satisfied with the ERL experience, both Beth and Cindy expressed some regrets, which were not much related to online interaction but more inclined towards the limitations of online learning.

Specifically, Beth felt that she lost many chances for on-campus practice that she yearned for.

Additionally, I regret that there are many topics I can't learn directly because my field of study is quite specialized. In my first year, most of the courses were theoretical basics of the field, emphasizing subjects like Mathematics, Physics, Chemistry, and Biology. I visited my current school before applying to their Bachelor program, and

they have very well-equipped labs. However, I have to study pure theory and miss the opportunity for hands-on practice in the lab as I had hoped.

As for Cindy, despite rating her experience as enjoyable, she voiced her concern not for herself but for other participants. Her information became quite crucial, as she admitted that her prior experience in online learning could provide her with an advantage in catching the new type of learning method that other Vietnamese students may not have. According to Cindy, it seemed the university where she studied did not provide sufficient instruction for using all kinds of learning systems:

I feel that studying with the Canvas system is not too difficult because I have experienced other systems, in general, the basic functions will be quite similar. However, the school really does not provide much on how to use the online learning system for me. Before pursuing a Master degree, I studied abroad for a Bachelor degree, and I can say that the way of introducing and guiding students to use academic-related systems at the two schools is completely different. I also feel that my current university does not provide enough necessary access. For example, they provide a list of literature for students, but not every item is accessible, and students have to find it themselves, or they do not provide plagiarism checking software and students have to take care of themselves. Other statistical software is available, but they don't mention it, and when I asked, they only provided the link and told me to download it myself.

Cindy also admitted that she might be biased as it was hard to compare between the two different universities in this matter, and it might also be due to the different expectations that universities have for different levels of study.

Maybe they expected us to be pro-active and try to do on our own as I am now on Master level, but I am afraid not every student has the same experience as me. For example, if a minority ethnic student from Vietnam won a scholarship to study in Europe, they will probably be stuck. Therefore, in the long run, if universities want to expand online learning methods, I think they should still have at least one seminar session guiding students on how to use the university's systems. It could be a non-mandatory seminar, at least to help those who are "first timer" to catch up with the Western way of working.

Dan was the only one who saw his learning journey via ERL as unenjoyable, and it was mostly due to his poor experience in interacting with his lecturers and classmates.

In general, the impression of this remote learning semester is really poor because of the lack of interaction with professors and classmates. Ultimately, the purpose of choosing to study abroad is not only to gain knowledge but also to exchange cultures, and this way, there is no cultural exchange at all.

As for the opportunities to pursue online learning in the future, while having a bad experience with his ERL, Dan still opened up to an opportunity for the Hybrid mode, which might be due to his positive view of the use of LMS and learning materials online, as he did state that "the university provides enough materials and instructions on how to use the online learning system." Amy also agreed to a chance to study in Hybrid mode, but she precisely stated that it would be only for online assessment and support of online learning materials. As for Beth and Cindy, they had no preference about the learning mode in their future and were open to all kinds, including physical on-campus, hybrid, and fully online. Beth only stated her concerns about the approval of online degrees in Vietnam in the current time and near future.

I don't have much opinion about learning online or offline in the future. Of course, I still prefer offline learning because my field of study will require more practical aspects. However, currently, I am leaning more towards management, so I think studying offline in a lab may not be too compulsory. Moreover, I knew that Vietnam still does not fully accept degrees obtained entirely online. The COVID situation is an exception, so if I still want my degree to be recognized in Vietnam, I still have to study on campus with a student visa. If the laws change in the future, and online learning becomes more financially beneficial for me, I think I will continue to pursue higher education in a fully online format.

V. Discussion and Conclusion

The following will summarize and give further discussion of the main findings, plus the conclusion of this thesis. Then, it will address the limitations of this study.

5.1 Summary of finding

This study utilised thirty-one research questions in online questionnaires to direct the statistical analyses. Quantitative data was analysed using a One-way ANOVA with Tukey Post hoc test after doing a standard frequency analysis of all items. Afterwards, the Chi-Square test was utilised to determine which pair of variables may be associated with each other prior to completing a Pearson correlation to evaluate all provided hypotheses in the research models. The statistical analysis employed a significance threshold of 0.05. The results of this study indicate that various types of online interactions, whether they are specific or overall, have a modest to large beneficial influence on students' happiness with online platforms.

The correlation coefficient value of 0.8 between Student-Instructor interaction and Students' satisfaction has further supported the reviews in Section 2.2.1 of the literature. This study discovered that Student-Student interaction is also crucial in online learning, as supported by both quantitative data and qualitative analysis. The correlation coefficient value attained a magnitude of 0.7, and all participants in the interviews conveyed their assessment of this form of engagement with great emotional intensity. Concerning the interaction between students and content, the Pearson statistics indicated a reasonably significant positive correlation with students' happiness. However, the qualitative data presented contrasting evidence. Despite receiving overwhelmingly good feedback from participants, the total rating for online interaction and satisfaction with online learning was quite low, primarily due to negative evaluations of other forms of contact. Hence, the discovery made by Strachota (2003) in section 2.2.3 may not correspond with the findings of this investigation.

Based on the comprehensive analysis of inferential tests, it can be determined that characteristics such as Age, Study level, and Working experience do not exhibit any statistically significant correlation with students' overall happiness in ERL or any forms of online interaction. 'Working experience' appears to be a viable factor for future research involving bigger populations, as indicated by the Chi-Square test (2), which demonstrated a significant association with the

overall rate of online contact. Nevertheless, as stated in Section 4.1, numerous cell values exhibit fewer than 05 repetitions, hence diminishing the reliability of the Chi-Square test. Regarding 'Gender', 'Prior online learning experiences', and 'prior experiences of travelling abroad for study', there are indeed positive associations with students' satisfaction. However, only the two types of prior experiences showed the correlation with the evaluation of overall online interaction. However, it is important to note that the correlation values for these variables are relatively low, all being less than 0.5, with some even falling below 0.3. This discovery further bolsters the literature discussed in Section 2.4 and Section 2.5.2. Regrettably, Section 2.3 lacks substantial input as a result of the flaw in the design of the questionnaire, which will be discussed in section 5.2.

The frequency analysis of students' comments yielded further insights into the viewpoints of Vietnamese students regarding their experience with ERL during the COVID-19 epidemic. In general, the participants in this experiment had a neutral to favourable experience with ERL. Additionally, some participants expressed highly good opinions about various learning activities. Nevertheless, the author also encountered several challenges that were described as ranging from negative to neutral. Significantly, over 60% of students expressed a neutral opinion of the opportunity to communicate with their lecturers outside of class time, while 13.3% of students regarded this as a "negative" aspect. Approximately 23% of students reported insufficient time for interacting with the professor during the session, while 20% indicated that they were unable to utilise the Discussion board due to their lecturers' non-usage of it. Lack of time for socialising outside of class was also identified as a significant factor in students' interactions with their peers. A substantial majority of students (65.7%) reported facing moderate to numerous challenges in connecting with their peers beyond the designated instructional periods. In addition, 32.4% of students still indicated a preference for in-person communication with their instructor and classmates, whereas 20-25% of students voiced dissatisfaction with the guidance provided by the school. Furthermore, a substantial percentage of students (40-55%) had adverse feelings while engaging in online learning. The emotions experienced encompassed sensations of lack of concentration, lack of drive, and a sense of isolation. These students held the belief that they lacked the ability to effectively utilise the knowledge they acquired in practical situations.

The utilisation of quantitative data facilitated the examination of participants' perspectives in a comprehensive manner. Upon analysing the comments, the significance of online engagement among students, instructors, and classmates is once again underscored. It is very astonishing to

note that public libraries are not considered conducive for online studying in Vietnam. The inclusion of participants who utilise laptops and study in co-working spaces and cafes provides additional insights into this group of characteristics. It is desirable that future researchers develop improved study instruments to further investigate the influence of physical learning environments on online learning.

Finally, the author would like to answer the three main research questions mentioned in Part I: Introduction

- Firstly, Vietnamese students' online interactions did have a great positive impact to their satisfaction during their study in ERL.
- Secondly, "prior online learning experience" and "prior experience of studying abroad" have a moderate positive impact on Vietnamese students' online interactions.
- Thirdly, "gender", "prior online learning experience" and "prior experience of studying abroad" have a moderate positive impact on Vietnamese students' online satisfaction.

5.2 Limitation of the study

Regrettably, this study, like other projects, was subject to many constraints. The initial constraint concerns the structure and format of the questions. All the individuals that withdrew were Ph.D. students, whose opinions would have had great significance for this study. Amidst the Quantitative Phase, only a single individual cited the primary reason for their withdrawal from the project, which was the significant risk of data leaking. It is still unclear if the remaining Ph.D. students feel the same, but it somehow explained a lot about the mass withdrawal of participants and also violated the Ethical Guidelines of the Study. Therefore, the author decided to reject all the responses from Ph.D. students in the later part of the project, and fortunately, none of the later participants appeared to be Ph.D. students.

With the participant's permission, his reply is included as follows:

I was a little careless at first, but then I found out how I could be easily identified with the demographic information I provided to your survey. You might not have been

aware before; each year there would be hundreds of Vietnamese students admitted to Bachelor or Master programs in ONE European country, but there might be ONLY ONE Ph.D. student from Vietnam. The Ph.D. program is not a mass education program. In your survey, you asked about our gender, our age range, and then our major. This information meant a lot to identify us as Ph.D. students admitted in autumn 2020 in a particular country. If you still want to collect our Ph.D. data, it would be better to change the classification of your data.

Furthermore, the data's high dependability was a fortunate circumstance. Nevertheless, it would have been preferable to run pilot research prior to finalising the questionnaire. Conducting a pilot study could have offered valuable insights into the problems that emerged with certain questions and potentially detected these difficulties earlier using highly informative data from Ph.D. students. In addition, due to the absence of a pilot study, the author failed to identify the issue with the questionnaire design for the factors related to Physical learning space. Due to the fact that those variables were intended for multiple replies, they were unsuitable for Inferential analysis. Consequently, the author had to exclude three planned hypotheses in Research model 02.

The project encountered numerous disruptions as a result of the author's health issues and the challenges in recruiting a minimum of 100 participants. Consequently, the collection of replies was not possible, so diminishing the study's trustworthiness. In addition, the Qualitative Phase had a restricted number of participants. Although 11 individuals initially indicated their desire to participate in the upcoming interview, the author was unable to successfully communicate with several of them, resulting in only 7 accessible participants. Out of the 7 participants, only 4 were selected for contact based on Phase 2 sampling, which meets the initial criteria. It would have been preferable if this research had involved a minimum of 8 students in order to delve deeper into the range of perspectives from participants.

5.3 Conclusion

To summarise, our study has discovered some fundamental aspects of Vietnamese students' overall satisfaction level through ERL during the COVID-19 pandemic. The online interactions of all students have a beneficial influence on the overall happiness of students with their online learning. Of the three forms of online contacts, the engagement with the instructor and classmates

is particularly significant and has a significant impact on students' overall outlook. The positive experience of utilising online learning resources has been found to enhance students' satisfaction based on quantitative data. However, qualitative data suggests that the impact of these resources is little or nonexistent. Demographic features, such as gender, and prior experience in studying both online and overseas, are other elements that have a favourable influence on students' satisfaction and interaction.

Given the rapid evolution and deployment of educational technology, it is crucial for education policy makers to comprehend the advantages and disadvantages of online education. It is crucial to thoroughly comprehend the expenses and benefits associated with online learning in public university systems before proceeding further. This study highlights the significance of including human connection into the design, development, and implementation of online learning experiences in order to improve students' satisfaction and overall experience with their online classes.

VI. References

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VII. Appendix

Appendix A – Facebook post in English

Hello everyone, I'm doing a scientific research project and a master's thesis with the topic "The perspective of Vietnamese tertiary students in Europe toward Emergency Remote Learning during the COVID-19 pandemic". The topic is probably a bit outdated, but I really hope to receive your help.

My project will follow the Sequential Mixed-method, including two parts QUAN - QUAL. Part one will be an online survey of 10-20 minutes. Part 2 will be a one-on-one online interview via Zoom/Facebook/Skype/Zalo... (with recording) depending on the participant's request. Everyone is not required to participate in both and only 2-4 people will be randomly contacted to participate in the 2nd interview.

The participants must be Vietnamese student who were admitted as a full-time student at a higher education institute located in Europe in the autumn of 2020 and choose to study distancing from Vietnam via online learning for at least one semester.

Survey in Vietnamese: <https://nettskjema.no/a/301448>

Survey in English: <https://nettskjema.no/a/284179>

If you all know someone with suitable conditions, I hope you all can help me share this survey.

Thank you very much for helping!

Appendix B – Facebook post in Vietnamese

Xin chào mọi người, mình là sinh viên đang theo học Master tại Đại học Oslo, Na Uy. Hiện tại mình đang thực hiện một đề tài nghiên cứu khoa học kiêm luận văn thạc sĩ với đề tài "Quan điểm của sinh viên Việt Nam đang theo học tại Châu Âu về hình thức 'Học từ xa khẩn cấp - Emergency remote learning' giữa đại dịch COVID-19". Đề tài có lẽ hơi lỗi thời, nhưng mình rất mong nhận được sự giúp đỡ của cả nhà ạ.

Dự án của mình gồm hai phần. Ở phần một sẽ là khảo sát online tầm 10-20 phút. Phần 2 sẽ là phỏng vấn 1-1 online qua Zoom/Facebook/Skype/Zalo... (có recording) tùy theo yêu cầu của người tham gia. Mọi người không bắt buộc tham gia cả 2 và cũng sẽ chỉ có 2-4 người được liên hệ ngẫu nhiên để tham gia phỏng vấn đợt 2 thôi ạ. Sau khi transcribe phần trả lời thì recording sẽ được xóa hoàn toàn.

Đối tượng khảo sát là sinh viên mang quốc tịch Việt Nam theo học chương trình toàn thời gian ở một cơ sở giáo dục Châu Âu. Đặc biệt là nhập học từ mùa thu năm 2020 và trong thời gian xảy ra COVID-19 thì cư ngụ tại Việt Nam mà không bay sang châu Âu trong ít nhất 1 học kỳ.

Khảo sát bằng Tiếng Việt: <https://nettskjema.no/a/301448>

Khảo sát bằng Tiếng Anh: <https://nettskjema.no/a/284179>

Nếu mọi người có quen biết ai có điều kiện phù hợp thì mình cũng mong cả nhà giúp mình chia sẻ bảng khảo sát này.

Linh xin chân thành cảm ơn!

Appendix C – Semi-constructed interview

1. What did you expect about remote learning when you accept the ERL study offer in Autumn 2020?
2. To what extent did your prior online learning affect your expectations? (Applies if answer Yes in Q13) Please specify whether your prior online learning is ERL or not.
3. Could you describe your usual learning space during ERL? (including the place, table setup, lightning setup, ...)
4. How would you evaluate the usability of your learning device?
5. How would you evaluate the Internet access at your learning space?
6. In the online survey, you rated your interaction with Lecturers/ Classmate/ LMS and online learning materials as “?”. Could you please explain why? (Questions may be tailored based on the answer of participants)
7. Will you considered to pursue fully online learning degree in future?

Appendix D – Consent form

This is an inquiry about participation in a research project as the thesis for the degree of Master of Philosophy in Higher Education. Here we will give you information about the purpose of the project and what your participation will involve.

Purpose of the project

Emergency Remote Learning (ERL) is an alternative learning approach that is completely online via the internet to provide temporary access to education in response to a crisis (e.g., pandemic or war) and is expected to revert to the normal mode once the emergency situation is over.

In a sample of Vietnamese students of European HEIs staying in Vietnam during the COVID-19 pandemic, this project aims to explore the relationship between online interactions, academic- and work-related prior experiences, and students' online learning satisfaction during the COVID-19 pandemic in the distancing social context.

Why are you being asked to participate?

You are being invited to participate in this project because you are Vietnamese students who were admitted as a full-time student at a higher education institute located in Europe in the autumn of 2020 and choose to study distancing from Vietnam via online learning for at least one semester.

What does participation involve for you?

If you chose to take part in the project, you may join in up to two phases of the project:

In the first phase, you will fill in an online survey that takes approx. 30 minutes. The survey includes questions about your background information (age, gender, level of education, field of study, country to study in the EU, residential area in Vietnam) and your opinion about the experience of studying via emergency remote learning.

After the online survey, you may be asked to join in the online semi-structured interview, if you agree to take part in the follow-up interview. In this part, your voice will be recorded for data transcription and analysis later. The purpose is to understand further about your emergency remote learning experience.

Participation is voluntary

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

Your personal privacy – how we will store and use your personal data

We will only use your personal data for the purposes specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

What will happen to your personal data at the end of the research project?

The data, with no personal identifiers, collected from this project will be maintained on a password-protected computer database in a restricted access area of the university. As well, the data will be electronically archived after the completion of the study and maintained for five years. All information will be destroyed after that.

Your rights

So long as you can be identified in the collected data, you have the right to:

access the personal data that is being processed about you

request that your personal data be deleted
request that incorrect personal data about you be corrected/rectified
receive a copy of your personal data (data portability), and
send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority
regarding the processing of your personal data

What gives us the right to process your personal data?

We will process your personal data based on your consent.
Based on an agreement with the University of Oslo, Data Protection Services has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Where can I find out more?

If you have questions about the project or want to exercise your rights, contact:

Supervisor: Professor Peter Maassen - peter.maassen@iped.uio.no – (47) 22844122
Master student: Ms. Linh, Tran – ntltran@student.uv.uio.no – (47) 90820956
Data Protection Officer - University of Oslo: personvernombud@uio.no
Data Protection Services, by email: (personvertjenester@sikt.no) or by telephone: +47 53 21 15 00.

CONSENT FORM

I have received and understood information about the project and have been given the opportunity to ask questions.

I give consent that I agree:

to participate in the online survey
to participate in the follow-up interview

After the online survey, you may be asked to join in the online semi-structured interview. May I ask for your e-mail address?

This element is only shown when the option 'to participate in the follow-up interview' is selected in the question 'I give consent that I agree.'

Appendix D – Questionnaires

Part I: Introduction

1. What is your age?

- 18 – 24 years old
- 25 – 34 years old
- 35 – 44 years old
- Over 44 years old

2. What gender do you identify as?

- Male
- Female

Prefer not to say

3. What is your current study level?

Bachelor

Master

PhD

Other, please specify:

4. What is your major field of study?

Humanities and Arts

Educational sciences and Teacher education

Social and Behavioural sciences

Law

Business and Administration studies

Natural sciences

Health sciences, Welfare and Sport

Engineering sciences

Agricultural and Veterinary sciences

Information and Communication Technology

Other, please specify:

5. In which European country are you studying?

6. As mentioned before, **Emergency Remote Learning (ERL)** is a temporary shift to an online delivery modality for education due to crisis circumstances. During the COVID-19 pandemic in 2020, knowing that you may have to study ERL, what were the main reasons you decided to accept the offer from your European host university? (Please mark all that apply)

I enjoy studying online.

I assumed that online learning would be not that different from on-site learning.

I thought that I just needed to study online for a short period.

I could receive a tuition discount from the university if I agreed to accept my offer.

- I would lose my scholarship if I cancelled/postponed my study.
- I would lose my deposit if I cancelled/postponed my study.
- I would lose my study offer if I cancelled/postponed my study.
- Other, please specify:

7. Why did you choose to stay in Vietnam to study ERL rather than travelling abroad? (Please mark all that apply)

- I was uncertain about the pandemic situation in Europe.
- I could save on my living expenses if I stayed in Vietnam.
- I did not have enough time to apply for a visa.
- I was not sure how long the pandemic would last.
- Other, please specify:

8. Which city/ province in Vietnam did you reside during studying ERL?

Learning management system (LMS) is an online integrated software for educational institutions for creating a learning platform in online learning with functions including creating, delivering, tracking learning programs and interacting with students.

9. Which type of the Learning Management System was your university using in Autumn 2020?

- Blackboard
- Canvas
- Moodle
- Other, please specify:
- I don't know

10. Which type of learning activities have you experienced during ERL? (Please mark all that apply)

- Live videoconference with lecturer and class (via e.g. Zoom, Google Meet, Skype...)
- Recorded lectures
- Guided self-learning with support materials (book, audio, video, etc...)
- Online assessments

- Individual 1-1 online meetings
- Game-based learning activities
- Virtual laboratory learnings
- Other, please specify:

11. What kinds of online assessment have you experienced during ERL? (Mark all that apply)

- Online Quiz
- Home assignment (file submission)
- Oral assessment (including presentation) via video conferencing call (such as Zoom, Google Meet, Skype...)
- Live written test (have time countdown in secured windows)
- Others, please specify:

Part II: Students' prior experiences and physical learning environment

12. Have you ever studied abroad before enrolling in your current study programme?

No.

Yes:

- Fulltime degree
- Exchange for at least 01 semester
- Language learning
- Summer course

13. How many years of working experience do you have? (Including part-time work, volunteering and internship)

- No working experiences
- under 6 months
- 6 months to less than 1 year
- 1 year to less than 2 years
- 2 years to less than 5 years
- 5 years or more

14. Before the COVID-19 pandemic started, have you ever studied fulltime online or in a blended mode? (This applies to all kind of online learning, including full-time programme, part-time programme, short courses, language courses, MOOC, ERL)

- Yes, fully online
- Yes, blended mode
- Yes, both fully online and blended mode
- No → Continue with Q16

15. Have you ever completed an online programme/course?

- Yes
- No

16. Do you have access to a personal technological device for studying ERL?

- Yes, I have my own device
- No, I had to borrow a device from my family/friends/relatives...
- No, I had to use computer services from libraries/internet café.

17. Which devices did you use for studying ERL? (Please mark all that apply)

- Smartphone
- Tablet
- Laptop
- Personal Computer (PC)
- Other, please specify:

18. Which place did you go for studying ERL? (Please mark all that apply)

- My own room in the house where I am living
- Other rooms in the house where I am living
- Internet café / Game center
- Work café / Co-working space
- Library
- Other, please specify: ...

19. Do you have access to a private quiet place to study ERL?

Yes

No

20. What kind of internet access did you use for ERL? (Please mark all that apply)

Home internet service

Mobile broadband

Wi-Fi service at café/ libraries

Other, please specify: ...

Part III: Student's online interaction

21. To what extent do you agree with each of the following statements about your interactions with all your lecturers (Likert-scale: Strongly disagree – Disagree – Neutral – Agree – Strongly Agree)

- I had numerous interactions with the lecturers during the course
- I asked the lecturers my questions through different electronic means, such as email, discussion board, instant messaging tools, etc.
- There was no time for me to communicate with my lecturers during the class.
- It was easy for me to contact my lecturers outside of the class time with digital communication channel.
- The lecturers always replied to my questions in a timely fashion.
- The lecturers regularly posted questions for students to discuss on the discussion board.
- I answered all the questions during class and on the discussion board.
- I received feedback for every assignment.
- The lecturers' feedbacks on my assignment are helpful for my learning progress.
- It took a long time to get feedback from my lecturers.

22. To what extent do you agree with each of the following statements about your interactions with all your peers (Likert-scale: Strongly disagree – Disagree – Neutral – Agree – Strongly Agree)

- I had numerous interactions related to the course content with fellow students.

- I communicated with my classmates about the course content through various electronic means, such as email, discussion boards, instant messaging tools, etc.
- My classmates communicated with me through various electronic means, such as email, discussion boards, instant messaging tools, etc.
- I rarely interacted with my classmates during the course.
- I shared my thoughts or ideas about the lectures and its applications with other students during the course.
- My classmates were willing to share their ideas with me about the lectures during the course.
- My classmates replied to my questions on the discussion board.
- I commented on other students' thoughts and ideas on the discussion board.
- It was easy for me to contact my classmates outside of the class time.
- I found it difficult to collaborate with my classmate while working on online group assignment.

23. How many hours per week did you accessed and used online learning resources?

..... hour per week

24. To what extent do you agree with each of the following statement about your interactions with the online learning materials (Likert-scale: Strongly disagree – Disagree – Neutral – Agree – Strongly Agree)

- I was provided a variety of online resources (i.e., video, animation, interactive media, simulations, virtual manipulatives, etc.) related to my course.
- It was easy for me to use the LMS and online library system.
- I found it difficult to access the online learning materials.
- I had trouble finding the right digital resources to use for my learning.
- I was not comfortable with the download duration of learning resources.
- The learning materials related to the live lectures (i.e., lecture slides, recorded lessons or video lectures) were well-designed and stimulated my interest for the class content.

- The digital reading materials (i.e., textbook, report, article) helped me to understand class content better.
- The homework assignments helped me to assess my understanding of the topic.
- The process of taking online assessment went smoothly.
- I often have technical problems when I try to use digital resources (i.e., system error or internet connection)

Part IV: Student's satisfaction

25. How enjoyable were your ERL classes during the pandemic?

- Very unenjoyable
- Unenjoyable
- Neutral
- Enjoyable
- Very enjoyable

26. To what extent do you agree with each of the following statements about your overall ERL experience? (Likert-scale: Strongly disagree – Disagree – Neutral – Agree – Strongly Agree)

- The guidance of using technology for ERL from my university were detailed and helpful
- I received adequate student support service (i.e., course registering, access to online materials, grade appeal, IT support, financial counselling, tutoring and mentoring, etc.) from my university during ERL
- I preferred to interact with others via online communication channel.
- The response time from my lecturers, classmates and university support was quicker via online communication than in onsite setting
- It was difficult to stay focused and keep up during the online session
- I felt unmotivated and isolated while attending ERL.
- I was not able to apply what I learned during ERL.
- There were more opportunities for me to develop my IT skills during ERL.
- I felt comfortable with the amount of workload while attending ERL.
- I enjoyed participating in ERL as much as I enjoyed traditional onsite learning.

27. How would you rate your experience of all online interaction during ERL?

- Very negative
- Negative
- Neutral
- Positive
- Very positive

28. How would you rate your overall experience of online interactions with all your lecturers?

- Very negative
- Negative
- Neutral
- Positive
- Very positive

29. How would you rate your overall experience of online interactions with your classmates?

- Very negative
- Negative
- Neutral
- Positive
- Very positive

30. How would you rate your overall experiences in using online learning materials?

- Very negative
- Negative
- Neutral
- Positive
- Very positive

31. Would you prefer to continue your studies fully online, in a hybrid mode (mixing online and physical onsite education settings) or fully in a traditional, physical mode?

- Fully online
- Hybrid mode
- Physical onsite mode
- No preference

Appendix E – Copy of NSD Notification Form

NSD Notification Form

Reference number

435216

Which personal data will be processed?

- Voice on audio recordings
- Background information that, when combined, can be used to identify an individual

Describe the background information

Age Gender Level of education Field of study Country to study in Europe Residential area in Vietnam

Project information

Title

The perspective of Vietnamese tertiary students in Europe toward Emergency Remote Learning during the COVID-19 pandemic

Summary

In a sample of Vietnamese students of European HEIs staying in Vietnam during the COVID-19 pandemic, this project aims to explore the relationship between online interaction and students' satisfaction in emergency remote learning during the COVID-19 pandemic in the distancing social context. The second objective is to investigate whether background variables, prior experiences and the physical learning environment may have effects on students' online interactions and students' online satisfaction.

Provide a justification for the need to process the personal data

The project is sequential mixed-method research. In the first part Quantitative, background information (age, gender, level of education, field of study, country to study in the EU, residential area in Vietnam) are independent variables that need to be examined to find out the correlations with the dependent variables (students' online interaction, students' online satisfaction) After the first part, randomly selected participants will be asked to join the Qualitative part - the online semi-structured interview. In this part, the voice of participants will be recorded for the data transcription and analysis later. The purpose is to understand further students' opinions about their learning experience. Besides, the email address will be asked only if the participant agrees to join in the follow-up interview.

External funding

Ikke utfyllt

Type of project

Master's

Contact information, student

Ngoc Thuy Linh Tran, ntltran@student.uv.uio.no, tlf: 90820956

Data controller**Institution responsible for the project**

Universitetet i Oslo / Det utdanningsvitenskapelige fakultet / Institutt for pedagogikk

Project leader

Professor Petrus Albertus Maria Maassen, peter.maassen@iped.uio.no, tlf: +4722844122

Do multiple institutions share responsibility (joint data controllers)?

No

Sample 1

Describe the sample

Vietnamese fulltime students: - admitted at a university located in Europe (including the UK) in the autumn of 2020 - stay in Vietnam during the time studying emergency remote learning for at least 01 semester

Describe how you will identify or contact the sample

Sample 1 will join in the Quantitative part and the data will be collected in the form of a survey by distributing online via various Facebook groups of Vietnamese students in European countries. In this way, the participants are already satisfying the criteria of being Vietnamese citizens and accepted as full-time students in European Universities. To increase the response rate, the surveys will also be distributed to the other networks of scholarship hunting, and job hunting for graduates and alumni in Europe with the aim to reach students in other countries.

Age group

18 - 65

Which personal data will be processed for sample {{i}}? 1

- Background information that, when combined, can be used to identify an individual

How is the data relating to sample 1 collected?

Online survey

Attachment

Online questionnaires.docx

Legal basis for processing general personal data

Consent (General Data Protection Regulation art. 6 nr. 1 a)

Information for sample 1

Does the sample receive information about the processing of personal data?

Yes

How does the sample receive information about the processing?

Written (on paper or electronically)

Information letter

Project information letter.doc

Sample 2

Describe the sample

Sample 2 will be selected from the Sample 1 and agree to participate in the follow-up interview

Describe how you will identify or contact the sample

Participants in sample 2 will be recruited from Sample 1 based on their consent for the follow-up interview and their background characteristics (level of education and prior online learning experience) in their previous QUAN questionnaires. There will be at least 04 students (02 undergraduate & 02 graduate) will be chosen.

Age group

18 - 65

Which personal data will be processed for sample {{i}}? 2

- Voice on audio recordings

How is the data relating to sample 2 collected?

Personal interview

Attachment

Online interview.docx

Legal basis for processing general personal data

Consent (General Data Protection Regulation art. 6 nr. 1 a)

Information for sample 2

Does the sample receive information about the processing of personal data?

Yes

How does the sample receive information about the processing?

Written (on paper or electronically)

Information letter

Project information letter.doc

Third persons

Does the project collect information about third parties?

No

Documentation

How will consent be documented?

- Electronically (email, e-form, digital signature)

How can consent be withdrawn?

There will be contacts (email and phone number) in the information letter and consent form. If participants want to withdraw consent, they may reach the data processors directly via the given contact. The e-mail will be stored as proof of withdrawal.

How can data subjects get access to their personal data or have their personal data corrected or deleted?

There will be contacts (email and phone number) in the information letter and consent form. If participants want to correct their personal data, they may reach the data processors directly via the given contact to exercise their rights under the GDPR (rights of access, rectification, erasure, portability, etc.).

Total number of data subjects in the project

100-999

Approvals

Will any of the following approvals or permits be obtained?

Ikke utfyllt

Security measures

Will the personal data be stored separately from other data?

No

Provide a reason for why the personal data should not be stored separately

There will be no directly identifiable data collected. As for indirectly identifiable data, they will be stored together with the rest of the data for statistical processed.

Which technical and practical measures will be used to secure the personal data?

- Continuous anonymisation
- Encrypted storage
- Record of changes
- Access log
- Restricted access

Where will the personal data be processed

- Data processor
- Private services

Guidelines/approval for processing personal data on private devices

How to store yellow data on your private computer - University of Oslo.pdf

Who has access to the personal data?

- Project leader
- Student (student project)
- Data processor

Which data processor will be processing/have access to the collected personal data?

Only the project leader (Supervisor professor), data processor (University of Oslo), and the student have access to the collected personal data. As for data collection, UiO Nettskjema will be used as form provider for online survey (with UiO-based Google form will be developed as back-up form, if participants cannot access Nettskjema) while UiO

Teams, UiO Zoom and UiO Meet will be used for online interview platform (with call recording and no face shown up) depends on the participants preference.

Are personal data transferred to a third country?

No

Closure

Project period

01.09.2022 - 31.03.2023

What happens to the data at the end of the project?

Personal data will be anonymised (deleting or rewriting identifiable data)

Which anonymisation measures will be taken?

- Any sound or video recordings will be deleted
- Personally identifiable information will be removed, re-written or categorized

Will the data subjects be identifiable in publications?

No