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SAMAR S. AAD

THE IMPACT OF ONLINE TEACHING AND LEARNING

ON FACULTY AND STUDENTS AT HIGHER EDUCATION INSTITUTIONS AFTER COVID-19 PANDEMIC



The impact of online teaching and learning on faculty and students at Higher Education Institutions after the COVID-19 pandemic

Samar Aad

This thesis investigates the satisfaction of staff and students with online teaching and learning during the single delivery of online courses, as well as the consequences of relevant lessons, based on the Covid-19 experience. Inductive and deductive methodologies have guided this work. With the deductive technique, I employed quantitative data in addition to the literature review to assess the hypotheses behind this study, while with the inductive approach, I conducted interviews from which themes emerged.

In this thesis, I investigate the faculty's involvement in online teaching and learning during the Covid-19 epidemic, the effect of institutional support on faculty satisfaction, and the effect of online teaching and learning flexibility, communication, and participation on student satisfaction. I add to the continuing conversation on OTL by investigating how faculty members handled and adapted to the crisis during the Covid-19 outbreak, using the theories of crisis management, change management, and satisfaction theory as the framework for my inquiry. My results indicate that the pandemic expedited the adoption of online teaching and learning in Higher Education Institutions, however the post-pandemic future remains uncertain. The conversations emphasise how the pandemic may be utilised as a learning experience and how institutions will need to tailor this experience to enable online teaching and learning continuation after the epidemic. The research will provide HEI executives, practitioners, and policymakers with knowledge about the consequences of digital transformation in education.

**Unlocked during lockdown: The impact of online teaching
and learning on faculty and students' satisfaction at Higher
Education Institutions after COVID-19 pandemic**

Samar S.Aad

A Thesis Presented in Fulfillment of the Requirement for the Degree of Doctorate in Business
Administration

Durham University Business School United Kingdom

2022

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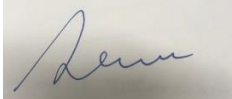
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List of Abbreviations

AACSB	<i>Association to Advance Collegiate Schools of Business</i>
AI	<i>Artificial Intelligence</i>
ANOVA	<i>Analysis of Variance</i>
CIS	<i>Computer Information System</i>
DUBS	<i>Durham University Business School (UK)</i>
EDI	<i>Electronic Data Interchange</i>
EMEA	<i>Europe, Middle East, and Africa</i>
EMEA	<i>Europe, Middle East and Africa</i>
HEI	<i>Higher Education Institutions</i>
HSD TEST	<i>Honesty Significant Difference Test</i>
ICT	<i>Information, communication and technology</i>
IT	<i>Information Technology</i>
LMS	<i>Learning Management System</i>
OFSS	<i>Online Faculty Satisfaction Survey</i>
OTL	<i>Online Teaching and Learning</i>
PLATO	<i>Programmed Logic for Automatic Teaching Operations</i>
QS	<i>Quacquarelli Symonds</i>
SLOAN-C	<i>Sloan Consortium</i>
SPSS	<i>Statistical Package for the Social Sciences</i>
TPACK	<i>Technology, Pedagogy, and Content Knowledge</i>
T-TEST	<i>Hypothesis Test Static</i>
UNESCO	<i>United Nations Educational, Scientific and Cultural Organization</i>
VPS	<i>Vice Presidents</i>
W.H.O	<i>World Health Organization</i>

DECLARATION

I certify that this thesis has not been previously submitted to meet requirements for any other higher education institution. I certify that this is my fully own effort and work. To the best of my knowledge and belief, the use of all materials from other sources has been properly and fully cited and mentioned.

Signature:  _____ Date: 25/07/2019 _____

STATEMENT OF COPYRIGHT

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author's prior written consent and information derived from it should be acknowledged.

ACKNOWLEDGMENTS

When I first embarked in this journey, I was told that the most challenging part is to be able to communicate with your supervisors. I assumed they are usually too busy with their own research, teaching and providing students services. That was a false assumption. The fact is that the most enjoyable part of my thesis was the regular meetings I had with my supervisory team.

I am grateful to my primary supervisor Dr. Mariann Hardey who made sure that I stayed on track despite all the challenges I have faced. Academically, her wisdom and guidance gave me the necessary knowledge to pursue and elaborate on the ideas I had in mind. Her instantaneous feedback and regular communication reminded me never to fall off track. On a personal level, I am forever indebted to her support and to the initiatives she took to help me during very challenging times. I am grateful for her patience to stick with me from the beginning of the process till the end. Dr. Hardey is not only an advocate of women studies, equality, diversity, and inclusion, she is a genuine person who radiates positivity and enthusiasm. Another person that helped me throughout this journey is my second supervisor, Dr. Barbara Bechter. With her sweetness and calmness, Barbara was always able to refine my thoughts and to make my research process challenging and enjoyable. With her statistical expertise she helped me making sense of all the numbers and guided me on using appropriate quantitative research techniques. I owe her a special debt of gratitude for being such a wonderful and supportive supervisor.

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DEDICATIONS

In loving memory of my *dad*

Chapter 1: Introduction to the study

“The beautiful thing about learning is nobody can take it away from you.” (My dad)

1.1 Introduction: Two years like no other- The pandemic and more...

Prologue

This research marks the culminating efforts of four years of extremely assiduous hard work done during the most challenging times. I have accepted all the obstacles I have faced since I decided to enroll in the DBA program in December 2018. It was a very bumpy roller coaster journey filled with emotions, joy, and tears. Before embarking in any project, a wise person would plan. This is exactly what I have done before deciding to do my DBA. I made a clear detailed plan. I created a nice excel spreadsheets with all the details of when, where, and how much it will cost, and all the deadlines I had to meet. According to my plan the total cost of my DBA would be 40,000 pounds including my trips and hotel stays for my taught courses. I live in Lebanon and get paid in Lebanese Lira. At the time when I started the program this amount would have been around 55,000 USD which was equivalent to 82 million and 500 hundred Lebanese Lira. This was manageable for me as my salary was worth 6 million Lebanese Liras per month and I had enough savings in the bank. I kicked off my journey with excitement.

I was moving smoothly as per the DBA schedule successfully completing one course after the other, visiting Durham and meeting my classmates and professors. All was going according to the plan until October 2019. This is when all my life turned upside down: Economic crisis, political issues, and Covid-19 pandemic. This study aims to examine the lessons learnt from the

OTL experience during Covid-19 as well as the factors that contributed to faculty and student satisfaction to comprehend what makes for a successful online learning and teaching experience. My primary research question is intended to frame my discussion: What influence will online teaching and learning have on faculty and students' satisfaction at higher education institutions during and moving out of the COVID-19 pandemic?

The current available research does not provide conclusive answers to these questions:

1. The extent to which Covid-19 impacted Faculty and Students satisfaction with OTL and saved or added risks to the Academic Year
2. The extent to which OTL will impact Faculty and Students satisfaction in HEI in the future and whether HEI hierarchies will cause resistance to change in embracing the new model of teaching and learning
3. The impact OTL will have on Faculty and Students satisfaction in HEI

This research supports the following objectives:

- a) Evaluate the satisfaction of Faculty and Students with online teaching and learning
- b) Investigate the factors that contribute to faculty satisfaction during online teaching and learning.
- c) Analyse the factors that contribute to the students' satisfaction during online teaching and learning.

This study will be an exploratory move towards developing an adaptive model to support faculty and students' integration of online teaching and learning in HEIs.

The period of 2019-2021

The 2019-2020 year witnessed so many challenges locally and internationally: Economic downturn, depreciation of the Lebanese Lira, Covid-19 implications, and setbacks. All these devastating events were compounded by the August 4th, 2020, explosion at the Port of Beirut followed by the death of my dearest dad.

The threat of economic and financial collapse represented real challenges and threw my plan out the window. The loss of my dad has affected me emotionally as it was not expected but it also gave me the will and power to move on.

Lebanon witnessed a period of uprisings beginning October 17, 2019 that led to extended road closures which hindered me emotionally as I thought some changes will take place and we will have a better future. It was too good to be true. While the popular manifestations have subsided, the troubles have not. For example, the unprecedented shutdown in the banking sector for extended periods and the unofficial capital controls imposed on deposits and transfers. I was no longer able to pay my tuition fees. The depreciation of the Lebanese currency, around 80%, Lebanon defaulting on its sovereign foreign currency debt, the resignation of two governments, and the devastating Beirut Port explosion on August 4, 2020, put all my planning out of the window. The impact of these calamities has been heightened by the global economic and social implications associated with Covid-19. There was no way to isolate myself from all of these challenges as they were affecting me and my family financially and emotionally.

While the world shares the burden and the implications of the Covid-19 pandemic, the circumstances facing Lebanon differ from the rest of the world due to the unprecedented general decline in living standards as a result of the steep and continued depreciation of the currency. The Lebanese economy is a highly dollarized economy that thrives on services and

relies on imports for consumer goods and resources needed for production. After the October 17 uprising, capital control on withdrawals of US and other foreign currency removed liquidity from the market and resulted in the inevitable depreciation of the local currency. With multiple exchange rates in the market, it was very difficult to survive. I no longer had access to my savings, my salary has lost 85% of its value, my tuition fees of 55,000 USD which according to my plan were equivalent to 82 million and 500 thousand at the previous official rate of 1,507 LBP/US\$ in 2018 are now equivalent to more than one hundred millions based on the black market rate of around 20,000 LBP/US\$; While we were busy trying to sustain during the unprecedented economic crisis and to protect ourselves from the uncertainties of the pandemic another personal incident shook our lives. I lost my dad in an accident on November 15, 2020. I cannot even describe my feelings on that day, knowing that he will not be around when I will be celebrating my achievements is devastating especially that he had always encouraged me to pursue further studies and accomplishments. I had to grieve but I also had to move on. This was not easy with the situation in Lebanon which has kept on deteriorating. Lebanon grappled with fuel shortages failing to import fuel because of the shortage in U.S. currency reserves, failing to control its borders and stop smugglers, failing to provide milk for babies, medications, electricity, and basic needs... life in Lebanon has become rough, that's when my family and I decided that it was time to think of relocating.

Amidst all of that, I had to work on my research, meet deadlines, and try to finish as soon as possible before reaching a more disastrous scenario whereby it will no longer be possible to sustain internet connection and thus, we will totally be isolated from the whole world.

I thought of sharing this background information about all the challenges and the difficult times that have accompanied me during my research journey.

What my grandmother used to tell me

Story telling with my grandmother was the best time of my childhood. It was a time when I connected with her and built great memories that stayed with me until today. An interesting story she used to repeat over and over again is how she got educated under the Oak tree. It always resonates in my mind:

“Once upon a time there lived a small girl called Julia. She lived in a tiny village far from the city with her mom, dad, and her eldest brother. Julia loved to read and spent her time gardening. She was always eager to grab knowledge and learn something new every day. In Julia’s village there was no school. Her mom taught her how to read and Julia used that to get some knowledge from reading books that were offered to her by some friends and family living in the city. Until one day, a nice lady who was a teacher moved to the village and decided to help all the kids learn how to read and write. There was a big oak tree in the village and that nice lady decided that this will be the School. Under this oak tree, Julia and other kids from the village learnt how to read, write, and do math. It was windy at times, too hot at other times but the big oak tree branches always protected the students, and the sound of the leaves was music to their ears. The moral of the story is that if Julia was able to get educated under the oak tree, you should never quit learning in the comfort of your school”. Only if my grandma knew that one day all the lessons will be moved from under the oak tree to behind a flat screen.

Distance learning has taken different shapes and has evolved throughout the ages. Back in the nineteenth century, teaching and learning used to be done through correspondence, it then moved to be delivered using television in the twentieth century, and has evolved through using the web at later stages. Despite all the evolution throughout the years and growth, online learning was largely resisted by institutions and governments due to infrastructure development issues and the largescale investment needed. Furthermore, academic excellence was also

attributed to the sense of prestige inherent in the major physical structures of the universities, a prestige that cannot be offered by online courses.

The rapid shift to online saw a massive uptake during the Covid-19 pandemic due to the need to engage in learning while under global, national, and local restrictions. An understanding of the history of distance to online learning and its massive adoption during the pandemic should be acquired before moving to my main research question: What influence will online teaching and learning have on faculty and students' satisfaction at higher education institutions during and moving out of the COVID-19 pandemic?

1.2 Distance or correspondence learning in the 19th and 20th century

Distance education started almost two centuries back. It can be tracked to the 18th century once documents were printed and circulated by correspondence to different locations via postal mail. This was a way for individuals who were unable to reach the learning institutions and participate in traditional full-time programs to get the opportunity to be educated if they were interested. The first record available for correspondence learning is administered to Caleb Philipps who placed an advertisement in the Boston Gazette in 1728 where he offered to send lessons by post to students who wanted to learn shorthand, this was followed few years later by Isaac Pitman a British School teacher who received universal acclaim for the development of shorthand correspondence courses (Bower and Hardy 2004). However, the first recognized institution to offer correspondence courses was the university of Cambridge who in 1871 offered instructions “beyond the college wall” (Harding 1944) designed to open up opportunities for students who were not able to physically commute to universities and to inform new ways of learning.

The correspondence learning expanded to schools in 1873 through the establishment of The

Society to Encourage Studies at Home also known as the “Silent University” (Bergmann 2001), founded in the United States by a group of women led by Anna Eliot Ticknor to teach women by mail (Caruth and Caruth 2013). Course materials were sent to more than seven thousand students enrolled and assignments were sent back to instructors all through the mail (Bergmann 2001). As stated by Harding (1944), In 1879 a Yale Professor William Harper taught his students by correspondence and added correspondence courses to the university of Chicago program where he assumed the role of its President in 1890. Professor Harper’s intention was to further promote education. The University of Chicago was the first American higher education institution to offer correspondence courses at a higher education level (Rovai 2003). By 1933, the university offered more than 418 correspondence courses in 31 different departments, while other universities followed in the next years and correspondence courses saw a rapid growth between 1920-1930 from 33,198 to 76,789 with an increase in student’s enrollment (Harding 1944). At the end of the nineteenth century the correspondence learning mode emerged further and spread through Europe mainly in Britain, France and Germany in addition to the United States (Holmberg 1995).

With the emergence of radio broadcasting and television in the first half of the twentieth century significant changes were made to how learning was communicated. In 1920 Pen state offered live radio courses to students (Reiser 2001) followed by the State University in 1925. Few years later and after the invention and widespread of televisions, the University of Houston started offering televised classes in 1953 (Sinclair 1982) and the University of Wisconsin offered a phone-based format courses for physicians in 1965 (Berk 1982). Despite the high cost of technology, future tutors will be in a form of a computer, universities will embrace a virtual learning environment predicted Suppes (Suppes 1966). Suppes developed several computers

led initiatives at Stanford and engaged in innovative approaches of eLearning and teaching using technology that will be embraced by universities in a virtual learning environment.

In the same period in 1960, the first computer-based training program PLATO (Programmed Logic for Automated Teaching Operations) was launched at the University of Illinois (Bitzer and Skaperdas 1968). This technological development opened the era for the use of new tools and delivery teaching and learning methods using computers and later using the internet. PLATO was a standard-based online learning product created after rigorous research, with effective pedagogy, and practical innovation that engaged students with interactive information. PLATO paved the way to the more sophisticated e-learning platforms such as Blackboard and WebCT.

Throughout the years significant changes were made to how learning was communicated, and new tools and techniques were embraced by learners. This has led to the technology boom in the 1980's which resulted in the creation of online learning (Saba 2005).

1.3 Online or e-learning in the 20th and 21st century

Throughout the years, learning was delivered using various modes. From face-to-face learning to correspondence, followed by the use of mail to send lectures and receive assignments. Then learning was done through the use of phone, radio frequencies and television. Until the progression of technology and the worldwide introduction of the internet that revolutionized the way teaching and learning was disseminated. Prior to the internet, education was based on books and lectures; students would have to go physically to their institutions and spend hours finding books from the libraries to conduct projects or research. With the introduction of the internet a wealth of information was brought to students.

The development of network communication in the late 1960 in the U.S has paved the way to the invention of emails and computer over packet-switched networks in 1971. In the 1980s, the introduction of the computers and internet in the 20th century to the wide population, created new terms such as e-learning or online learning. According to Campbell (2004) e-learning has different meanings when used in different environments: It is the use of both software and online learning in schools, and it is the use of a range of online practices in higher education and businesses.

Therefore, for the purpose of this research e-learning and online learning will be used interchangeably as a student-centered mode of teaching which uses a full range of computer based learning platforms, different delivery methods, a variety of activities and tools across all disciplines. The use of technology in the 70s met many obstacles not necessarily related to technology but mainly to the pedagogy of learning. Nicholson (2007) argues that there was a need for richer learning theories to inform the design and practice of online learning and that students learning differentiations need to be considered when developing online courses to engage them through the process. Nonetheless, these teaching and learning delivery modes allowed the exchange of knowledge to be done in what is called a virtual environment giving learners access to a wide range of information and opportunities (Wang, Derakhshan et al. 2021).

The World Wide Web was born with Tim Berners-Lee when he proposed the “web of notes with links” in 1989, his idea was successfully implemented in 1990 when he used the Internet to communicate between a server and an HTTP client (Berners-Lee 1989). This led to a new form of knowledge exchange and an expansion of the range of tools and activities used in education. There was a shift made to the way teaching was delivered and to the way learning was acquired. The developments in online learning during the years 80’s and 90’s created

debates related to challenges of this mode of teaching such as the interaction between students and instructors, interaction with the institution and interaction among the students themselves. The debates also questioned the quality of this type of education, this aligns with Nicholson (2007) work. The online environment created by the World Wide Web offered flexibility with time and place and there was now a need for new approaches to teaching and learning (Adebisi and Oyeleke 2018)

Personal computers and internet became widely used at the end of the 20th century. Technology started to diffuse into every day's life. The computers entered family houses as resources for work, entertainment or education (Habib and Cornford 2002) which has helped in the expansion and the widespread use of e-learning tools and adopting different methods of teaching and learning delivery modes. Wider access to the use of computers at homes, transformed families mindset, and developed their interest in the use of technology and digital tools (Haddon 2006). Students and faculty members in educational institutions started using their home computers and developed new skills that helped in shaping the virtual online learning and increasing e-learning opportunities. While universities in the US, Europe, Canada and New Zealand started dual mode of education (Duguet 1995), developing countries still preferred the face-to-face traditional teaching mode as they were not well resourced to embrace online teaching (Zamani, Esfijani et al. 2016). They disfavored the online delivery mode and put a lot of restrictions on its use. Further, countries like United Arab Emirates, Kuwait, Egypt, and Lebanon did not recognize online degrees prior to the Covid-19 pandemic that hit the world in 2019 and did not legislate any online programs. Those countries disfavored and even banned online programs as they believed they lacked appropriate supervision and did not yield to proper learning outcome. Furthermore, in his research Alrawabdeh (2009) adds that Arab countries faced Internet barriers and were late in adopting technology due to the below issues:

1. Arab countries did not have proper internet infrastructure,
2. Adopting technology was not a top priority project,
3. there was an absence of technological strategic partnership between the Arab countries,
4. the ministries of education lacked the attention to training and developing educators in the use of technology,
5. there was no laws and legislations
6. the culture was resistant to the adoption of technology and,
7. language was an issue since everything to do with technology was in English.

I speculate all the above hindered the acceptance of OTL in the Arab countries prior to Covid-19. During the pandemic, when all classes were suspended, those countries like all other countries worldwide, had to provide alternative ways to student learning so they resorted to the online delivery mode. While developed countries such as Australia, Germany, Italy, United Kingdom, and the U.S were able to ensure full online shift, developing countries struggled (Ramij and Sultana 2020). Educational institutions in developed countries offered synchronous and asynchronous classes. On one hand, synchronous mode is the delivery of distance education in real time whereby the learners and the instructors use different techniques and technological tools and internet bandwidth to communicate (Wang and Su 2000). Real-time education is a simulation of the face-to-face lesson whereby interaction between learners and instructors is not limited to a specific physical location and can include different engagement and fun activities (Salmon 2009). On the other hand, Asynchronous is usually another mode of teaching delivery facilitated by institutions whereby lessons do not happen in real-time but are usually recorded using different software or different

techniques. Communication between learners and instructors is facilitated by technology, they interact with one another to exchange ideas but not in real-time. Lessons, messages, and discussions are recorded in a central database in the virtual space (Hew and Cheung 2008).

1.4 Background and Rationale

By investigating the history of teaching and learning we find that different modes of delivery are scattered throughout the years reaching to the implementation of the current use of technology in education. With the advancement of technology, new knowledge and skills were developed creating new models of teaching. Technology enhanced learning spread to HEI at different speed, accepted heavily in some countries like in the US and Europe, and rejected in other countries like the Middle East and Africa.

During the pandemic and after the closure of most universities worldwide, HEI had to manage the impact of Covid-19 on the educational sector and resume its functions. The move to online delivery mode was sudden with no consultation with the involved stakeholders and no prior preparations in most cases. In this regard, one would question faculty and students' satisfaction and whether they adapted to change during this crisis. The Teaching and Learning process during the pandemic witnessed a change and had its impact on faculty and students. Governments took the decision to move online to help limiting the spread of the virus and ensure the continuation of the academic year by adopting an online delivery mode. This experience could generate lessons to learn from as it went through many challenges and contributed to a change in the teaching and learning mode in HEI.

As the quote attributed to the philosopher George Santayana states "Those who cannot remember the past are condemned to repeat it" (Santayana 1905, p. 284), we need to learn from

history otherwise we will repeat the same mistakes. There are lessons learnt from the use of online teaching and learning in HEI during the pandemic that we need to understand. Taking into account that online learning has seen a growth and will keep on growing and considering the rate at which it has been used during the pandemic, it is essential to understand what the impact of online teaching and learning on faculty and students is during Covid-19. To this end, my research will address key educational and learning changes in response to the pandemic global crisis.

1.5 Emergence and Growth of Online Learning during Covid-19 pandemic

As mentioned previously, the period 2019-2022 witnessed many challenges due to the global Covid-19 pandemic. This affected HEI teaching and learning academically and economically. Universities were challenged to sustain their operations. Universities responded to the challenges at a different pace based on their circumstances and level of preparation. The pandemic has affected universities' finances and fund-raising opportunities that most private institutions rely on.

UNESCO (2020) stated in its report that in March 2020 more than 84% of the student's population were out of their educational institutions and had to move to an online learning mode. Faculty had to move away from their comfort zone and had to face issues related to their lack of technology training or knowledge in using online teaching tools. Teaching mediated by technology is different than moving a lesson online (Mishra and Warr 2021). Many faculty members lacked the knowledge, the skills, and the attitudes to teach online especially that they were working under lots of pressure and uncertainty within their personal and professional lives.

1.6 Statement of the Problem

Online teaching and learning (OTL) is not a new concept (Duguet 1995, Campbell 2004, Nicholson 2007, Zamani, Esfijani et al. 2016, Adebisi and Oyeleke 2018). As mentioned at the beginning of this chapter, E-learning, distance learning, and correspondence courses were considered in many institutions over the past years but the migration of HEI during the crisis was unprecedented. To ensure the continuation of teaching, many universities moved towards digital services to support student learning, yet this move was accompanied with challenges that have led to mixed findings in terms of faculty/student satisfaction/dissatisfaction. In all cases, faculty and students during Covid-19 experienced a mode of teaching that will probably shape the future of online teaching and learning in higher education. The efficiency of solely delivering online courses and gaining relevant learning outcomes will need to be investigated through the Covid-19 experience. Recognizing that the online programs implemented during the pandemic were done as a resource and not as an integrated tool within a broader curriculum design aimed at guiding students through the learning process.

Following the start of the global pandemic at the end of 2019, the academic literature has seen a burst of research papers on the topic of OTL (Almazova, Krylova et al. , Bozkurt and Sharma 2020, Ferri, Grifoni et al. 2020, Sim, Sim et al. 2021). This body of recent work collectively details the sudden change of pedagogy in HEI and the first exploratory move towards the need to develop an adaptive model to support faculty and student integration of OTL in HEI (Mishra, Gupta et al. 2020, Tondeur, Howard et al. 2021). Suspension of face-to-face educational activities due to Covid-19 was required by worldwide governments and online education was obligatory. Universities had to implement online teaching whether it was part of the curriculum or not. That was a worldwide necessity. Franchi (2020) argues that online learning needs to be

introduced gradually to be accepted by students and faculty, “first impression is very important”. In his study, Franchi found out that during Covid-19, distance learning enhanced students’ effectiveness and productivity to a certain extent; since students were comfortable using technology, it was intuitive for them to use the necessary IT tools for online learning. Having said that some students, mainly international ones, have probably chosen their university based on several variables one of them could be campus life. Thus, they want to go back and experience that campus life, and they were not totally satisfied with the model used. Why is finding a new model so important? What’s the point in studying faculty/students’ satisfaction with OTL during Covid-19? What is the point in passing through such a turbulent time and surviving without acquiring lessons learned and transforming education?

Let us clarify these with an example. Imagine in a few years from now the world experiences another worldwide crisis. Maybe another pandemic. Shouldn’t we have the appropriate adaptability to sustain and keep the education sector running? The pandemic education experience represents a case that HEIs need to learn from.

In the remainder of this chapter, I will define the purpose of this study, set out the theoretical framework that will support my research, the research questions, the thesis structure, and I conclude chapter 1 with definitions.

1.7 Purpose of the Study

When I first began this research, my intention was to carry out this thesis by targeting HEIs in different parts of the world. The educational systems were disrupted worldwide in more than 200 countries and the Covid-19 pandemic has affected around 1.6 billion learners attending schools and universities (Pokhrel and Chhetri 2021). At the higher educational level, the Covid19 pandemic had an impact on more than 25,000 universities worldwide¹ in 2020¹

(UNESCO 2020). It was not realistically feasible to research all institutions because of time and financial constraints. So, it was important to use an appropriate sample of the faculty and student population which was convenient and purposive. Faculty in my research are defined as staff in the Business School who taught online during the pandemic and who might also have been involved in administrative tasks. A sample is a proportion of a population which is the subject of a specific research (Palinkas, Horwitz et al. 2015).

Initially, I have decided to choose the top twenty universities according to QS ranking. The Quacquarelli-Symonds (QS)² ranks more than 700 universities according to a specific set of criteria (Hauptman Komotar 2019):

1 <https://en.unesco.org/Covid19/educationresponse>

2 <https://www.topuniversities.com/university-rankings>

1. Academic reputation

2. Employer reputation

3. Faculty/student ratio

4. Citations per faculty

5. International faculty ratio

6. International student ratio

I have originally decided to collect the top 20 QS universities from the four different continents: Europe, Asia, Africa, and US. This original sample did not yield sufficient robust methodology for being able to collect the data I wanted. I have realized halfway through collecting my

sample universities that the only common criteria they share was being part of the QS ranking list. However, they differed in sizes, years of experience in the online delivery modes, and their status public or private, etc... When I discovered these weaknesses and the problem in my sample, I had to think of other characteristics for my population.

For the purpose of this research, I ended up using a non-probability sampling technique whereby I had a clear list of criteria that has helped me choosing my participants. A nonprobability sampling is a technique used following a process that does not give all participants or units in the population equal chances to be included in the sample (Etikan, Musa et al. 2016). Implementing a non-probability sampling helped me reduce the number of worldwide universities and collecting my data quicker. The techniques used in sampling depend on the type of research and the purpose of the study. It was easier to limit the number of universities chosen as accessing 25,000 universities would not have been feasible.

At the time of this research, I was working in one of the leading Business Schools in a private university in Lebanon. I was the Lead Accreditation and Continuous Improvement Coordinator in that Business School. One of the recent accreditation exercises I have conducted was the AACSB accreditation. Business Schools are an important sample to study since they take the lead in making a difference in society. At the time of the research, the world has been facing pandemics, economic meltdown, resource depletion, fake news, cyberattacks, mass migrations from face-to-face teaching to online teaching, among many other threats that businesspeople had to face to maintain prosperity (Bower, Leonard et al. 2020). Add to that, the local challenges that we were facing in Lebanon as discussed previously in this chapter.

Many business leaders were trying to comment or give advice on the situation. We witnessed lots of debates through webinars, online meetings, and lots of discussions done by Business

leaders. This is when I realized the importance of having Business Schools in my sample. These schools have a great responsibility to graduate future leaders who can help in solving economic crisis and in embracing innovation and entrepreneurship. Selecting a credible and appropriate research design for my thesis was crucial. It was important to choose a homogeneous sample; Therefore, I have decided that my research population would be Faculty and Students who belong to my sample of Business Schools which fall under the following criteria:

1. Accredited Business Schools by the Association to Advance Collegiate Schools of Business (AACSB)³ .
2. The School is an Academic unit of a parent larger university from which derives its degree-granting authority.

³ <https://www.aacsb.edu/>

3. The School is in one of the regions: The Americas, Asia Pacific, EMEA (Europe, Middle East and Africa).

Using my AACSB network and searching online I was able to find 169 universities that satisfied the above mentioned criteria. Choosing Business Schools was also convenient because of the close proximity of accessing such schools from my network. It was clear to me what type of schools to choose based on the criteria I listed. My sample was also purposive since I knew exactly what schools suit the purpose of my study.

As stated by Etikan, Musa et al. (2016), a convenient sample is affordable where subjects are homogenous and accessible to provide information; whereas, in a purposive sample which is also called a judgement sample, participants are carefully selected due to the qualities they possess. For the purpose of this study, faculty and students who were willing to provide

necessary information were part of the online teaching and learning experience during Covid-19 and belonged to one of the Business Schools in the list. This group of people had the knowledge and willingness to participate in my research and share their expertise.

The characteristics of the new sample mean that the universities which fall under the new criteria share common features. Therefore, this is a homogeneous convenient sample as my population is homogenous since it meets the above-mentioned criteria. My sample would also be convenient as I work in a business school so I have built a network which would help me in collecting data. As mentioned by Jager, Putnick et al. (2017), the main advantage of such a sample is to have clearer generalizability; the sampling frame is more homogenous as well, which makes the researcher more confident in generating an appropriate representative sample. The chances of having a bias in such a sampling method would be reduced.

For this research, the rapid spread of Covid-19 and its worldwide impact together with limited empirical research, meant that my research should be part of a transnational study with data collected from universities spread worldwide. The purpose of this study is to examine faculty and students' satisfaction with online teaching and learning during Covid-19 and learn from this lesson to create a framework for future successful online teaching and learning in higher education institutions.

The Pandemic Covid-19 was a pandemic that has affected universities worldwide and forced them during a crisis to make changes at a rapid speed. Therefore, it is valuable for the study to incorporate the change management, crisis management, and the job satisfaction theories which capture the dramatic shift and impact that went on within HE during this period.

1.8 Theoretical Framework

This research was founded on the basis of three theories: the change management, the crisis management, and the job satisfaction theory. Based on the fact that the research was conducted during the crisis of the pandemic affecting higher education institutions that had to make changes despite the fact they are usually rigid and resistant to change. This had an impact on Faculty and Students satisfaction with Online Teaching and Learning.

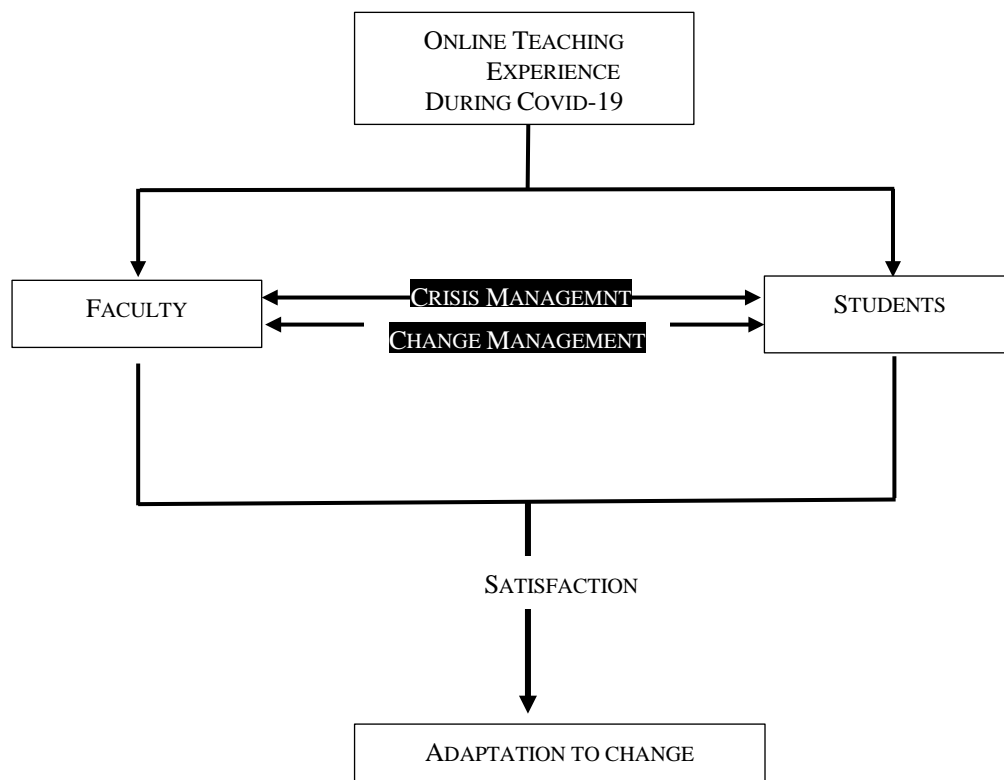


Figure 1: Theoretical Framework

1.8.1 Crisis Management

Change during crisis was addressed by Smith (Smith 1990, Smith 1995). According to Smith there are three stages in the crisis management change: Crisis management, operational crisis,

crisis legitimation. During the first stage, “crisis management”, organizations experience an interruption to their regular functions which will generate a crisis incubation. During the pandemic universities had to close their campuses and faculty and students were surrounded with uncertainties not knowing what will happen to the academic year (Jung, Horta et al. 2021). In stage two, “operational crisis”, the issues escalate, and additional pressure is put on leaders and decision makers who can no longer work using the same processes they have set before the crisis. This creates confusion and stress and limits the organization’s operations (Smith 1995). For example, when universities could no longer offer lectures to the students and had to come up with a solution during the pandemic. In phase three, “crisis legitimation”, the institutions accept the crisis and adopt a change in their operations to sustain and resume functions. In this case, adopting online teaching and learning despite the absence of legislations in countries such as Jordan, Egypt, and Lebanon which lack online education culture (Lassoued, Alhendawi et al. 2020). During that phase, stakeholders are highly emotional as they have been affected by the crisis and they start to learn new ways. They probably needed “virtual community care” and an online self help or social support (Burrows, Nettleton et al. 2000). Faculty and students were affected by a pandemic they did not know much about at the beginning, their health was threatened, they did not want to lose their jobs, students did not want to lose their academic year, so both were living stress and uncertainties and were emotionally drained (Cutri, Mena et al. 2020, Alfawaz, Wani et al. 2021, Fialho, Spatafora et al. 2021). One would question whether a crisis response which in this case was the transition to online teaching and learning during a pandemic, will be sustainable, accepted or resisted during and post the pandemic which will lead us to change management theory.

1.8.2 Change Management

Change management is crucial to any type of organization including educational institutions. It is a tool that ensures organization survival and success amidst competition (Ng'ang'a and Wesonga 2012). Successful change does not come easy. Resistance to change is a common phenomenon in organizations especially when it affects the routine of individuals (Laumer, Maier et al. 2016). For any change to be successful, organization must be ready to overcome resistance (Dent and Goldberg 1999). People fear the unknown, they fear that change will require them to do more tasks, they fear the change will affect their outcome or make them earn less money (Bordia, Hobman et al. 2004).

The notion of change management is credited to Kurt Lewin who believed that change happens through learning, planning, and involving individuals who will be affected by that change. His approach to change includes four elements which are Field Theory, Group Dynamics, Action Research, and the three steps model of change (Lewin 1947). The HEI experienced unplanned change during the pandemic. Mishra, Gupta et al. (2020) discussed the shift to OTL as an innovation and adapted Lewin's 3-steps model of change: unfreezing, changing, and freezing. According to Lewin (1947):

Unfreeze is the first phase of change where the routine of individuals is shaken by a certain force or incident. For example, in the case of the pandemic and how it altered the mode of teaching and learning and forced faculty and students to adapt the online mode of delivery. Faculty and students who were used to their face-to-face interaction were no longer able to meet physically on campus (Mishra, Gupta et al. 2020).

Change is the second phase according to Lewin. Unfreezing motivates individuals to change directions and to identify and evaluate other options to be able to fulfil their tasks despite the

unforeseen circumstances. In this case adapting the online teaching and learning mode of delivery during the pandemic.

Freezing as identified by Lewin (1947) and adapted by Mishra, Gupta et al. (2020) is the final phase where individuals adopt the change that happened. They will not go back to the old norms of face-to-face teaching and learning, but they will learn from the change and adopt a new mode which is in this case a hybrid teaching and learning mode.

Throughout these phases and according to Lewin (1947), the individuals transform their norms and routines, their behavior and mindset change as well. The organization as a whole, experiences a culture change and implements new policies and practices. Lewin did not consider organizations as rigid in implementing planned change. However, one would question if the crisis had an impact on faculty and students' satisfaction which will lead us to the job satisfaction theory.

1.8.3 Job Satisfaction

Job satisfaction is the feeling that employees express towards the different dimensions of their jobs. According to (Hoppock 1935), job satisfaction is a combination of psychological, physiological, and environmental conditions that lead a person to truly be satisfied with his/her job. Kaliski (2007) added that job satisfaction is when people work in jobs that they enjoy, are happy in, and fulfilled by. Additionally, the job satisfaction is referred to as the attitudes that people have towards work, positive attitudes indicate job satisfaction in one's job while negative attitudes indicate dissatisfaction (Armstrong 2006).

Many theories have emerged to explain how job satisfaction is attained. According to Maslow (1954), all humans have five needs: physiological, safety, social, self-esteem, and self-

actualization, where job satisfaction is achieved when an individual's esteem and self-actualization needs are realized; However, to fulfil these intrinsic higher-level needs, individual's must first achieve the lower extrinsic level of needs reflected in the basic physiological and safety needs, otherwise job satisfaction will never be met.

Moreover, the expectancy theory that was introduced by (Vroom 1964), illustrates that individuals may perform adequately in their jobs when three components exist: expectancy, instrumentality, and valence. In other words, people tend to be motivated and satisfied with their jobs if they acknowledge that exerting effort will lead to performance (expectancy), and this performance leads to the achievement of desired outcomes (instrumentality) that will be sufficiently rewarded (valence). By that said, Vroom's theory links job satisfaction with rewards, where individuals are satisfied when they receive a reward that is considered fair and equivalent to their contributed efforts. Likewise, (Blackburn and Lawrence 1995), explicated that the behavior of people is the result of their perceived capacity to respond and their perceived value of the rewards that will be obtained.

Furthermore, (Herzberg 1976), developed a theory explaining that job satisfaction has two dimensions: motivation and hygiene. These dimensions describe certain factors in the individual's work environment that cause job satisfaction or job dissatisfaction. To further explain, hygiene issues (dissatisfiers) such as company policies, supervision, salary, relations, and working conditions can decrease job dissatisfaction if handled in the correct manner, while motivators (satisfiers) such as achievement, recognition, the work itself, responsibility and advancement can increase job satisfaction.

1.9 Research Questions

As the Covid-19 pandemic has impacted all aspects of society, including higher education institutions (HEI), the following primary research question is intended to frame my discussion:

What influence will online teaching and learning have on faculty and students' satisfaction at higher education institutions during and moving out of the COVID-19 pandemic?

The current available research does not provide conclusive answers to these questions:

1. The extent to which Covid-19 impacted Faculty and Students satisfaction with OTL and saved or added risks to the Academic Year
2. The extent to which OTL will impact Faculty and Students satisfaction in HEI in the future and whether HEI hierarchies will cause resistance to change in embracing the new model of teaching and learning
3. The impact OTL will have on Faculty and Students satisfaction in HEI

This research supports the following objectives:

- a) Evaluate the satisfaction of Faculty and Students with online teaching and learning
- b) Investigate the factors that contribute to faculty satisfaction during online teaching and learning.
- c) Analyse the factors that contribute to the students' satisfaction during online teaching and learning.

This study will be an exploratory move towards developing an adaptive model to support faculty and students' integration of online teaching and learning in HEIs.

1.10 Thesis Structure

This thesis is composed of six chapters including this Chapter 1: Introduction to the study.

Chapter 2: Review of the Literature

This chapter begins with Online Teaching and Learning (OTL) literature and discusses the importance of OTL in HEI, innovation and online pedagogy, in addition to an overview of the evaluation and implementation tools Sloan C and TPACK that are used by practitioners. The main body of this chapter is largely descriptive to give an overview of the importance of OTL in HEI and the faculty and students satisfaction/dissatisfaction. It looks at the role of faculty, the role of the institution, the role of communication and engagement, in addition to the flexibility and the use of OTL as a necessity during the pandemic. Finally, this chapter highlights challenges faced in OTL and identifies the gap in the literature.

Chapter 3 Study Design and Methodology

This chapter provides the research methodology which I used in this thesis. I have adapted the 'research onion' approach allowing me to explain the research philosophy, the research approach, the methodological choices, the research strategy, the time horizon and the data collection and analysis. Finally, I include in this chapter the ethical considerations and limitations of this research.

Chapter 4 Quantitative findings

This chapter reports the quantitative data collected from the satisfaction surveys administered to both faculty and students. The quantitative data are synthesized and analyzed using statistical software to capture the variables affecting faculty and student satisfaction with online teaching and learning in higher education during the pandemic.

Chapter 5 Qualitative findings

This chapter reports the qualitative findings from the interviews. The interviews are analyzed to get deeper understanding of the faculty and students experience with online teaching and learning during the pandemic crisis. The results of these interviews help to confirm the quantitative findings while also adding understanding of the variables that faculty identified as leading to the satisfaction or dissatisfaction with the online experience.

Chapter 6 Summary, discussion, and implications

This chapter will reflect on the literature review and compare it to the quantitative and qualitative findings. At the end of the chapter, I conclude with the contribution of this research to theory and practice and highlight recommendations for the future. I will propose lessons learnt from the crisis caused by the pandemic in HEIs mainly in Business Schools and ways to move forward.

1.11 Definitions

Face to face learning – is a mode of instruction delivery whereby the content of learning and teaching takes place in person where the student and the instructor are in the same physical place. This is also known as “traditional mode” of teaching.

Correspondence Learning- is when students are not able to reach the physical place where learning is taking place and therefore teaching materials, assignments, and students work are sent back and forth by mail via the post.

Distance learning- is a mode of instruction delivery whereby students' lectures and study materials are sent by post like in the correspondence learning and later on broadcasted via radio or TV without the students attending the physical place where teaching takes place. With the evolvement of technology, distance learning is nowadays interchangeably used with online learning or e-learning.

Online learning- is a mode of instruction delivery whereby teaching and learning takes place via the internet. The students and the instructors do not need to be in the same location. It is also referred to as e-learning.

E-learning- also referred to as online learning whereby teaching and learning takes place using electronic resources either in a synchronous or asynchronous method. Students and instructors need to have proper hardware and software with appropriate internet connection.

Blended or Hybrid learning- is a mode of instruction that combines both face to face traditional and online teaching and learning methods.

Chapter 2: Literature review

“Learning is a series of course corrections to keep you headed in the right direction. Try, fail, succeed, and try again. Learn. It doesn’t stop until you die”. (Cross 2004, page 103)

2.1 Introduction

One of the main challenges in life is that we cannot predict the future. However, researchers can study, investigate and learn from previous experiences to be ready for the future. This chapter presents the prevalent theories on online teaching and learning in HEIs and explores factors that contribute to faculty and student satisfaction. This chapter, among all the other chapters, relies heavily on secondary research and supports the following objectives:

- a) Evaluate the satisfaction of Faculty and Students with online teaching and learning
- b) Investigate the factors that contribute to faculty satisfaction during online teaching and learning.

- c) Analyse the factors that contribute to the students' satisfaction during online teaching and learning.

This study will be an exploratory move towards developing an adaptive model to support faculty and students' integration of online teaching and learning in HEIs.

As mentioned in Chapter 1, 2019-2021 witnessed many challenges due to the global Covid-19 pandemic. Covid-19 implications and setbacks affected HEIs teaching and learning, compounded by an economic downturn that universities had to face to sustain its operations. While the world shared the burden and the implications of the Covid-19 pandemic, universities responded at a different pace based on their circumstances and their level of preparation (Unger and Meiran 2020, Wyse, Stickney et al. 2020). The pandemic affected universities' finances and fund-raising opportunities that most private institutions rely on (Marshman and Larkins 2020, Ross 2020, Witze 2020). International student retention also became a major concern as Covid-19 forced students to be trapped in their dorms away from their loved ones or in their home countries away from their universities (Firang and Mensah 2022). Universities suspended all in-person teaching activities on their campuses as part of the general lockdown to contain the spread of Covid-19. The predominant response to this lockdown by HEIs was to assume the continuity of the learning process to "save the academic year" (Longhurst, Stone et al. 2020). Hiltz and Turoff (2005) argued that universities will need around 50 years to adopt blended or online teaching and learning; however, the pandemic accelerated that adoption and in only few days we saw many universities shifting to online in a way to sustain education (Strielkowski 2020). This was a time of crisis that required an immediate action. An immediacy that is not usually applicable in HEI where bureaucracy and governance prevail (Vaira 2004). Worldwide, the education sector was caught in the eye of the storm trying to find ways to

sustain and resume its functions. It is hoped that once this pandemic is over HEI would have learned many valuable lessons.

The world has faced many pandemic throughout history. The Antonine plague erupted in the Mediterranean world from 165 to 180 CE (Bruun 2007). In the 11th century, Leprosy grew into a pandemic in Europe (Donoghue, Taylor et al. 2015). One third of the population lost their lives in what was named the Black Death due to the bubonic plague in 1350 (Duncan and Scott 2005), followed by the great plague of London in 1665 (Bell 1924), the Cholera pandemic in 1817 (Hu, Liu et al. 2016), and the Spanish flu in 1918 (Trilla, Trilla et al. 2008). Most recent pandemics are highlighted in Figure 2 below leading to the first pandemic that occurred at such a global scale in the digital era, impacting Health, economy, politics, and education: Covid-19 – a pandemic that showed the vulnerability and unpreparedness of the education system worldwide (Bozkurt and Sharma 2020).

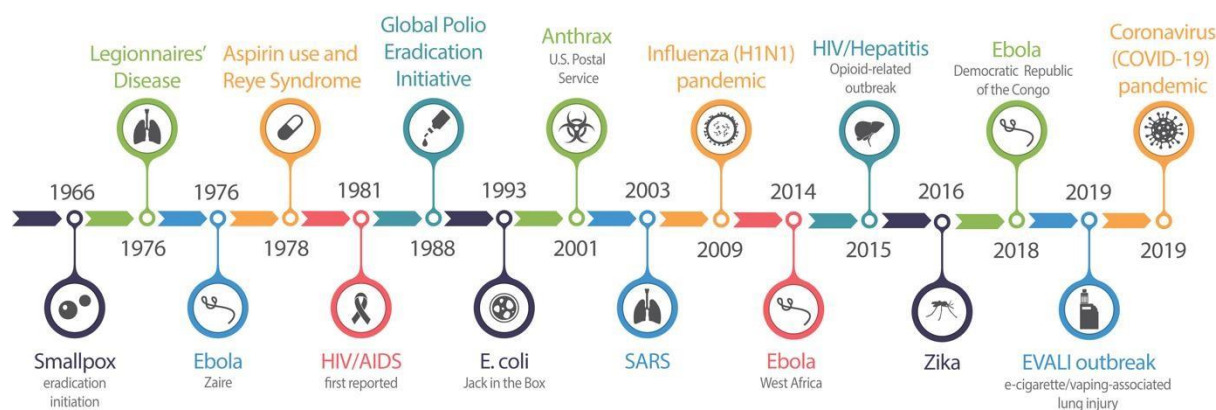


Figure 2: WORLDWIDE PANDEMICS TIMELINE

<https://www.cdc.gov/eis/about/history.html> retrieved on March 24 2021

UNESCO (2020) stated in its report that in March 2020 more than 84% of the student population were out of their educational institutions and had to move to an online learning mode. Faculty had to move away from their comfort zone and had to face issues related to their

lack of technology training or knowledge in using online teaching tools. Teaching mediated by technology is different than moving a lesson online (Mishra and Warr 2021). Many faculty lacked the knowledge and the skills to teach online especially that they were working under pressure and uncertainty within their personal and professional lives.

Online teaching and learning (OTL) is not a new concept. From the beginning of the millennium and due to the increase in the technical innovation and wide accessibility of the internet we saw an increase in the online learning adoption (Tallent-Runnels, Thomas et al. 2006). Moreover, E-learning, distance learning, and correspondence courses were considered in many institutions over the past years. The history of correspondence, distance learning, and e-learning was explained in Chapter 1 page 5-11 but the migration of HEI during the crisis was unprecedented. To ensure the continuation of teaching, many universities moved towards digital services to support student learning (Ali 2020, Crawford, Butler-Henderson et al. 2020), yet this move was accompanied with challenges that led to mixed findings in terms of faculty/student satisfaction/dissatisfaction. In all cases, faculty and students during Covid-19 experienced a mode of teaching that will probably shape the future of online teaching and learning in higher education. The efficiency of solely delivering online courses and gaining relevant learning outcomes will need to be investigated through the Covid-19 experience. Recognizing that the online programs implemented during the pandemic were done so as a resource and not as an integrated tool within a broader curriculum design aimed at guiding students throughout the learning process (Adedoyin and Soykan 2020).

Globally, while some institutions were more or less prepared as they already had online programs prior to Covid-19, others had to make drastic changes to be able to stand in the face of the pandemic induced challenges (Adedoyin and Soykan 2020, Rizun and Strzelecki 2020). On one hand the move to online teaching and learning maintained the social distancing imposed

to reduce the rapid transmission of the virus, but on the other hand, it created challenges and issues among all the HEI stakeholders (Ribeiro 2020).

Following the start of the global pandemic at the end of 2019, the academic literature has seen a burst of research papers on the topic of OTL. This body of recent work collectively details the sudden change of pedagogy in HEI and the first exploratory move towards the need to develop an adaptive model to support faculty and student integration of OTL in HEI (Mishra, Gupta et al. 2020, Tondeur, Howard et al. 2021).

Mishra, Gupta et al. (2020) discussed the shift to OTL as an innovation and proposed a 3-step process adapted from Lewin (1947) that the researchers identified as unfreezing, changing, and freezing. Unfreezing refers to when HEI had to forcefully shift from the traditional face to face teaching model to an online model due to Covid-19. Most specifically this occurred in most cases with no prior planning or consultations as it was not possible to keep running face to face classes to maintain social distancing. The unfreezing phase motivates stakeholders and provides security; by working online, faculty and students were physically safe and secure (Mishra, Gupta et al. 2020). Changing, refers to adopting or creating a solution to a problem. In this instance HEI had to adopt an online solution as there was no other possible solution that they could adopt to resume the academic year. These changes represent new protocols that HEIs would usually not adopt at such a speed and without prior planning as the ability of HEIs to cope with rapid change usually faces a lot of resistance (Lane 2007). Freezing, refers to the fact that HEIs will most probably adopt OTL even after Covid-19 as this experience provided lessons learned that will help shaping the future of HEI and meeting the needs of students in the 21st century.

As announced by WHO (WHO 2020), suspension of face-to-face educational activities due to Covid-19 was required by worldwide governments and online education was made obligatory.

Universities had to implement online teaching regardless if it was part of the curriculum or not. That was a worldwide necessity. Franchi (2020) argues that online learning needs to be introduced gradually to be accepted by students and faculty, “first impression is very important”. In his study, Franchi found out that during Covid-19, distance learning enhanced students’ effectiveness and productivity to a certain extent; since students were comfortable using technology, it was intuitive for them to use the necessary IT tools for online learning. However, students wanted to go back and experience campus life, they were not all totally satisfied with the model and some struggled adjusting to this new learning style (Raza, Qazi et al. 2021).

In the remainder of this chapter, from the theoretical aspect I look at the importance of online teaching and learning in Higher Education, the innovation and online pedagogy. From the practical aspect I will look at the Online Teaching and Learning Implementation tools. I then define OTL and its importance in HEIs highlighting the importance of literature about faculty and student satisfaction and dissatisfaction with OTL. I also explore the factors that contribute to OTL success, such as communication, engagement, feedback, and the role of the institution and support. I also discuss the flexibility, innovation, and pedagogy associated with OTL, while also noting the challenges presented by OTL. I conclude by highlighting the gaps in the literature that this research seeks to fill.

2.2 The importance of online teaching in HEI

Distance teaching and learning has been around since 1700’s as mentioned in Chapter 1, and has seen a growth in the past years (Seaman, Allen et al. 2018). HEIs invested in complete or partial online programs (Harvard, Durham, Liverpool...etc) and many countries issued appropriate regulations and policies to address this change in HEI and make online degrees

compliant (Powell, Watson et al. 2015). However, online teaching was seen as an alternative and not a serious model to ensure steady and efficient educational activities (Ribeiro 2020). OTL creates an environment which is flexible and convenient for learners and educators, provided there is an appropriate course design and an effective pedagogy followed. Online teaching is a convenient method to deliver courses that could be accessible by many students regardless of their physical location (Keengwe and Kidd 2010). A variety of tools can be used when faculty and professional technical staff collaborate to create the ideal online learning environment (Oblinger and Hawkins 2006). The different deliverable types available help in innovative and creative learning and achieve new levels of education; however, these tools cannot be effective if used in isolation. It is essential in OTL to have faculty and students engaged in a well-designed course to achieve the appropriate teaching and learning outcome (Everson 2009). To support the aforementioned, it is important to understand the role of faculty and the factors that lead to the satisfaction and dissatisfaction of faculty and students in OTL. In this study, I examine the lessons learnt from the OTL experience during Covid-19 as well as the factors that contributed to faculty and student satisfaction in an effort to comprehend what makes for a successful online learning and teaching experience.

2.3 Innovation and online pedagogy

The pandemic accelerated the digital transformation in HEI. Kopp, Gröblinger et al. (2019) assume that digital transformation in HEI can be hindered by change, pace, technology, competences and financing. Online education is one facet of this digital transformation that ensured education continuity during the pandemic. Many researchers argue that faculty are the main catalysts in the success of the online learning experience provided they use appropriate online pedagogy (Pelz 2010, Crawford-Ferre and Wiest 2012, Kilgour, Reynaud et al. 2019).

To make effective use of online learning, a modified pedagogy is needed (Bunnell and Bernstein 2012). Meyer and Land (2003) suggest that online learning requires confrontations with new requirements and challenges as they take faculty out of their comfort zone in their classrooms and necessitate the use of new concepts to master the new online environment. With the sudden move to online during the pandemic, it was merely a move of content with no time to change the pedagogy or apply new concepts (Manfuso 2020). Online teaching and learning pedagogy is not identical to face to face pedagogy as it requires different preparations, curriculum design, planning, different methods of teaching, engagement and interactions (Hodges, Moore et al. 2020); This may conflict with previous faculty experiences and approaches to teaching (Major 2010) and can lead to concerns and uncertainties when challenges are faced and when teaching practice has to be transformed (Redmond 2011).

Kilgour, Reynaud et al. (2019) confirm that online teaching requires a move that is ontological and epistemological: faculty need to engage with both technology and pedagogy. The pedagogy of online teaching delivery causes challenges as in many cases faculty do not have the expertise in developing activities and resources for online teaching (Vlachopoulos 2020). It is important for faculty who are teaching online to understand the potential barriers encountered and to realize that online teaching requires a pedagogical transformation (Adedoyin and Soykan 2020). Online pedagogy should not be considered a replication of the face-to-face teaching mode using technology, it is a transformation of teaching practices using new and developing technologies (Wilson and Stacey 2004).

2.4 Online Teaching and Learning Implementation tools

2.4.1 Technology, Pedagogy, And Content Knowledge (TPACK)

TPACK is an evaluation tool for integrating technology in online teaching and will have a practical significance in my research. Researchers have shown the importance of not dealing with technology in isolation, but of integrating it into pedagogy and knowledge (Bailey and Card 2009). In the late 1980s, Shulman (1987) introduced the TPACK framework to help researchers and faculty effectively integrate technology into their learning environment.

More recently, Glowatz and O'Brien (2017) argued that TPACK is a complex framework that produces flexible knowledge to help faculty integrate technology in their teaching. Technology includes several tools and characteristics that need to be visible for faculty. Using TPACK according to Koehler, Greenhalgh et al. (2017) incorporates various digital portfolios that will help using technology for academic purposes. Teaching is a complex phenomenon and Koehler and Mishra (2009) argue that practicing, developing, and understanding the use of technology in online teaching is a major task that should be regularly done by faculty. From this stance, integrating technology as a solution to the Covid-19 problem added complexity to teaching, which is both a complex and difficult task. Online teaching is not limited to uploading or downloading content using an online platform. It is a learning process that requires planning, designing, and engagement. Bozkurt and Sharma (2020) believe that what education has faced during the pandemic was emergency remote teaching, a temporary solution which is different than the actual online distance education that will see further prosperity post Covid-19.

Based on Shin et al.'s work, when researching the development of assessment instruments, there are 3 components central to the success or failure of online teaching: Content, pedagogy, and technology (Shin, Koehler et al. 2009). The TPACK framework captures the knowledge of technology and how the content and the pedagogy interact with the technology used. Dhawan (2020) argues that TPACK is not one size fits all, as integrating technology occurs with proper infrastructure and a culture ready to embrace this tool with no constraints to online

pedagogy. Each HEI is located in its own space where there are complex and diverse cultures and governance. That space must invoke and accept the change and exhibit appropriate adjustments for faculty to leverage any OTL constraints and turn it into a recipe for success (Mishra and Warr 2021). Writing about technology professional development in higher education, Lidolf and Pasco (2020) argue that TPACK:

1. Prevents faculty members from being technologically ineffective as it integrates technology with content and pedagogy
2. Allows professional development
3. Provides shared goals towards educational change implementation
4. Increases ICT expertise and confidence
5. Transforms pedagogy

I use the TPACK tool in this study for evaluating faculty use of technology during Covid-19 as I am interested in identifying the factors that explain the variations between satisfied and dissatisfied faculty using OTL. While some educators believe that integrating technology is an easy task which does not necessarily need high tech skills (Benson and Ward 2013), Stover and Veres (2013) used TPACK in HEI to understand faculty learning of technology, pedagogy and content and found that faculty rated themselves lower on technology than on pedagogy and content.

Benson and Ward (2013) agreed with Stover and Veres (2013) when they used TPACK to evaluate faculty expertise in OTL and found there are different factors that contribute to faculty knowledge development. In their study, the pedagogy was shown to have greater importance than technology knowledge. Although there is an intersection between technology, pedagogy,

and content knowledge, but they are not of equal importance according to their study. The content knowledge is acquired before entering the face-to-face classroom and the pedagogical skill will be developed with experience (Shulman 1987) but acquiring technology capabilities in OTL is more challenging. This lack of integration between content, pedagogy, and technology can also be due to the fact that technology is changing very quickly (Ertmer and Ottenbreit-Leftwich 2010) making it difficult to keep up with the progress.

The limitations of this tool are that it is not clear how learning in OTL is perceived by faculty and what the factors are that can lead to faculty and student's satisfaction; therefore, in this study, I complement this tool by using the Sloan C.

2.4.2 Sloan C

In 1993 Sloan C developed the five pillars of quality framework as a benchmark institutions can follow to achieve a successful online pedagogy (Moore 2005). Sloan C is a quality framework that emphasizes on 5 pillars to support having an efficient, quality online learning environment. The framework's main purpose is to help institutions improve the quality of their online education and make it accessible and affordable to all across all disciplines. A main factor in successful online learning according to Sloan C is collaboration and sharing good practices.

The five pillars of quality that make the Sloan C framework are:

1. Access- All learners can access the online learning
2. Learning effectiveness- Online learning achieves comparable learning outcome as face to face learning
3. Faculty satisfaction- Faculty are satisfied and rewarded for their online teaching

4. Student satisfaction- Students are satisfied with their online learning
5. Scale- Scale is reduced while services improve



Figure 3: SLOAN-C CONTINUOUS QUALITY IMPROVEMENT(CQI) (MAYADA,1997)

Sloan C was originally used as a framework to evaluate and assess asynchronous learning (Moore and Moore 2005); however, several researchers also adopted it to evaluate blended learning (Vignare 2007, Laumakis, Graham et al. 2009). Sloan C considers the input, the process, and the output of teaching and learning using the 5 pillars. Laumakis, Graham et al. (2009) argue that the 5 pillars framework include variables that help assess the quality of online learning and provide a comparative platform for blended, online and face to face learning. Sloan C will be used in this study as a framework to redesign and evaluate online learning in HEIs and bridge the gap between online, blended and face to face by integrating several factors that lead to faculty and student satisfaction.

2.5 Online Teaching and Learning- OTL

2.5.1 Definitions of OTL

We first need to understand the definition of Online Teaching and Learning (OTL) as this is an important starting point of this study. There is a developing body of evidence to suggest that OTL has many definitions. The term online learning was first used in 1995 when Web Based System (WebCT) and Learning Management Systems (LMS) were first developed (Singh and Thurman 2019, page 15). Fry (2001) defines online learning as the use of the internet and technology tools for educational purposes. The study by Singh and Thurman (2019, page 15) defines online learning as an environment where students and faculty can be in separate places and they can interact synchronously or asynchronously using an internet connection. Hrastinski (2008) identifies two types of online teaching, synchronous and asynchronous. Online synchronous teaching requires the use of technology and is teacher-centered rather than student-centered. It can be challenging in terms of the diversified tools used. Besser, Lotem et al. (2020) argue that synchronous online teaching requires appropriate investment in technology and pedagogical training. They add that, this synchronous transition requires a lot of adaptation and can be stressful if it is accompanied by uncertainties. The synchronous mode can be combined with an asynchronous mode as well since this has proven effective in terms of students engagement, active learning and content delivery (Sunasee 2020). In the asynchronous mode students can watch recorded faculty lessons, read instructions, or lesson modules, complete assignments, or formative assessments, ask questions, and participate in discussion forums. While a synchronous session is held during a class time using a video conferencing tool, the asynchronous sessions are held at the students' own preferred times (Guo 2020). Institutions, faculty members and students need to have a proper understanding of the benefits and limitations of the synchronous and asynchronous for the teaching and learning to be efficient and effective (Hrastinski 2008).

Rapanta, Botturi et al. (2020) state that online learning is mediated by technology and the researchers agree with Singh and Thurman (2019, page 15) that in OTL both the faculty and the learner are at a distance, they need access to technology, they interact using technology and they both need to be supported while using different tools and techniques. This perspective is seen as important in understanding the impact of the support faculty and students received during the pandemic.

In a longitudinal study based on a systematic literature review spanning 30 years (1988-2018), Singh and Thurman (2019, page 15) analyzed various terms and definitions for online education uncovering common elements among them all. Researchers indicated that all definitions included technology as a way to deliver education and enhance engagement, but they all lacked mentioning the term learning. The study concluded with several recommended definitions that included both technology and learning. Thus, the definition I will adopt more specifically for this study is based on one of several definitions suggested in Singh and Thurman (2019, page 15) that is applicable for the OTL used during the Covid-19 pandemic:

“online education is defined as education being delivered in an online environment through the use of the internet for teaching and learning. This includes online learning on the part of the students that is not dependent on their physical or virtual co-location. The teaching content is delivered online and the instructors develop teaching models that enhance learning and interactivity in the synchronous and asynchronous environment” (Singh and Thurman 2019, page 15).

Based on this definition faculty are part of this OTL but they are not a homogenous group and they will each need requirements that will help them in OTL practices (Daumiller, Rinas et al. 2020).

2.5.2 Faculty and Students in OTL

The key stakeholders in HEI include internal and external entities such as Alumni, donors, and board members, but the main stakeholders remain students and faculty. The growing online educational demands due to Covid-19 overwhelmed faculty and students who were used to traditional in-person delivery modes. While a group of faculty and students were considered tech savvy and digital natives since they had digital competencies, skills and the tools needed for online teaching and learning (Prensky 2001, Raza, Qazi et al. 2021), others lacked necessary skills. It was challenging for many students and faculty to easily migrate to the emergent online shift as they did not have the skills or resources (Bozkurt and Sharma 2020).

Moller, Foshay et al. (2008) argue that understanding faculty perceptions of OTL is necessary in meeting the change in teaching modes and sustaining institutional growth. HEIs need to help faculty in overcoming any barriers with OTL to create an environment in which they will be confident working. Such an environment can be challenging as it requires the use of technology that many members of the faculty might not be familiar with. The OTL model can also be a threat to some faculty as this model of teaching might lead them to think they will lose their jobs (Fox and Helford 1999). Furthermore, the task of learning the OTL technologies and processes is a time-consuming task that might keep faculty away from their research. OTL is twice as time consuming as traditional methods, so faculty need to be compensated and rewarded for that extra effort (Cavanaugh 2005). Faculty can face many challenges in delivering the online courses and having institutional support is a key in their online experience satisfaction that will translate into student satisfaction.

Students are at the heart of the OTL environment. According to Meyer (2002) students learn online as much as in traditional classes and this learning experience can be more successful

when faculty prepare for the lessons, interact, and engage with students using proper online resources (Moore 1989). Students' online experiences are enhanced when faculty receive proper support and training to be able to promote collaboration and create innovative and interactive activities with the OTL experience (Berge 1999, Maloney 1999). Students are the ones who will assess and rate the effectiveness of the OTL experience, and their evaluation have been proven to be valid and reliable through many studies (Marsh 1987, Greenwald 1997). Northrup (2009) proved that students are more satisfied with their OTL experience when their faculty adopt proper communication and engagement techniques, and encourage collaboration using planned and interactive activities. In his research, Northrup (2009) adds that students need to have proper time management coaching in the OTL environment. The students also have different roles to play in the online environment. Young (2006) reported that students need to be engaged. Other researchers found that in OTL students can be distressed by lack of communication, and can be frustrated by the lack of appropriate tech reliability and quality of feedback received in addition to the course content (Tricker, Rangecroft et al. 2001, Spangle, Hodne et al. 2002). OTL should not be isolated and both faculty and students should partner together with clear roles to play in the learning process. I address this issue by investigating faculty and student experiences with OTL during a time of crisis when OTL was not planned for and when in many cases it was not properly resourced.

2.5.3 Faculty satisfaction and dissatisfaction in OTL

In the past years, attention was brought to OTL faculty satisfaction, and we have seen some research highlighting the factors that contribute to such satisfaction during normal times (Wingo, Ivankova et al. 2017, Luongo 2018, Stickney, Bento et al. 2019). Sloan C identify faculty satisfaction as one of the five main pillars that contribute to online teaching success

(Moore 2005). During the Covid-19 pandemic institutions had to embrace the OTL model and it became evident that faculty had to do the transition and move from teaching in the classroom to teaching online – a transition that most faculty were not ready for. Bolliger and Wasilik (2009) identified online education as a complex and challenging environment where faculty satisfaction has a direct impact on the overall success of the OTL experience. Eom, Wen et al. (2006) also argue that faculty satisfaction is a key factor in the success of any online learning program. Arbaugh (2000) added that online learning goes beyond the use of technology and provides evidence for the importance of faculty satisfaction as an integral factor that contributes to student satisfaction, student interaction, in addition to its impact on faculty retention and performance (Stickney, Bento et al. 2019). In normal circumstances universities need to foster faculty satisfaction by planning and providing appropriate resources and trainings for its programs online delivery to shape the factors that lead to faculty satisfaction and embracing of online teaching (Mitchell, Parlamis et al. 2015). This was obviously not possible during the pandemic. In a study conducted on 171 faculty members from different universities, Stickney, Bento et al. (2019) concluded that faculty are most likely satisfied when they receive appropriate training and support and have appropriate technology.

Online teaching and learning goes beyond uploading or downloading work for students. It requires the use of an effective online pedagogy that necessitates collegial and IT support and a careful planning, design and goal settings (Bozkurt, Jung et al. 2020, Iglesias-Pradas, Hernández-García et al. 2021); This has been a challenge since the transition to online was not planned for and it was referred to as an emergency remote teaching (Bozkurt, Jung et al. 2020, Hodges, Moore et al. 2020). Faculty need to have appropriate skills to be able to communicate, be creative, and use technology that will help them in their teaching (Cadez, Dimovski et al. 2017), those skills had to be implemented in the emergency remote teaching, but additional

support and training was required. Maatuk, Elberkawi et al. (2021) highlighted the importance of support and mainly the need to upskill the technology background of faculty in online teaching and learning to provide a better experience to students. While some faculty were tech savvy and learned a new set of techniques around content creation and in using the online tools, others struggled due to their lack of technology skills and resources and had less control over their classes due to institutional policies and frameworks intended to ensure consistency in delivery (Aytaç 2021).

Faculty satisfaction impacts not only student satisfaction but also the success or failure of the program. Mitchell, Parlamis et al. (2015) identify relevant faculty attitudes at the micro and macro level. They argue that at the micro level satisfied faculty can impact student satisfaction and student learning outcomes, in addition to faculty retention and performance. At the macro level faculty satisfaction can impact the institution and the success or failure of the program. These findings align with the Sloan C framework which has faculty satisfaction as one of the main five pillars that contribute to OTL success (Moore 2005).

Research has proven that faculty satisfaction can lead to a successful e-learning program, positive student outcomes and student satisfaction (Stickney, Bento et al. 2019). Similarly, Scherer, Howard et al. (2020) confirm that several factors enhance faculty and student satisfaction or otherwise create resistance in adopting OTL during crisis and that those factors include the faculty's role as communicator and facilitator, institution support, such as the availability of resources and appropriate preparation and expertise. My research will investigate faculty satisfaction and dissatisfaction in OTL during crisis and will look at those factors that may contribute to this satisfaction by testing hypotheses related to faculty satisfaction factors. A summary table of all my hypothesis is available on page 54.

Based on the background provided above I hypothesize the following

Hypothesis 1: Faculty are generally satisfied with online teaching and learning.

2.5.3.1 The role of Faculty and Faculty experience

The faculty role in the online environment as a facilitator, designer of the course, mentor, and organizer is important for students to be able to engage meaningfully in the learning process (Young, Cantrell et al. 2001). According to previous research, faculty are the primary assets that support an efficient online teaching and learning experience that leads to student satisfaction (Kennette and Redd 2015, Glazier and Harris 2021).

Muñoz Carril, González Sanmamed et al. (2013) argue that faculty with prior OTL experience are more confident in their pedagogical competencies in online teaching and learning. Bolliger, Shepherd et al. (2019) confirm the above and add that with no experience faculty teaching online cannot use appropriate activities to support and engage students. Hämäläinen, Nissinen et al. (2020) add that faculty's digital competencies should enable them to have the appropriate skills to achieve the learning outcomes. Several researchers agree that face to face teaching skills are different than online teaching skills (Ferrari, Punie et al. 2012, Hämäläinen, Nissinen et al. 2020).

As mentioned in the UNESCO "*COVID-19 educational disruption and response report*" (UNESCO 2020) faculty were asked to teach online using the virtual modality without taking into consideration their previous experiences and without giving them the appropriate tools and resources, especially at the beginning of the crisis. The pandemic caused an abrupt interruption to the face-to-face modality and a transition to OTL with the adoption of technology mediating learning. The transition to OTL was made at a different pace by different educators. Some

responded immediately, others within days, weeks or even months of the closure. This made it challenging to faculty who did not have the time to prepare to play their roles appropriately.

Young (2006) reports that faculty have different roles to play in OTL such as design, communicate and engage learners. Perrotta and Bohan (2020) adds that the shift to online classes requires faculty to interact and engage via discussion forums and other communication tools, either synchronous or asynchronous, and provide timely and frequent constructive feedback, encouragement and motivation to help students achieve their learning goals.

During Covid-19, another role faculty had to play was being a coach, mentor and, good listener to help students during these challenging times (Oducado 2020, Power and Warren 2021).

Faculty were often overwhelmed by the volume of messages and emails received during the OTL experience which required faculty to have proper prioritizing, planning, and time management skills (VanLeeuwen, Veletsianos et al. 2021, Kunaviktikul, Ang et al. 2022). The faculty need to have timely and appropriate communication skills that they can also transfer to their students through example (Tanis 2020). In this study, I will examine the role played by the faculty and the importance of faculty experience in online learning that led to the satisfaction or dissatisfaction of the student experience.

Based on the background provided above I hypothesize the following:

Hypothesis 1a: Faculty who played several roles in the OTL experience during the pandemic were more satisfied with their online experience than faculty who only played the role of facilitator.

2.5.3.2 The role of the Institution- Support and availability of resources for faculty

OTL has seen a high growth in higher education and an adoption of technology. Global technology investments reached US\$18.66 billion in 2019 (Newswire 2020) and online

education was projected to reach \$350 Billion by 2025 (Markets 2019). Some universities have become aware of the importance of OTL prior to Covid-19 and developed strategies for elearning deployment that they promoted for on their websites (Durham University, Open Arab University, Arizona State University, University of Liverpool, University of Florida, etc. ...)

They had the vision of transforming either partially or fully to OTL and adopted this model prior to Covid-19. Some were able to create the appropriate infrastructure and allow the adoption of e-learning. However, the effectiveness of these measures varied from one institution to another (Curran 2004). The pandemic accelerated this adoption and several institutions found themselves making these decisions overnight without prior institutional support or planning. Researchers highlight the importance of institutional support when transitioning to OTL. This support will help HEI to remain competitive. Faculty need to be prepared and have the appropriate professional development that will ensure they have the skills needed to use appropriate online pedagogy (Ferri, Grifoni et al. 2020, Rapanta, Botturi et al. 2020). Frankel, Friedman et al. (2020) also found that having appropriate technical and pedagogical support is vital to OTL transitions. This obviously was not possible during the unplanned transition due to Covid-19. That transition caused many issues related to the lack of faculty training, student support, online pedagogy, and online implementation (Scherer, Howard et al. 2020). While on one hand technology was used during the pandemic as a problem-solving tool regardless of faculty experience with technology (Mishra and Warr 2021) it has created several challenges and problems on the other hand. Faculty who efficiently use technology in their face-to-face classes are not necessarily efficient in the online teaching and learning environment (Ananga and Biney 2017). In addition, both faculty and students were experiencing anxiety and uncertainty (Hadar, Ergas et al. 2020, MacIntyre, Gregersen et al.

2020). Institutional support had to be implemented to alleviate their concerns and fears using various ways of ensuring that OTL can actively lead to successful engagement.

Institutions had to provide pedagogical and technical support to their faculty and students as this is pivotal in successful online learning and ensuring quality assurance and readiness during a crisis such as the pandemic (Dhawan 2020).

Based on the background provided above I hypothesize the following:

Hypothesis 1b: Faculty satisfaction in OTL during the pandemic correlates positively with the institution support and training received.

Hypothesis 1c: Faculty satisfaction with online teaching correlates positively with students satisfaction with online learning.

2.5.4 Student satisfaction and dissatisfaction in OTL

HEI offered online courses for students to complete their degree programs during the lockdown. The number of online courses increased, and universities tried to ensure students satisfaction and appropriate learning outcomes. Identifying factors that contributed to students' satisfaction or dissatisfaction is an important research to conduct to develop the appropriate framework for the future of online teaching and learning, Moore and Moore (2005) identify students' satisfaction as one of the 5 main pillars that contribute to online teaching and learning success. Several researchers have concluded that satisfied online students can increase the success of the online program and can have a positive impact on the student's retention, attrition, and motivation (Aragon 2003, Boles, Cass et al. 2010). Students (generation Z) were generally satisfied with their online experience during the pandemic as they are digitally more prepared than other generations (Aristovnik, Keržič et al. 2020). Research has proven that student satisfaction can lead to successful e-learning programs, and positive student outcome

(Stickney, Bento et al. 2019). Several factors enhance student satisfaction or otherwise create resistance in adopting OTL during crisis. Those factors include appropriate student communication and engagement, institution support such as availability of resources and appropriate preparation and expertise (Almazova, Krylova et al.). My research will investigate students' satisfaction and dissatisfaction in OTL during crisis and will look at those factors that may contribute to this satisfaction by testing a hypothesis related to student satisfaction factors. Themes that will be considered from a student perspective will include cooperation of students and appreciation during the challenging times leading to supporting academics to ensure continuing education or resisting online delivery mode during and post crisis without financial adjustment to fees.

Kuo, Walker et al. (2013) identify that, in addition to appropriate communication and engagement, having appropriate technology and support contribute to students' satisfaction with the online learning. Keengwe and Kidd (2010) argued that effective online tools impact students learning outcomes and satisfaction. Satisfied students will be engaged, motivated, and more responsive. This can create a positive climate and help in achieving the appropriate learning outcome (Allen and Seaman 2013). Students need to receive proper guidelines and practical IT instructions supporting them in the online environment as acquiring the new IT skills needed for the use of different tools is time consuming and can be frustrating (Mason and Weller 2001). Students' satisfaction might increase when professional IT staff are supportive and respond to their requests and solve their problems in a timely manner (Biner, Dean et al. 1994). Providing on demand support was a challenging task during the pandemic due to the sudden rise of the number of students undertaking online courses.

Integrating technology into the process of teaching and learning requires new tools and new teaching methodologies. Technological tools can be a source of nuisance and challenges for

both students and faculty and can create many issues. Those issues can be related to the functioning or reliability of the technology (DeBourgh 2003). Many researchers have found that technical issues are the most frustrating and challenging issues faced in OTL. Hillman, Willis et al. (1994) argue that students who cannot interact with technology cannot interact with the content and with the instructors. DeBourgh (2003) suggests that institutions need to direct and support the knowledge and competence of students in operating technology and in using it effectively to ensure a positive online learning experience.

2.5.4.1 The role of communication and engagement

An important factor contributing to the success of OTL is communication and engagement. This refers to the interaction between the faculty and student in the online environment (Alawamleh, Al-Twait et al. 2020). This process consists of the relationship between faculty and student, student and student, as well as student and the course (Alqurashi 2019). This interaction can be synchronous or asynchronous. The synchronous online teaching involves real-time live lessons delivered through video conferencing software such as Zoom, Teams, Skype, and WebEx. While the asynchronous instruction involves the dissemination and storage of pre-recorded lectures, discussion forums, assignments, and lecture notes, Yulia (2020) highlighted the main difference between synchronous and asynchronous online teaching. On one hand synchronous communication happens instantaneously between faculty and students who then have the chance to get immediate feedback ; however, the main issue is that it needs reliable internet connection and time zone differences might be a challenge (Ferri, Grifoni et al. 2020). On the other hand, asynchronous or what is also referred to as store and forward is self-guided and all information can be accessed at the student's own time but this requires self-discipline and proper time management and students might feel isolated. But faculty can be

involved in the asynchronous discussion and can provide feedback that will benefit all student and will provide emotional connection with them (Lowenthal, Borup et al. 2020).

In fact, communication, interaction and engagement or involvement of students has been studied by many researchers who have found a positive relationship between different types of interaction and positive learning outcomes. Moore (1989) distinguished between 3 types of interaction: student to students, student to faculty and student to content. In an online environment student working together increases motivational and cognitive support (Anderson and Kanuka 1999). Students' interactions with teachers can be synchronous or asynchronous and can provide motivational and emotional support (Bernard, Abrami et al. 2009). Student's interaction with content will impact student's knowledge with the subject matter and will result in student understanding of the topic that will lead to an increase of the course understanding and mastery of the learning goals and outcomes (Thurmond and Wambach 2004).

Rapanta, Botturi et al. (2020), found that communication is an important factor to consolidate faculty presence in an online learning environment. This communication is related to timely feedback and appropriate assessment comments. Wilson and Stacey (2004) agree with the importance of communication and adds that it is associated with creating a better learner faculty and learner interaction. Students have always viewed receiving timely feedback as important (Xie and Derakhshan 2021); in a F2F classroom, students get instantaneous replies to their questions, the same should happen in OTL. Moore 1989 reported that interaction is the basis of education and having this in OTL reduces students' frustration and increases motivation. One would think students will highly evaluate instructors who give less work, easy assignments, and lots of compliments and high grades; This was contradicted by the Marsh and Roche (1997) study which concluded that in both face to face and OTL frameworks, students

expect work of high quality, appropriate detailed feedback, and continuous engagement from their instructors. The study added that students tend to rate faculty highly if they challenge them with more work and give them constructive feedback. Beck and Ferdig (2008) argue that best practices should be implemented when communicating in the OTL environment. Faculty should use different communication tools to present assignments, engage, react to students, and involve each and every student without leaving anyone behind. This alone is a challenge by itself since it is very easy for a student to be unnoticeable in an online class. A student needs to feel socially present and connected (Aragon 2003), and this connection is enhanced by proper faculty communication (Easton 2003). My research will investigate the impact communication and engagement have on students' satisfaction with their online teaching and learning experience during the pandemic.

2.5.4.2 Flexibility

Northrup (2009) reported that flexibility is one advantage of OTL that students appreciate as they are in control of their time management and free to do their work at their own time. During Covid-19 most countries issued lockdown measures and limited transportation and commuting. Learners needed a flexible mode of teaching/learning. Convenience and flexibility of the OTL mode contributes to students' satisfaction (Arbaugh 2000). Maki, Maki et al. (2000) argue that student satisfaction is enhanced by the flexibility provided with online learning as this is perceived convenient and enjoyable. McGorry (2003) identified flexibility as being one main factor in evaluating the quality of online learning and affecting students' satisfaction. There are several reasons that encourage students to take online learning, and students are attracted by a range of offers, funding and programs that can be taken online anywhere in the world (Johnston, Killion et al. 2005). However, during the Covid-19 pandemic the students did not

have the choice but to resume their courses online. Johnston, Killion et al. (2005) identify 7 steps in implementing an online course: plan and prepare, design and train, develop and test, implement and evaluate, disseminate. These steps were not implemented by universities during the pandemic due to the urgency of the situation that led to the online move which as a byproduct gave students a flexible option to continue with their learning. Using qualitative and quantitative analysis, Daymont, Blau et al. (2011) reported that flexibility is the “overwhelming” reason that encourages students to choose online education format despite the fact that it requires more self-time management and proper discipline. Based on the above literature the following hypotheses are proposed:

Hypothesis 2a: Students who cope with online due to its flexibility and for being actively involved will report higher levels of satisfaction

Hypothesis 2b: Students who are concerned with online teaching experience due to lack of face-to-face contact, lack of communication and engagement in the online environment during the pandemic report lower levels of satisfaction.

Table 1 below provides a summary of the hypotheses for this research

	Hypothesis
H1	Faculty are generally satisfied with online teaching and learning.
H1a	Faculty who played several roles in the OTL experience during the pandemic were more satisfied with their online experience than faculty who only played the role of facilitator.
H1b	Faculty satisfaction in OTL during the pandemic correlates positively with the institution support and training received.
H1c	Faculty satisfaction with online teaching correlates positively with students' satisfaction with online learning.
H2a	Students who cope with online due to its flexibility and for being actively involved will report higher levels of satisfaction
H2b	Students who are concerned with online teaching experience due to lack of face-to-face contact, lack of communication and engagement in the online environment during the pandemic report lower levels of satisfaction.

Table 1 Summary of Hypotheses

2.6 Online teaching and learning as a necessity during Covid-19

The Covid-19 pandemic resulted in shutting down the world and in isolating countries. A lockdown mode was initiated at different points in time across different locations depending on the pandemic infection rate. The timing and the degrees of the lockdown relaxations depended on whether the pandemic curve peaked or flattened (Koh 2020). The impact of

Covid-19 on the educational sector has become visible and affected faculty, students, administrators, and the whole community. It was clear that the pandemic changed the norms. Social distancing had to be applied and universities had to overcome this challenge as there was no doubt it impacted teaching and learning opportunities (García-Morales, GarridoMoreno et al. 2021). Covid-19 created health, social, economic, and educational challenges and there had to be some solutions or responses to confront it (Adedoyin and Soykan 2020, Mseleku 2020, Pokhrel and Chhetri 2021). Many universities had to close their campuses and there was a fear that students will lose their semester and even the whole academic year as the pandemic continued (Bao 2020). There were no signs of how long the pandemic will last. Universities struggled to find a way out. This was a crisis that universities did not plan for and were not ready to confront as they lacked the resources and strategies (Huang, Tlili et al. 2020). Ministries of education together with universities administrators created task forces to suggest immediate measures to “save the day” and rapidly adopted the online teaching and learning mode to support students and faculty. The World Bank (2020) report highlighted that many countries were supported and guided by the relevant ministries of education to help implementing the sudden OTL mode despite the lack of infrastructure and resources. This was referred to as the “remote learning paradox”. For example, Haiti, Nigeria, and Peru governments, deployed remote learning strategies despite the fact that they did not have proper technology infrastructure or Internet access. In other countries, the governments leveraged partnerships with private sectors to facilitate the OTL process. According to the World Bank" (2021), 70% of the 143 countries surveyed declared that they have subsidized internet access at zero cost in 2021 and beyond. Some of those countries are: Chile, Columbia, Thailand and Saudi Arabia. The OTL adoption happened at different times. China for example engaged in OTL and implemented online systems in February 2020, the ministry of education in Bulgaria

launched e-learning platforms in April 2020, while the ministry of education in Finland had proper guidelines and instructions to facilitate e-learning and created an e-Content repository as soon as the lockdown was initiated (UNESCO 2020). Other countries, however, were left behind. The World bank report (2021) stated that as of June 2021, 40% of the countries in Sub Saharan Africa did not embark in any type of remote learning despite the lockdowns resulting in many students not receiving education, this was mainly due to lack of resources and training.

Online learning was rapidly adopted in an attempt to help students continue their education. The transition to online learning has happened at a very quick pace on an unprecedented scale. Institutions which previously based their teaching on traditional methods among others which had previously invested in blended and online learning, were shaken by the sudden outbreak, and were challenged in shifting to an online mode of teaching delivery overnight (Dhawan 2020).

Covid-19 created a storm and chaos among institutions. Faculty were taken outside the comfort of their classrooms, students were no longer able to live the campus experience or walk in their graduation procession to celebrate their achievements, they were not able to take regular exams or do experiential learning. Students felt trapped in a new scenario they did not necessarily approve of or invest in.

The Covid-19, is the second most devastating pandemic that the world has witnessed after the Spanish Flu in 1918 (Hale, Angrist et al. 2021). As of 26 April 2021, more than 220 countries have been affected by Covid-with 146,841,882 confirmed cases including 3,104,743 deaths, reported by the WHO. Students and faculty around the globe live in uncertainty as it is not clear how long this pandemic will last and when they will be able to go back to their normal life. The effects are not only on the teaching and learning but also on people's mental health.

There are knock on effects on both students and faculty. At the time of writing, there is no magic cure and no sign that the pandemic will disappear. As a matter of fact it is spreading rapidly, mutating quickly, and coming in several waves. This pandemic disrupted all aspects of life and recent studies argue that its mental health impact is large and will be long lasting worldwide (Kola, Kohrt et al. 2021).

Universities across the globe had to adapt quickly with this mode of delivery that was most accurately described as “emergency remote education” since it lacked preparation, resources, and training in most cases (Literat 2021). Faculty and students had to move overnight or in a matter of days without appropriate support and online course design, this obviously brings many challenges.

2.6.1 Challenges faced

Challenges associated with the transition from traditional face to face learning to online learning in the educational sector have been explored through many researchers pre Covid-19. Thorpe (2002) raises interesting challenges with online learning related to support, communication, engagement, motivation, resources, technical skills, time, cost and access. Cost and Access being two of the 5 pillars identified in the Sloan C online quality framework. Other researchers such as Borotis and Poulymenakou (2004) argue that institutions need to be prepared to have an effective online experience. The online pedagogy and practices are different than the conventional pedagogy and require appropriate planning, adjustments, preparations, and resources. Failure to have these will lead to low motivation of learners and low satisfaction of both students and faculty. Research suggests that students and faculty can have a negative online experience, in the form of low student satisfaction (Kenny 2003), if they are not ready for it (Maltby and Whittle 2000). These negative experiences can result from

poor, internet connectivity, high prices of internet bundles in addition to difficulties in assessing course material (Aboagye, Yawson et al. 2021). Hoic-Bozic, Mornar et al. (2008) believe that to be effective, the move to online learning should go through blended learning which did not happen during the pandemic. That move added stress and workloads for both faculty and students who were struggling during uncertain and challenging times to balance between teaching, research, and personal life (Houlden and Veletsianos 2020). In addition to that faculty and students had to worry about privacy vulnerabilities in using online platforms and technical challenges and lack of technological support (Hodge 2020).

Another important challenge is the lack of Technology, Pedagogy and Content Knowledge (TPACK) for faculty involved in the online process. In a successful online environment faculty need to have the pedagogical foundation and appropriate knowledge to be able to facilitate the online experience (Kali, Goodyear et al. 2011).

The pandemic brought uncertainties and fear of the unknown. It is not clear when it will end, or if there will be a cure, and what the lasting impacts will be. Taking faculty and students out of their comfort zone during such challenging times is a good recipe for resistance to change.

2.7 Gap in the literature

The significant increase in online courses and programs in HEIs has not been associated with appropriate online pedagogy or student and faculty satisfaction and its impact on learning outcomes and overall quality of the online experience. Research efforts in this area focus on online teaching practices. There is a developing body of knowledge to suggest that online teaching and learning had an impact on faculty and students during Covid-19. Different authors looked at several variables and factors that contributed to the satisfaction or dissatisfaction of faculty and students with this forced experience. According to Scopus search, around 3000

peer reviewed articles were published on the topic of online learning during the Covid-19 pandemic in the fields of social sciences, arts and humanities between 2019 and 2021. Within this corpus, more than 600 articles address higher education in general. However, the focus was mainly on students' experiences and perceptions towards E-learning (Budur 2020, Laili and Nashir 2021, Muthuprasad, Aiswarya et al. 2021). Some of the findings addressed physical and mental health of students in the online environment (Chaturvedi, Vishwakarma et al. 2021, Idris, Zulkipli et al. 2021, Wieczorek, Kołodziejczyk et al. 2021) others looked at ways to raise students' awareness and ethics online (Meccawy, Meccawy et al. 2021). Interestingly, only around 83 documents have looked into faculty experience, and more than 500 looked into students' experience. Nevertheless, Faculty play a major role in the overall experience of student learning and engagement (Kranzow 2013, Horvitz, Beach et al. 2015).

My research develops this line of enquiry to study what worked well and what didn't during the pandemic OTL experience for both faculty and students to derive a new online teaching and learning model that will help HEI adapt and succeed during crisis.

In this thesis, I examine the role played by the faculty in OTL and the institute's support that contributed to faculty's satisfaction or dissatisfaction in the online teaching experience during the crisis. I also research how both faculty and students coped with the challenges and concerns faced during the pandemic. I aim to contribute to the ongoing discussion on OTL by asking how faculty members managed and adapted to the crisis situations during the Covid-19 pandemic. I frame my investigation within two bodies of literature. The first is grounded in crisis management, the second in satisfaction theory and change management.

Chapter 2 Summary:

In this chapter I conducted a thorough Online Teaching and Learning (OTL) literature review and discussed the importance of OTL in HEI, innovation and online pedagogy, in addition to an overview of the evaluation and implementation tools Sloan C and TPACK that are used by practitioners. The main body of this chapter was largely descriptive to give an overview of the importance of OTL in HEI and the faculty and students satisfaction/dissatisfaction. It looked at the role of faculty, the role of the institution, the role of communication and engagement, in addition to the flexibility and the use of OTL as a necessity during the pandemic. Finally, this chapter highlighted challenges faced in OTL and identified the gap in the literature. The following chapter highlights the methodological approach used.

Chapter 3: The Methodological Approach

3.1 The methodological approach

The research methodology ensures that a research project follows a systematic and planned approach that helps in completing all the stages and maintains a consistent and coherent flow moving from one step to the other (Brannick and Roche 1997).

As stated in Chapter 1 the following primary research question is intended to frame my discussion: What influence will online teaching and learning have on faculty and students' satisfaction at higher education institutions during and moving out of the COVID-19 pandemic? The methodological approach I am using will serve to answer these questions:

1. The extent to which Covid-19 impacted Faculty and Students satisfaction with OTL and saved or added risks to the Academic Year
2. The extent to which OTL will impact Faculty and Students satisfaction in HEI in the future and whether HEI hierarchies will cause resistance to change in embracing the new model of teaching and learning
3. The impact OTL will have on Faculty and Students satisfaction in HEI

Using the methodological approach explained in this chapter will support the following objectives:

This research supports the following objectives:

- a) Evaluate the satisfaction of Faculty and Students with online teaching and learning
- b) Investigate the factors that contribute to faculty satisfaction during online teaching and learning.

- c) Analyse the factors that contribute to the students' satisfaction during online teaching and learning.

This study will be an exploratory move towards developing an adaptive model to support faculty and students' integration of online teaching and learning in HEIs.

This chapter presents the research methodology which I used in this thesis. The main components and instruments of the research are explained. Using the six layers of the "Research Onion" methodology (Figure 4) as defined by Saunders, Lewis et al. (2009, page 129), this chapter will describe the: research philosophy, research approach, research strategy, research choices, time horizons, data collection and data analysis.

"Research methodology is defined as the path through which researchers need to conduct their research" (Sileyew 2019). In setting out my research, I have adapted the classic 'research onion' (see Figure 4), allowing me to construct the original data collection and analysis as the core within layers of the research online, linking strategy, methods and research approach and research philosophy. Researchers follow a systematic process to increase their knowledge by collecting, cleaning, and analyzing data (Saunders, Lewis et al. 2009, page 129). Once I have identified my research question, I defined my sample following a pre-defined set of criteria.

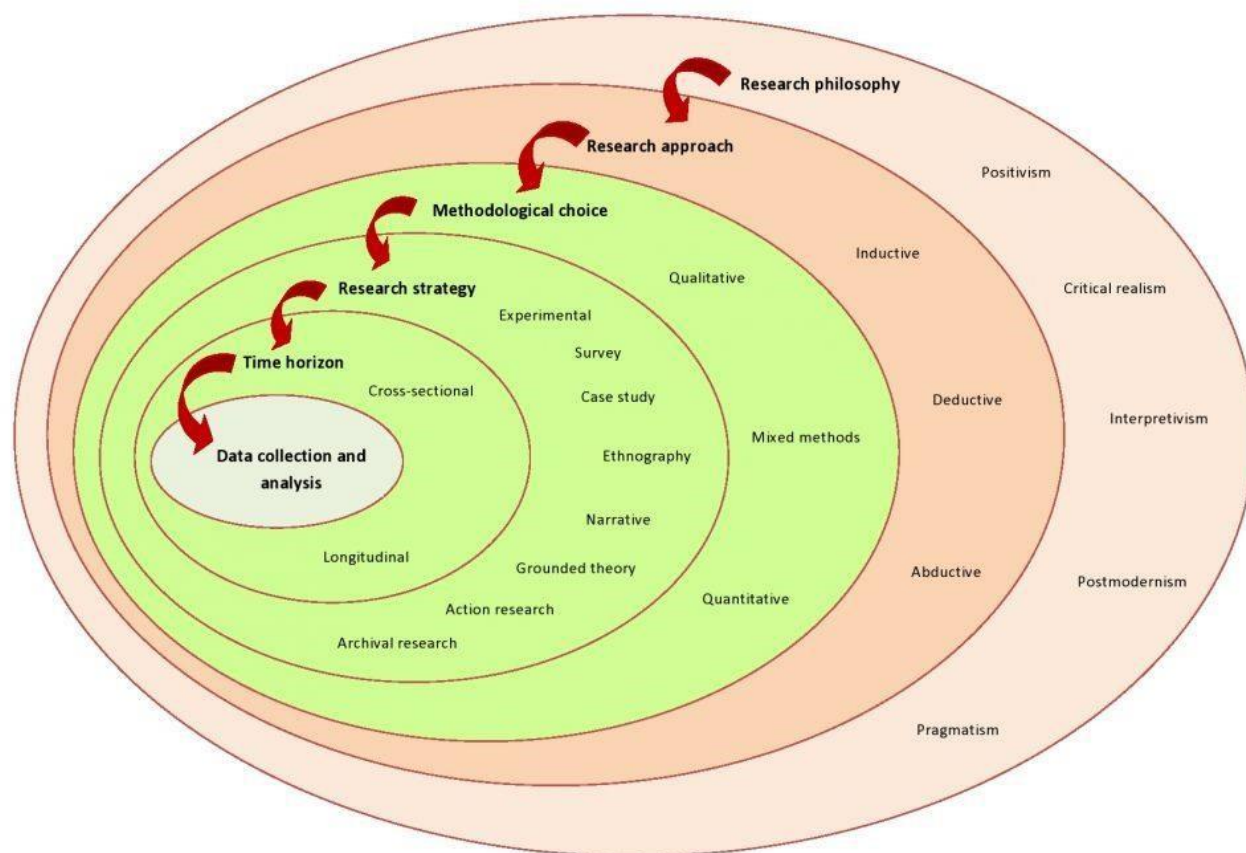


Figure 4 THE RESEARCH ONION

This chapter introduces the methods I have used in this research, it identifies my population and sample of the study. In this part of my thesis I also explain the instruments used, the analyzed data and the theoretical framework. In each section, I go into detail of the different layers of the research onion as shown in Figure 4.

3.2 Research philosophy: Pragmatism

This section highlights the first layer of the Research Onion which is the research philosophy. There are four main trends of research philosophies: Pragmatism, Positivism, Realism and Interpretivism.

Pragmatism is mainly used in understanding social mixed methods research . Dewey (2008) work which was originally published in 1920, promotes Pragmatism by moving the philosophy towards human experience. This helps understanding and interpreting the meaning of specific actions and the sources of beliefs. These experiences will occur because of a specific context and guide humans' actions to produce the expected outcome (Morgan 2014). This is the philosophy embraced in this research as I am using mixed methods (quantitative and qualitative) in a way that draws from different traditions. The data collected through the interviews represent the experiences of the interviewees during a specific moment, which was the Covid-19 pandemic. The interviews were simple and straightforward, and it was possible to get the participants to develop their views and thoughts to get the information needed for the research.

In this research, I was seeking to understand the impact online teaching and learning has had on faculty and students in HEIs based in different parts of the world during the same period of the Covid-19 pandemic. Data are then generated by assessing and interpreting and this leads to promoting change as shown in figure 5.

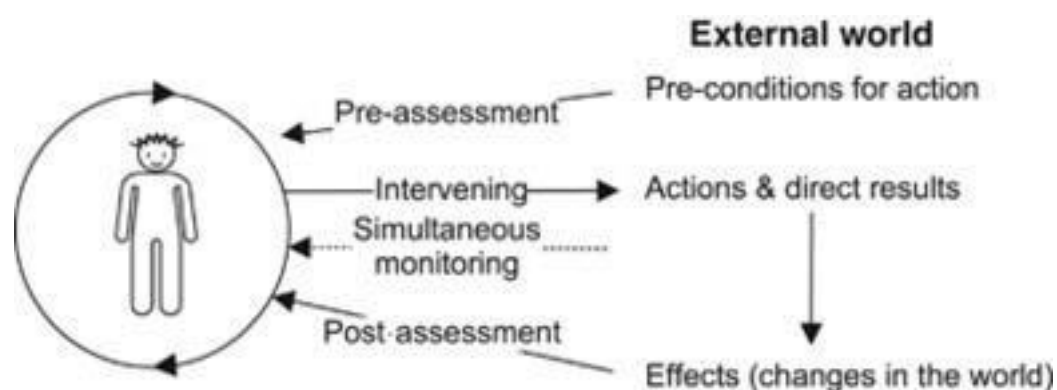


Figure 5: A CYCLIC MODEL OF HUMAN ACTION (GOLDKUHL 2012)

In this research I used quantitative and qualitative data to study how faculty and student's satisfaction with online learning is related to the institution, to the faculty and to the student.

Based on informed reading around the main research question, a group of variables and themes were identified, and the study tried to build a relationship between these variables to identify the factors that lead to an online teaching and learning satisfaction. Over the period of six months data were collected then it followed a predetermined process to be analyzed to test the hypotheses of this research: Faculty and students' satisfaction with the online experience during Covid-19 is influenced by similar factors.

The progression of this research is highlighted in the timeline in figure 6 below.

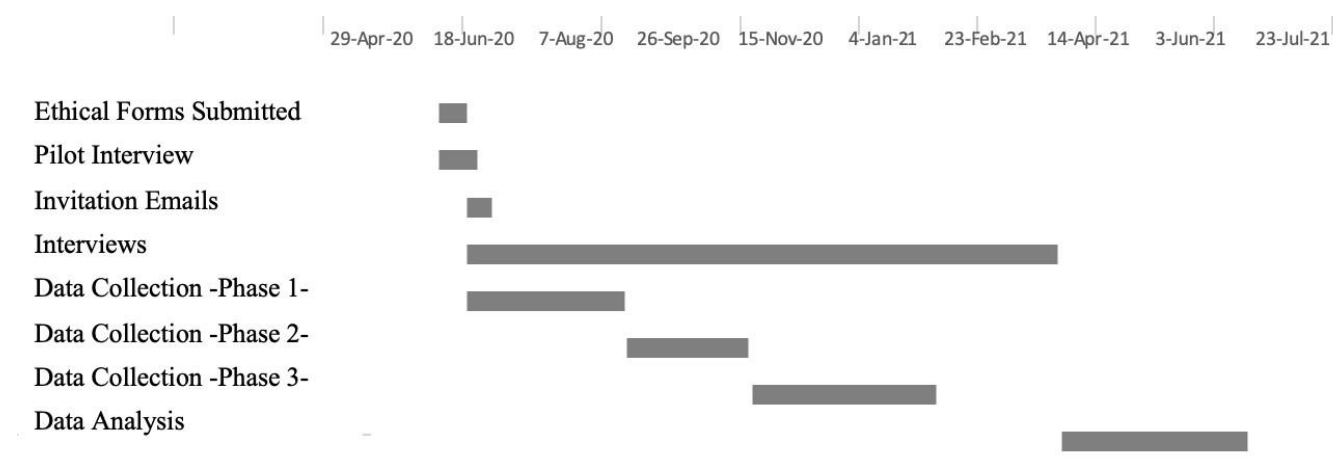


Figure 6: PROGRESSION OF THE RESEARCH TIMELINE

This also shows the data collection and states the order of events including the pilot study and the modifications after the analysis.

3.3 Research approach: Deductive and Inductive

The research approach is the second layer in Saunders "Research Onion". Using a theoretical framework in a research is the building block that limits the scope of that data and allows researchers to focus on specific variables. The theory helps in explaining the research issues that are being investigated (Abend 2013). I have conducted this research through the combined lenses of the crisis, change and job satisfaction theories. The two approaches that have

informed this study are: Inductive and Deductive. With the deductive approach I used quantitative data in addition to the literature review to test the underlying hypotheses of this research that there are common factors that influence faculty and students online experience during Covid-19.

The data were collected using surveys that helped me to answer specific questions and allowed me to compare my findings with other studies, and/or previous research. Questions were related to the relationships between faculty satisfaction with the online experience, student satisfaction, the role of technology and resources in creating that satisfaction, the role of the institution and the school, and from that several themes emerged such as:

- Faculty roles
- Faculty and students adaptation
- Online teaching and learning legislation, regulation, accreditation and policies
- Online teaching and learning flexibility, communication and engagement
- Online teaching and learning challenges, concerns and barriers faced
- Emotional distress related to online teaching and learning combined with the pandemic
- Pedagogical innovation in online teaching learning

The information collected from the interviews was used to triangulate with the data collected from the surveys to increase credibility and validity of the research findings.

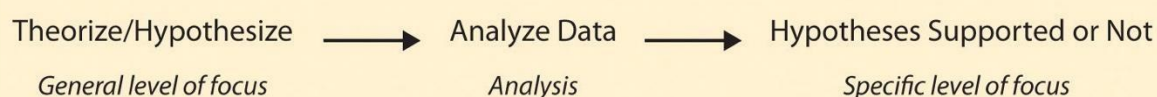


Figure 7: DEDUCTIVE APPROACH

Although this approach may be more sensitive to the projections done by the researchers (DeCuir-Gunby, Marshall et al. 2011), it increases the reliability of the findings.

As for the inductive approach, it works in a reverse order.

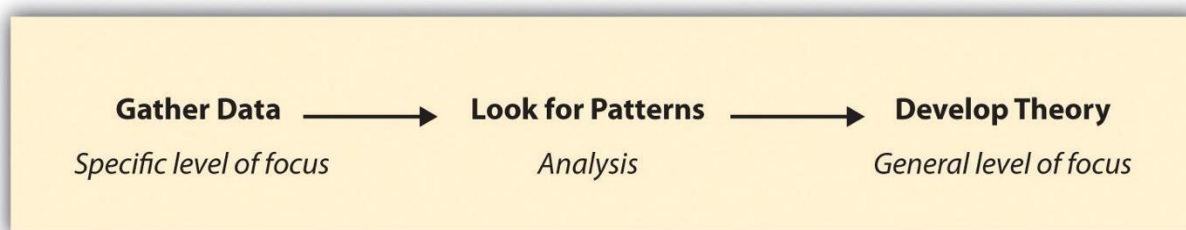


Figure 8: INDUCTIVE APPROACH

In the inductive approach, the researcher starts with a relevant theory as mentioned in chapter 2 (Literature review) and test it with the data collected. This type of investigation is used in qualitative research. Data are collected and a theory might be formed. For this research, data were also collected via interviews with Deans and faculty members of Business Schools. Inductive research can generate grounded theory by providing a deep theoretical description where organizational phenomena occur (Gioia and Chittipeddi 1991). Many scholars believe that the inductive approach has its limitations and does not meet high standards in research (Bryman 2003, Popper 2015) so combining both approaches will reduce the limitations of any of the approaches used alone.

Using surveys helped me in statistically analyzing my data to understand the relationships between the variables, draw a conclusion, and visualize my data using charts and graphs to interpret my findings. Using the interviews, I was able to interpret my interviewees inputs, find emerging themes and analyze the data. This created a triangulation that enhanced the credibility of my findings. Using these two rigorous approaches provides a comprehensive picture and

reduces the limitations of using only one approach. Thurmond (2001, page 253) states that “The intent of using triangulation is to decrease, negate, or counterbalance the deficiency of a single strategy, thereby increasing the ability to interpret the findings”, this is the way used to overcome the limitations. To be able to assess the quality of online learning, I have separated the issues related to the quality of learning effectiveness such as those put in place during emergency due to the crisis, compared to those set up in preparation for a period of online delivery. A more advanced aspect of this research was to see if those two experiences interlink. Business Schools have had to respond in a timely way to the Covid-19 emergency. Some schools have changed their pedagogy, rebuilt curriculum, revised rules and made difficult decisions about what is essential and what is not essential. Those changes have been made very quickly due to the crisis therefore it is essential to cover this research through the lenses of the crisis and change management theory. For example, many universities have adopted the pass or fail grading system. Moreover, other changes have occurred and transformed the norms in HEI such as Faculty/learners interaction. The online learning had to be rethought and I argue that the Covid-19 that hit the world transformed the education in HEI and there was a revolutionary change in the process of teaching and learning. As a result of the speed of these changes, the evaluation tools used in my research, the Sloan C and the TPACK might need to be transformed due to the many ideas that have emerged during the data collection. These will be further explored in later chapters.

3.4 Methodological Choice: Mixed methods

The Methodological choice is the third layer of the onion approach. For this research I have conducted a mixed methodology as it will expand the scope and breadth of my research and will reduce weaknesses of either research methodology alone. Using these methods have contributed to collecting data, cleaning, analyzing, and interpreting it from both quantitative

and qualitative instruments in one single study (Creswell and Clark 2017). With the quantitative approach, my research has focused on the variables such as faculty satisfaction, student satisfaction, the faculty role, the role of the institution and the school, and the flexibility and engagement in online teaching. These variables have emerged from the surveys and where appropriate to be used as scales for analysis. The qualitative approach focused on interpreting and describing themes that have emerged from interviews. In such a mixed methodology both the quantitative and qualitative methodologies, helped in collecting and analyzing data, integrate the findings and draw conclusions (Tashakkori and Creswell 2007). Using multiple sources of data will create a triangulation that will help me in analyzing the data and contributing to new knowledge and understanding in the area of online teaching and learning in higher education.

3.5 Research Strategy

The research strategy is the fourth layer of the onion approach. There are several research strategies used by researchers to plan their study and acquire necessary knowledge. The experiment, the survey, the case study, the action research, the grounded theory, the ethnography, and the archival research, all have advantages and disadvantages. The challenge is to identify and select the most appropriate strategy to address the research questions.

The researcher chooses the strategy that aligns with the topic (Benbasat, Goldstein et al. 1987). The most suitable strategies used for this research were the Grounded Theory and the Survey. Combining a quantitative and qualitative perspective in the research design had the primary purpose of attempting to develop a new theory since Covid-19 was a new phenomenon affecting education and not a lot was known about its impact.

3.5.1 Grounded Theory

Grounded Theory allows you to combine the study of several comparison groups. It's derived from data and illustrated by the characteristics of data (Glaser and Strauss 2017). This is a research methodology used in qualitative research and it helps developing a theory from rigorous analyses of empirical data (Charmaz and Belgrave 2007). It is not focused on a theoretical framework, but it aims at developing new "theory" grounded in data collected through interviews for example (Dunne 2011).

The intention of this research was to rigorously observe and collect data that will lead to generalization therefore the path of grounded theory inquiry was chosen. The pilot interviews responses and the feedback given to me by the interviewees helped to explore additional topics that I did not think of in the original interview. I wanted to derive a theory about the faculty and students satisfaction with online learning and define the factors that contribute to such a satisfaction. Looking at common themes and patterns have helped in developing appropriate interpretations of the data. One way of collecting my data was through conducting interviews. Grounded theory was used to code, analyze and interpret the data collected from those interviews.

3.6 Research time Horizon: Cross sectional study

The research time horizon is the fifth layer of the onion approach. Research progresses through sequential steps and follows certain timeline. According to Cooper, Schindler et al. (2006) tasks accomplished in research follow defined steps and specific order. As mentioned by Saunders, Lewis et al. (2009, page 129) one layer in the research onion process is the time

horizons. Some researchers follow a longitudinal study while other follow a cross-sectional study. For the purpose of this research, I have used a cross sectional study.

3.6.1 A cross sectional study

In a cross sectional study, the researcher examines different individuals at the same time. In this study I have examined faculty and students at one specific point in time which was Covid-19.

Figure 9 below shows the difference between Cross-sectional study and Longitudinal Study.

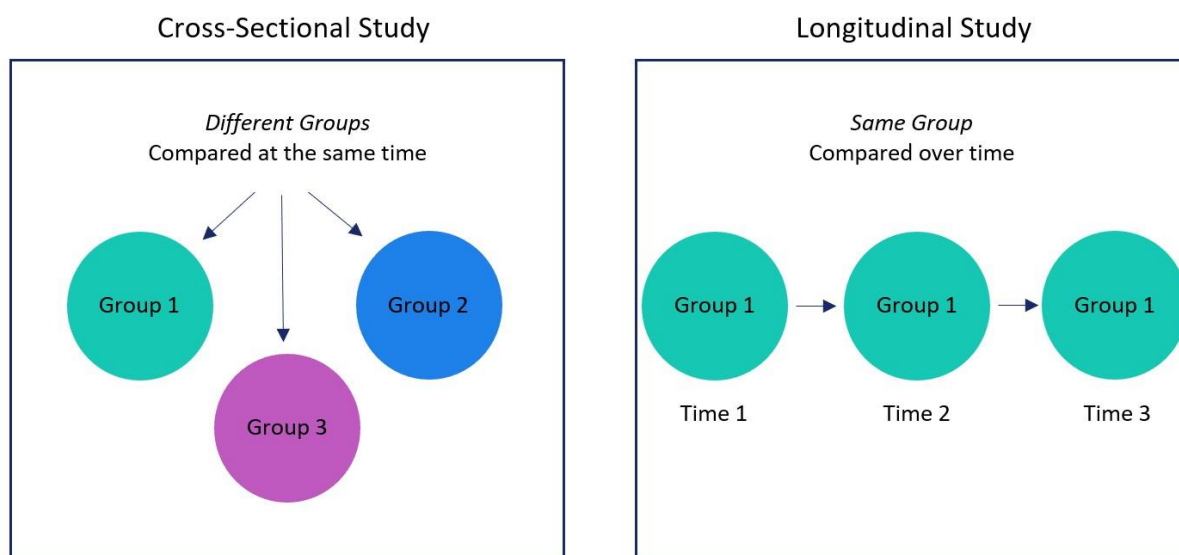


Figure 9: retrieved from <https://www.scribbr.com/methodology/longitudinal-study/>

Data in this research were collected after the initial phase of the 'lockdown' in June 2020 as shown in Figure 6 page 64 "progression of the research timeline". I had to wait for the ethical approvals (Appendix 1) before starting the data collection, thus, I was able to capture the first stage of professional change within the workforce of HEIs during phase 1 (June –August 2020). The time frame of the data collection was between June 2020 to January 2021 for the surveys and June 2020 to March 2021 for the interviews. This has allowed me to capture data from the Spring semester when the shift was not planned for (Phase 1), then in the summer when people

got used to the idea (Phase 2) and had some time to think it through, and then again in the Fall semester (Phase 3) when Covid-19 second wave continued, and universities stayed in the online mode. This means that the data were collected through a 3-wave phased cross sectional study in which 899 surveys were collected and 30 interviews conducted. This gave insight into how variables changed over time, and allowed me to do some initial analysis to further inform questions during later phases of the study and to try and respond to an ever changing situation. Singer, Willett et al. (2003) noted that at one point we cannot observe any change in individuals; Adopting a cross sectional study approach ensured I could understand how my variables changed over time in a more accurate way. For example, the institution's support over the different phases increased faculty and students satisfaction with the online teaching and learning as mentioned by some of the interviewees and in the open ended responses of the surveys. This was mainly due to the fact that institutions adapted to the Covid19 situation and moved from a crisis phase to a more planned phase. Using this path in data collection, helped to examine the changes that occur and explain the different patterns and themes that have emerged.

3.7 Data Collection and analysis

Data collection is the sixth layer of the onion approach. Researchers in social science use different ways in collecting data. Primary data are collected for a specific study or problem at hand; this same data can then be used by other researchers and will be called secondary data (Hox and Boeije 2005). Primary data collection for this study were conducted through quantitative surveys distributed to faculty and students, and through qualitative interviews done with faculty and professional staff.

3.7.1 Using Surveys as a quantitative research approach

Using surveys in research can help to generate knowledge if data gathered is clearly collected, analyzed and then interpreted (Butts 1983). For the purpose of this research, I have adopted a survey strategy to collect data from faculty and students who were part of my sample universities and who experienced online teaching and learning during Covid-19 pandemic.

As mentioned in Chapter 1 page 17, I have decided that my research population would be Faculty and Students who belong to my sample of Business Schools which fall under the following criteria:

1. Accredited Business Schools by the Association to Advance Collegiate Schools of Business (AACSB)⁴.
2. The School is an Academic unit of a parent larger private university from which derives its degree-granting authority.
3. The School is in one of the regions: The Americas, Asia Pacific, EMEA (Europe, Middle East and Africa).

⁴ <https://www.aacsb.edu/>

Using my AACSB network and searching online I was able to find 169 universities that satisfied the above mentioned criteria. Choosing Business Schools was also convenient because of the close proximity of accessing such schools from my network. It was clear to me what

type of schools to choose based on the criteria I listed. My sample was also purposive since I knew exactly what schools suit the purpose of my study. From the 169 universities in my sample I was able to email 112 universities the remaining 58 universities were unreachable either because I was not able to find a contact details for their Business School or the emails have bounced back. Each university contacted received two separate links: one to be shared with faculty and one to be shared with students. An invitation email sample can be found in Appendix 2. For confidentiality reasons each university name was change to a code for example: UNI1.

To measure faculty satisfaction, Online Faculty Satisfaction Survey (OFSS) scale has been adopted from Bolliger and Wasilik (Bolliger and Wasilik 2009). Bolliger and Wasilik found that faculty and student success are closely related. In their research they have identified that faculty and student satisfaction is associated with students, faculty, and institution satisfaction. The OFSS scale showed high reliability and validity (Cronbach's $\alpha = 0.85$). The OFSS was also used in a research by Hodges, Way et al. (2013) and showed high reliability and validity (Cronbach's $\alpha = 0.921$). I will use 34 of the 39 questions in the OFSS survey, these items are Q12-Q19 that I have put in a matrix format to measure online teaching experience for faculty and online learning experience for students during Covid-19. So, from the quantitative methods and using these surveys will derive the variables such as:

The level of interaction with student/faculty online, the flexibility provided, the engagement, faculty satisfaction, student satisfaction, and the role of technology and resources in creating that satisfaction and its reliability, the role of the institution and the school. The same themes will emerge from the interviews. All the instruments used in my research collected similar data related to faculty and students online experience response during the initial emergency phase

of covid and how moving away from the immediate response emerged opportunities related to blended learning, legislations, and other online opportunities.

Survey links were sent by email to deans of schools belonging to my sample population. The schools distributed the links to their faculty and students. Separate surveys were distributed to differentiate between faculty and students' respondents. Both surveys had the objectives of collecting the views of faculty and students and get their insights regarding their experience with online teaching and learning and their overall satisfaction. The surveys were designed and distributed via Google form. This method of data collection became popular because it is very cost and time efficient (Couper 2000, Dillman 2011). The surveys had the objective of understanding experiences of online teaching and learning that were either good or bad, and maybe risky during Covid-19 for both students and faculty and study their satisfaction and any challenges faced. I wanted to understand why in some cases faculty and student adapted to change, why faculty and students embrace or did not embrace online teaching and learning and whether this had an impact for their future decision in choosing online teaching and learning if they had the option not to. Taking into consideration that HEI resist change, one would question why during emergency some adapted so quickly. I wanted to study whether in good cases we can relate to the presence or absence of:

- the university support
- the technological support
- the motivated faculty/students

This has helped me in building a robust picture of what influences good and bad online teaching and learning. Also, what the impact will be on students and faculty and the need for the online teaching and learning to be accepted and supported.

The data collected helped also in analyzing the use of emerging technology in online Teaching and Learning and its impact on pedagogical innovation. The whole study had the objective to provide an understanding of whether or not online teaching and learning will contribute to sustainability of HEI especially that we have seen an increase in universities facing financial issues during the pandemic.

According to Van Selm and Jankowski (2006) online surveys have many advantages such as convenience for the respondents who can access the survey link easily and enter the data electronically, in addition to the absence of interviewer bias. Online surveys are also less costly, easy to design, deliver, collect, clean and analyze responses. Van Selm and Jankowski (2006) add that there are three main ways to electronically share the survey: Send it in an email message as an attachment, email it with a hyperlink or place it in a communication environment such as on a webpage. For this research I have designed the online survey in Google form and shared the link with all the population in my sample. The Google form link was shared in the body of the email that I have sent to the deans (See Appendix 2). No hard copies were distributed as during the data collection phase most of the world were in lockdown mode due to Covid-19 and it was recommended to take appropriate social distancing measures to reduce the risks of getting infected by the virus.

The collection of data from Business Schools reflects my position working at a Business School at that time and having a wide network with AACSB members and accredited universities. I was ideally placed in the same network as my sample; moreover, the timing of my data collection was ideal as it allowed me to collect data at different stages of the pandemic.

The surveyors fell under one of two categories: Faculty or Students. No names were collected. The self-administered survey was disseminated to measure the relationship between several

variables. The surveys include five structured scales which demonstrate reliability and validity in previous studies; Seven questions to collect demographic data and three questions to collect household data.

As mentioned previously, this research was done during very challenging times and it was important for me to conduct it using inexpensive methods. The survey was developed and distributed using Google forms.

Two surveys were distributed: One directed to faculty, and one directed to students. Both faculty and students were part of a business school belonging to my sample.

Participants who have received the survey link had the option from the beginning either to voluntarily accept to take part of this research or to quit. The surveys consisted of four sections:

- Ethical consideration and Consent section- where the participants either consent to take part in this study or to quit. Also, at the beginning of this section participants had to agree on the below 9 statements:
 1. I have been given sufficient information about this research project.
 2. I understand that my answers will not be released to anyone and my identity will remain anonymous.
 3. I understand that all responses I provide for this study will remain confidential. When the results of the study are reported, I will not be identified by name or any other information that could be used to infer my identity. Only researchers will have access to view any data collected during this research however, data cannot be linked to me.

4. I understand that I may withdraw from this research any time I wish and that I have the right to skip any question I don't want to answer
5. I understand that my refusal to participate will not result in any penalty or loss of benefits to which I otherwise am entitled to.
6. I have been informed that the research abides by all commonly acknowledged ethical codes and that the research project has been reviewed and approved by the Institutional Review Board at the Lebanese American University and at Durham University.
7. I understand that if I have any additional questions, I can ask the research team listed below.
8. I have read and understood all statements on this form.
9. I voluntarily agree to take part in this research project by completing the following questionnaire.

My contact details were added below the above list to allow the participants to contact me in case they had any questions. Their privacy and anonymity were respected, and they were given information about the purpose of this research and that their input is confidential and voluntary.

- Demographic section (Q1-Q5) in both faculty and student survey- where the participants agreed or not to take part in the survey, answered questions related to their gender, age, educational level, employment status, (Q6-Q7) in the faculty survey asked about the years of experience, position, (Q8) in the faculty survey and (Q6) in the

student survey asked whether they have taught/learnt courses that were completely online or blended with face to face class time with students/teachers before Covid-19.

- Household section (Q9-Q11) for faculty and (Q7-Q9) for students- where participants answered questions related to whether they lived alone, if they had dependents or caring role at home and if they had a quiet place dedicated for work.
- Online teaching experience (for faculty) (Q12- Q16) and Online learning experience (for students) (Q10-Q12).The data collected in this section fell under 3 categories:
 - Issues related to students.
 - Issues related to faculty.
 - Issues related to the institution.
- (Q17-Q19) in the faculty survey and (Q13-Q15) in the student survey were open ended questions requiring short answers. Q20 in the faculty survey and Q16 in the student survey asked participants if they will enroll/teach an online class in the future if they have the option not to.(Q21) in the faculty survey and (Q17) in the student survey asked participants to check the factors that will contribute to their decision to teach/enroll in an online course.(Q22) in the faculty survey and (Q18) in the students survey, asked participants if they will teach/enroll in a blended course. (Q23) in the faculty survey and (Q19) in the student survey asked participants about the level of communication in online courses.
- (Q24) in the faculty survey asked participants if they want to receive the results of this survey, if their answer was positive than they had to enter their email in (Q25).
- Thank you message- This was the last message that participants saw once they submitted the survey.

In total the surveys were composed of twenty five questions addressed to faculty and nineteen questions addressed to students. Once they have completed the survey, the participants received a thank you message on the screen. Prior to sending the surveys I ran a pilot study to make sure that the questions were clear and well-constructed, there was no errors or misleading questions. The 5 faculty and 5 students that took part in my pilot found the surveys clear and easy to use. They had no comments except some minor spelling corrections.

3.7.2 Using Interviews as a qualitative research approach

The interviews were an effective method to gain entry and to establish the common factors that have contributed to the faculty satisfaction during Covid-19. Using interviews help in clarifying faculty experiences with Online Teaching during the pandemic. It is a way to engage participants in real time and get immediate information. Interviews are an interesting approach used in research to interpret and generate participants knowledge about their experiences (Schultze and Avital 2011). The success of the pilot interviews allowed me to follow the same approach during the actual interviews which have helped me to respond rapidly to the changing situation because of Covid-19. I have also followed a snowball sampling strategy with the interviews using the network of the interviewees. The interviewees were connected to the topic and expressed interest in receiving the findings. This has created an interaction between the researcher and the interviewee which has led to supplying referrals. Noy (2008) use of snowball sampling is an effective tool to collect information from “hidden population”. In this context, the interviewees supplied the referrals voluntarily and, in most cases, emailed them in advance. When collecting data through interviews, interviewees share their thoughts about a specific topic by answering questions that could be structured, semi-structured or unstructured. For this research the best option was to use semi-structured interview questions. This has provided

guidance to follow with the interviews using specific questions, leaving however some flexibility to elaborate on important ideas that have not been necessarily mentioned in the questions (Gill, Stewart et al. 2008). The interviews were carried out at the convenience of the interviewee. Due to the pandemic lockdown experienced when this research was conducted, most interviews were done virtually using Zoom, Teams or Skype.

For the qualitative data collection, it is important to have participants, in this case interviewees, who meet the purpose of the research. I have defined clear criteria for my sample: All my participants, students and faculty were part of an AACSB accredited school based on the criteria listed on page 17. The interviewees were either Deans or faculty members with administrative duties from my own network or they were nominated by the Deans or participants I have interviewed. They willingly accepted to tell their story and share their experience with the online teaching during the pandemic and they all agreed with the goal and the importance of conducting such a research. All interviewees were engaged in the topic and as mentioned earlier they expressed interest in receiving a copy of the findings.

There are several factors that come into play to support having a diverse set of interviewees participants who will contribute with valid results such as the relationship between the interviewee and the researcher that affects the interviewee's experience (Dennis 2014) and behaving admirably, treating interviewees with respect and accepting their responses (Goldblatt, Karnieli-Miller et al. 2011); hence, my sample contained Deans, Assistant Deans, Chairpersons, Assistant Chairpersons, Provost, Assistant Provost, VPs, AVPs and Directors.

As mentioned previously, interviews are used regularly in qualitative research. My interviews were semi structured questions where I allowed my interviewees at some points to express themselves in their own ways and pace. During the interviews new topics and concerns were

raised and this has allowed new themes to emerge during data analysis. According to (Patton 2002), in qualitative research where the researcher uses interviews, the analysis is supported by recorded transcription or by the research's notes derived from the interviews (Patton 2002:380–84). In any type of data collection, one should also consider the cost and the time involved in addition to the expertise required. I had permission from 29 interviewees to record the interviews, whereas only one interviewee refused and asked me to take notes.

I ran seven pilot interviews in June 2020. As Bryman (2016) has explained pilots give scope to be able to develop further questions in response to significant replies, and to explore other topics that may not have been a part of the original interview agenda. Those interviews were important to develop the appropriate flow of interview timeline and the construction of the closed questions at the end of the interview to cover demographic and household questions such as: gender, age, educational level, employment status, years of experience, position, whether they have taught online before Covid-19, whether they had dependent or a caring role at home, and whether they had a quiet place dedicated to work from home. These final questions were important as they helped me drawing conclusion to my interviews.

As mentioned earlier, 29 participants have allowed me to record the interviews. The first 3 interviews were recorded and transcribed verbatim. I tried uploading them to the NVivo transcribe application. NVivo is a qualitative data analysis application where interviews can be coded, organized and analyzed; However, generating those interviews transcripts on the application turned out to be unreliable. I decided to use the old fashion method of manually transcribing my interviews. This was definitely time consuming but more accurate. On average an interview took minimum four hours to be transcribed and one longer interview took more than five hours. Then I got introduced to Otter.ai which has proved to be a reliable technology that facilitated the transcribing process. I then worked on reading and re-reading all interviews

transcripts to determine the main categories to be used to code the data. Once I was satisfied with the choice of categories I then embarked into coding. The analysis of the transcripts was done using NVivo where I have created codes for the common emerging themes from the interview.

I have actually loaded NVivo on to my computer during the research design module at Durham before even starting my thesis. I had to enhance my knowledge on using NVivo as I was a novice, but I was able to find many tutorials provided by Durham on the students' platform. I created a project in NVivo under the name of "My Thesis". From the beginning I made sure to compare the data collected from the interviews. I coded the transcripts to make sense of the data according to what was mentioned by the interviewees. This has helped me to move through themes and generate concepts and ideas to build a picture right from the start to find similarities between all my respondents and this has helped me to create codes generated from other interviews. It was time consuming to go back and forth reading all my interviews more than once, but this helped me to understand my data and to highlight emerged codes and themes that I was able to link to the variables identified in the surveys. I also created layers of coding to make sure my data analysis was robust. All the interviews which I transcribed on a word document were then imported into NVivo. I then created the nodes in NVivo which represent the categories I have identified.

To conduct my interviews, an email was sent to the Deans of the business school in my sample inviting them to take part in my research or to assign a faculty member with administrative duties or an IT professional staff to be interviewed. In the invitation email I explained that this research was part of my Doctorate thesis at Durham University, "**Unlocked during lockdown: The impact of online learning on faculty and students satisfaction at Higher Education**

Institutions after Covid-19 pandemic”, and that I was conducting a series of interviews with faculty members who were involved in online learning during and possibly after Covid-19. I also explained that these interviews will help me to understand the impact of online learning during this crisis and the feelings and issues faculty had if any. It was clear in the invitation email that their participation in this study is voluntary (See Appendix 5). However, I assured them that their participation will be a valuable addition to my research and findings could lead to a framework that would help HEIs and faculty successfully applying and embracing the model of online learning. I offered them to receive a full written summary of the research and its findings as an incentive to take part in my study. Interviews were conducted either face to face or via online platform such as Zoom, Teams or Skype. I ran 7 pilots interviews for 3 female and 4 male faculty members with administrative duties. Minor suggestions were made during those discussions. The final interview schedule with dates and times can be found in appendix 6. The interview was divided into four sections. I started with an introductory section explaining the purpose of the research in investigating the impact of online teaching and learning on both faculty and students in business schools during the emergency phase of Covid19 and moving away from it. This will help to inform a new pedagogical framework for online teaching and learning that inform and support business schools worldwide to have a successful experience with such a mode of teaching. The interview included 15 open ended semi structured questions, and it ended with a demographic and household section, with 6 and 3 questions respectively. The four sections are as follows:

Section 1 Introduction to the research and signing the consent form (with or without the permission to record).

Section 2 Interview questions

Q1- Interviewee profile

Q2-3 Experience and training with online Teaching and Learning before COVID-19

Q4-5 Experience and training with online Teaching and Learning during COVID-19 and support at the university and school level.

Q6-9 Identifying students' knowledge and measuring their engagement in the online environment.

Q10 Factors needed to achieve successful online experience

Q11 Professional IT support

Q12-15 Online learning post COVID-19 and the pedagogical innovation

Section 3 Demographic questions

Section 4 Household demographic

The interviews, when consent was granted were all recorded using Voice Recorder application on my iPhone and Quick Time Player on my Mac laptop. I have decided to use 2 tools to record to be on the safe side in case one tool malfunctioned. I wanted to focus on the answers given by my interviewees and decided that recording would be better than taking notes. I did not want to stop the flow of the discussions while taking notes manually. Recording with the latest technology has a lot of advantages for both the interviewee and the interviewer. As Fasick (1977) mentioned this helps reviewing the content at a later stage and limits the need to use intuition in recalling the information. The recordings also certify that the interviews were conducted and that the data collected is accurate and was obtained during the interview process (Halcomb and Davidson 2006). It was also useful to have the recordings in cases where the meaning was not clear or there was ambiguity that needed clarifications. Furthermore,

transcribing was more accurate, and this was done prior to the analysis. Both recording tools used allowed for a high-quality recording. Files were then saved under “my interviews” subfolder in “my thesis” folder on my laptop. I made sure to keep the recording on until the last minute to capture all details given to me by the interviewees. This was a good strategy to follow as in many instances the interviewee ended up adding important data even after the actual interview. I tried whenever possible to transcribe the interviews as soon as I was done with them. This was not always possible since it was time consuming, and I have a full-time job. But I noticed that immediate transcription helped me in retaining the knowledge shared and reducing the errors that could lead to misinterpreting the information. During the transcription process, I was making sure to clearly type the information given to me as it is without making any interpretation. This technique helped in reducing any bias and allowed me at a later stage to reflect on the data and to adequately represent it during the analysis.

A challenge in any interview is the risk of the interviewer’s effects on the responses of the interviewee (Tashakkori et al, 1998, p102); That’s why I have made sure not to interrupt my interviewee or give any verbal feedback that might direct their responses. I did not show any sign of agreement or disagreement to their statements. Although my questions were set in advance, which might assume the use of “interview guide approach” (Kallio, Pietilä et al. 2016), the questions were not shared in advance with the interviewees. However, in a successful interview process the interviewee and the interviewer should be able to communicate and interact dynamically (Hardey 2008) to create an appropriate narrative from which will emerge the relevant themes. This interaction should be done to a certain extent without allowing the discussion to go off topic.

3.2.1.1 Sampling strategy

The interviews were conducted from June 2020 to March 2021. As mentioned earlier, I have sent emails to the Deans of the Business Schools in my sample inviting them to be part of my research and asking them to nominate a faculty member to be interviewed. One challenge was that not all Deans replied to my email, so it was logical to use a snowball sampling approach. Using this method when it is difficult or challenging to access participants with the relevant target characteristics is convenient and can lead to a good response (Naderifar, Goli et al. 2017).

After each interview, I followed a snowball sampling strategy by asking my interviewee if they can refer me to someone in their network; I made sure that the referee is working in one of the universities in my sample. This snowball sampling strategy has allowed me to build up my interviewees population and to approach my interviewees easier. It has also proved effectiveness as it helped me in increasing my network with the interviewees' connections whom they have nominated to contribute to my research. This actually started early on in my research with one Dean who happens to be as well a member in one of the AACSB advisory boards. This Dean volunteered to contact his acquaintances in other Schools, and he made sure they fall within my sample.

3.2.2 Data demographics

All the instruments used in my research contributed in collecting similar data related to my target population of faculty and students online experience response during the initial emergency phase of Covid-19 and how moving away from the immediate response emerged opportunities related to blended learning, legislations, and other online opportunities. Invitation to be part of this research were sent to 169 universities that belonged to my defined sample. In total 899 participants (Faculty and students) contributed to my surveys and thirty (faculty and staff) contributed to my interviews including 7 pilot interviews.

Table 2 and 3 below summarize the number of male and female participants that took part in the interviews and in the surveys.

Table 2: Number of male and female participants that took part in the interviews

Interviews	Male	Female	Other	Total
Pilots	3	4	0	7
The Americas	1	1		2
Asia Pacific	6	1		7
EMEA	10	11		21

Demographic Characteristics of Faculty respondents	N	Percentage
Sex		
Prefer not to say	1	0.3
Female	203	62.5%
Male	121	37.2%
Demographic Characteristics of Students respondents	N	Percentage
Sex		
Female	301	52.4%
Male	270	47%
Prefer not to say	3	0.5%

Table 3: Data Collection Participants

The objectives of the data collection is to study:

1. The extent to which Covid-19 impacted faculty and students satisfaction in online teaching and learning and saved or added risks to the academic year.
2. The extent to which online learning will impact faculty and students satisfaction in HEI in the future and whether HEI hierarchies will cause resistance to change in embracing the new model of teaching and learning.
3. The impact online teaching and learning will have on faculty and students satisfaction.

As for the interviews my participants were Deans and faculty members. Names of any surveyors or university that appeared during the data analysis have been anonymized in order not to conceal any identity. All the interview data has been coded to correspond to a specific interviewee and each university in the sample was given a code as well. The details of the data profile of both the interviews and the surveys are located in appendix 6,7 and 8. Appendices 7 and 8 contain demographic, professional, and household information of surveyed faculty and students. Appendix 5 contains the interview questions, appendix 3 is the Faculty Satisfaction Survey, appendix 4 is the Student Satisfaction Survey.

3.8 Ethical considerations

Key ethical issues were respected throughout my research. Privacy of all participants has been respected in both surveys and interviews. The surveys were anonymous, and surveyors filled them out at their convenience. As for the interviews all names were coded. Both surveyors and interviewees were given the option at any time to withdraw from the study. Their participation was voluntary, and they were not obliged to answer any questions. Participants did not receive any reward to encourage them to take part in my study. I have clearly communicated the relevance of the research and ensured confidentiality and anonymity.

Before starting the data collection process, I made sure to seek ethical approvals from Durham university where I am doing my doctorate and the Lebanese American university where I was working during the time of this research (see appendix 1). Below the approvals granted:

DUBS-2020-06-11T10:54:03-wchz36

Date of ethical approval: 11, June 2020.

IRB #: LAU.SOB.JS1.2/Jul/2020

Date of ethical approval: 02, July 2020.

3.9 Limitations of the research

This research has some limitations. The time frame used has allowed me to answer the question raised at the Business school level. More research needs to be conducted in the future to cover other schools in HEIs. Findings are limited by the convenience and purposive sample techniques which were used to secure participants who were all part of a Business School. The perception of faculty and students from other schools are needed to gain a more detailed understanding of faculty and students' satisfaction in online teaching and learning. Another challenge in my research was to address questions about the long-term significance of the results and ways that these will inform learning agendas during and after the period of the crisis. A further challenge was to be sensitive and adaptive to both students and professional staff experiences during data collection when many faced uncertainty, stress, redundancy, and significant change. These aspects were considered, and therefore, I have made sustained effort to ensure such needs are met through the scope of the entire research. The focus of this research is on the online framework Business School should adopt for a successful online or hybrid

mode of teaching; therefore, the future of this research might be more challenging if the social research carried will generalize its findings to other university entities.

Chapter 3 Summary:

This chapter provided the research methodology which I used in this thesis. I have adapted the 'research onion' approach and explained the research philosophy, the research approach, the methodological choices, the research strategy, the time horizon and the data collection and analysis. Finally, I included in this chapter the ethical considerations and limitations of this research.

Chapter 4: Quantitative Findings

4.1 Introduction

This chapter reports the quantitative data collected from the satisfaction surveys administered to both faculty and students between the period June 2020 to January 2021 as outlined in chapter 3. Faculty are defined as staff in the Business School who taught online during the pandemic and who might also have been involved in administrative tasks. The quantitative data were synthesized and analyzed using SPSS and R. These data capture variables affecting faculty and student satisfaction with online teaching and learning in higher education during the Covid-19 pandemic. Data were collected from a total of 325 faculty and 574 students totaling 899 responses analyzed. The findings present the:

- general faculty satisfaction with online teaching during the pandemic
- correlation between the role faculty played in the online environment and their satisfaction
- correlation between faculty satisfaction and the institutional support
- correlation between faculty satisfaction and their students' satisfaction
- correlation between students' satisfaction and the flexibility and engagement of the online teaching and learning environment

4.2 Faculty Survey Sample

Yin (2003) defines data analysis as a set of processes which starts by examining the data, then grouping, testing, and combining the results of both quantitative and qualitative analysis when relevant. In this study we used both exploratory and confirmatory analysis of the data

to identify new relationships and test the hypotheses. I start this chapter by analysing the faculty survey sample.

4.2.1 Faculty Sample Demographics

The sample for the faculty satisfaction survey consisted of faculty who were engaged in online teaching during the pandemic and who were working across multiple AACSB private business school affiliated to a university. One hundred and twelve business schools were contacted by email. After cleaning these data, a total of 325 respondents out of 345 were used for analysis. The 20 responses which were deleted included incomplete records, or the respondents did not agree to take part in the survey. The final sample of respondents was 63% female and 37% male. Of those respondents 28.3% and 16.5% respectively have previously taught classes that have combined an online experience with face to face or have taught classes that were completely online pre-pandemic; 55.3% of faculty report a face to face only experience. Of the final sample, 49.5% have between 16-20 years of experience and 40% were at the Associate Professor rank. Faculty years of experience ranged from 0-26 and more years of experience. These results are summarized in Table4 on page 96. Table 4 shows also that faculty with 15 years or less experience have more combined experience with the online and blended mode than faculty with more than 16 years of experience. The table shows that 71.5% females and 88.9% males faculty with 5 years or less experience have a combined online and blended teaching experience. On the other hand, faculty with 26 or more years of experience, 50% of females and 30.8 % of males have a combined online and blended experience. So we conclude that faculty with 15 years or less of teaching experience have more experience with blended modes of teaching, while faculty with more years of experience have more face to face experience.

Of the faculty respondents, 9.8% were full time without tenured track, 14.2% full time tenured and 51.7% full time track but not tenured. Faculty who held part-time positions represented 22.8% of the total survey respondents. The majority of the respondents 76% were full timers as evidenced in Table 5 page 99.

Have you taught courses that were completely online or blended with face to face class time with students before COVID-19?

Years of experience	Gender	Mode of teaching	Frequency	Percent	Valid Percent	Cumulative Percent
5 years or less	Female	Online	6	28.6	28.6	28.6
		Blended	9	42.9	42.9	71.4
		Face to Face	6	28.6	28.6	100.0
		Total	21	100.0	100.0	
	Male	Online	6	66.7	66.7	66.7
		Blended	2	22.2	22.2	88.9
		Face to Face	1	11.1	11.1	100.0
		Total	9	100.0	100.0	
6-10	Female	Online	2	10.5	10.5	10.5
		Blended	9	47.4	47.4	57.9
		Face to Face	8	42.1	42.1	100.0

		Total	19	100.0	100.0	
	Male	Online	1	12.5	12.5	12.5
		Blended	4	50.0	50.0	62.5
		Face to Face	3	37.5	37.5	100.0
		Total	8	100.0	100.0	
11-15	Female	Online	15	57.7	57.7	57.7
		Blended	1	3.8	3.8	61.5
		Face to Face	10	38.5	38.5	100.0
		Total	26	100.0	100.0	
	Male	Online	5	41.7	41.7	41.7
		Face to Face	7	58.3	58.3	100.0
		Total	12	100.0	100.0	
16-20	Female	Online	32	30.8	30.8	30.8
		Face to Face	72	69.2	69.2	100.0
		Total	104	100.0	100.0	
	Male	Online	22	38.6	38.6	38.6
		Blended	3	5.3	5.3	43.9

		Face to Face	32	56.1	56.1	100.0
		Total	57	100.0	100.0	
21-25	Female	Online	1	6.7	8.3	8.3
		Blended	3	20.0	25.0	33.3
		Face to Face	8	53.3	66.7	100.0
		Total	12	80.0	100.0	
		Missing	3	20.0		
		Total	15	100.0		
	Male	Blended	10	45.5	45.5	45.5
		Face to Face	12	54.5	54.5	100.0
		Total	22	100.0	100.0	
26 or more	Prefer not to say	Face to Face	1	100.0	100.0	100.0
	Female	Online	1	5.6	5.6	5.6
		Blended	8	44.4	44.4	50.0
		Face to Face	9	50.0	50.0	100.0
		Total	18	100.0	100.0	
	Male	Blended	4	30.8	30.8	30.8

	Face to Face	9	69.2	69.2	100.0
	Total	13	100.0	100.0	

Table 4: Crosstabulation Gender, Years of experience and Online experience

Demographic Characteristics	N	Percentage
Sex		
Prefer not to say	1	0.3
Female	203	62.5%
Male	121	37.2%
Years of Experience		
5 Years or less	30	9.2%
6-10	27	8.3%
11-15	38	11.7%
16-20	161	49.5%
21-25	37	11.4%
26 or more	32	9.8%
Position		
Full Professor	63	19.4%
Associate Professor	31	9.5%
Assistant Professor	130	40%
Senior Instructor	42	12.9%
Instructor	17	5.2%
Senior Lecturer	27	8.3%
Lecturer	15	4.6%

Employment Status		
Full time- tenure track but not tenured	168	51.7%
Full time- None tenure track	32	9.8%
Part Time	74	22.8%

Table 5: Faculty Satisfaction Survey Demographics

4.2.2 Faculty Household

The survey was being conducted from April 2020 to February 2021, during the period of home confinement decreed by more than 90 countries with more than 3.9 billion people asked to stay home by their governments (Sandford 2020). Due to the fact that faculty were required to work from home during the lockdowns, thus the household questions were designed to ascertain whether they lived alone, had a caring role, or had a dedicated work space, all of which could affect their performance. The majority (91%) of faculty reported not living alone; 36% had a caring role that required them to take care of someone at home; and 89% had a quiet place at home dedicated for work.

4.2.3 Faculty Survey Analysis

Faculty satisfaction is not an easy issue to explain, and it can be triggered by many factors. Hagedorn (2000) suggests that faculty satisfaction is mediated by demographic variables in addition to environmental variables. This study analyses faculty satisfaction during the Covid-19 pandemic. The sudden shift to online teaching put faculty under pressure as in most cases the institutions were not set up in a way to make it easy for faculty to shift. The role of faculty in online teaching is instrumental in the success or failure of the learning experience (Bocchi, Eastman et al. 2004). One interesting finding is that 74% of faculty respondents felt neutral

about their online teaching satisfaction during Covid-19. This is an interesting aspect that can be due to the fact that faculty did not receive enough support or training during the crisis and they had their own personnel concerns and stress since they were surrounded by the uncertainties of the spread and impact of the virus.

Faculty satisfaction in the online environment is influenced by several factors. Bolliger and Wasilik (2009) categorized these factors under 3 groups:

- a) Students
- b) Faculty
- c) Institution

4.2.3.1 Faculty Survey - Student factors

There are several student factors that motivate faculty in the online teaching environment. Teaching online allows faculty to reach out to students who are distributed all over the world. Classes can take place any time using different tools and methodologies (Yukselturk and Yildirim 2008, Daniel 2016, Dhawan 2020). Faculty feel motivated in the online environment as they tend to engage with their students using different communication techniques. Faculty who want to ensure that students are satisfied with the online experience need to spend time giving feedback, preparing for the course content, and teaching methods (Bolliger 2004).

4.2.3.2 Faculty Survey - Faculty factors

According to Sloan (2006), faculty teaching online are satisfied when they feel their work is being acknowledged and they are getting appropriate support and developmental opportunities. Their satisfaction is related to intrinsic and extrinsic factors. Students experiencing positive

learning outcome, collaborative opportunities, appropriate infrastructure, and use of technology and tools, are some factors that contribute to the satisfaction or otherwise dissatisfaction of Faculty with their online experience (Betts, 1998; Fredericksen et al., 2000; Hartman et al., 2000; Panda and Mishra, 2007; Simonson et al., 2009).

4.2.3.3 Faculty Survey - Institution factors

Having policies and appropriate guidelines will enhance faculty satisfaction (Bolliger 2004, Usop, Askandar et al. 2013, Sahito and Vaisanen 2020). Creating an online course requires not only appropriate tools and technology but also time especially during the design phase. Faculty role during the online experience is not limited to teaching but also, they have to be involved in designing and implementing their course (Anderson, Liam et al. 2001, Rapanta, Botturi et al. 2020). This is time consuming, and institutions play a crucial role in providing the necessary time, the proper compensation and the adequate training and support. It was also identified that a lack of institution support for faculty teaching online, can lead to burnout and this might affect the quality of their teaching which will also reflect on their students (Hogan and McKnight 2007).

4.2.4 Faculty Survey- Descriptive Statistics

Table 5 displays the means and standard deviations of the scores for the satisfaction questions. The standard deviations, a measure of variability of the scores around the mean, were relatively minor.

Item	Code	Mean	Std. Deviation
1	FSS1	3.09	1.132
2	FSS2	3.98	0.81
3	FSS3	3.87	0.679
4	RFFS4	3.63	1.069
5	FFS5	3.75	0.806
6	RFSI6	2.25	0.911
7	FSS7	4.39	0.898
8	FFS8	3.74	0.985
9	FSG9	3.35	0.816
10	FSS10	3.82	0.792
11	FSS11	3.98	0.648
12	FSS12	2.47	0.918
13	RFFS13	1.88	0.634
14	RFFS14	2.22	0.924
15	RFSI15	2.42	0.826
16	FSS16	3.83	0.663
17	FSS17	3.12	0.652
18	FSG18	2.88	0.642
19	RFG19	3.66	0.921
20	FSG20	4.55	0.754
21	RFFS21	3.44	1.133
22	FFS22	3.3	0.705
23	FFS23	3.66	0.919
24	FSI24	2.35	1.025
25	RFFS25	3.2	1.407
26	RFSI26	4.22	1.322

27	FSS27	3.3	0.903
28	RFSS28	2.49	1.067

Table 6: Faculty Satisfaction Survey Descriptive Statistics

The faculty survey include 2 items that test the general satisfaction of faculty with online teaching and learning. Item 9 “**I look forward to teaching my next online course**” and item 18 “**I am more satisfied with teaching online as compared to other delivery modes**”. The means for these items are 3.35 (SD=.816) and 2.88 (SD=.642) respectively.

4.2.5 Faculty Survey- Factor Analysis

An exploratory factor analysis using principal component analysis with varimax rotation served to reveal 7 factors in the Faculty Survey data. According to the original research scale of Bolliger and Wasilik (2009) 3 high loading factors were expected (Students, Faculty, and Institution). The factor analysis of the faculty survey resulted in 7 components while the factor analysis for the students’ survey resulted in 6 components. This means that for the faculty the main factors that are important are more differentiated than for students although the difference is not high. However, the identification of 7 and 6 factors is completely data driven. To further understand what these factors mean additional investigation and further interpretation was conducted on each question and to which factor it loaded.

The full data set analysis of the faculty survey resulted in 7 components as follows:

Items 1-,5,9-12,14,16-18,21-23,25, and 27 loaded on component 1 with item 21 cross loading on items 1 and 3. A careful interpretation of the questions reveal that the main focus is related to how faculty engage, interact with the student’s using technology and resources. Forcing SPSS to select 3 factors resulted in the same loading.

A careful interpretation for each factor was done as explained below:

Items loading on factor 1 are mainly focusing on the general online experience of faculty in terms of engagement or interaction with students, flexibility and the use of online resources and technology. All these items can be considered loading on student construct.

As for items loading on factor 2 these are 7,15,20 and 24 these are related to faculty feelings, and personal issues regarding time needed to prepare online, students accessibility and faculty compensation. These can be considered faculty dimensions. As for items 19,26 and 28 these are related to students' activities online, their evaluation and lack of motivation, these can be related to how the institution introduced the online courses and prepared guidelines and instructions to help students.

Some loadings on these subscales were complex and loaded on different factors than Bolliger and Wasilik (2009). Items 7 and 28 which loaded on the student factor in Bolliger and Wasilik (2009) loaded on the faculty and institution factor in this study respectively. After careful interpretation item 7 question **“I miss in person face to face contact with students when teaching online”** is related to faculty feeling “I miss” and therefore it makes sense that it loads on component 2 while item 28 **“it is more difficult to me to motivate my students in online environment than in the traditional setting”** could be linked to the lack of the institution support and guidelines during the crisis which affected student motivation so it loaded on the institution component. Faculty could have blamed their institution for lack of support as this was mentioned in many of the interviews in this thesis. Perhaps in the survey some faculty associated their inability to motivate students to a lack of their institution support and the sudden shift to online with no prior consultation with them. These two issues can be closely related. Of the 28 survey items, 18 items had loadings in excess of 0.4 on the student dimension.

Items 4 and 5 were under the faculty construct with Bolliger and Wasilik (2009) while they loaded on the student construct in this study . Item 4 **“I incorporate fewer resources when teaching an online course as compared to traditional teaching”** and item 5 **“The technology I use for online teaching is reliable”** can be closely related to students since they affect their learning outcome. Items 6, 8,13, did not load to any construct as item 6 **“I have a higher workload when teaching an online course as compared to the traditional one“**, item 8 **“I do not have any problems controlling my students in the online environment”**, and item 13 **“I have to be more creative in terms of the resources used for the online course”** are general items that can apply to any learning experience whether it is online, hybrid or face to face.

Items 14, 22 and 23 loaded with Bolliger and Wasilik (2009) to the faculty construct while they loaded to student construct in this study. Item 14 **“online teaching is often frustrating because of technical problems”**, item 22 **“My students use a wider range of resources in the online setting than in the traditional one”**, item 23 **“Technical problems do not discourage me from teaching online”**, all these items have an impact on the students and since the sudden move to online was done to make sure students continue with their learning, so the main focus was students then it makes sense that these items load on the student construct. Another item that loaded on student construct in this study was item 9 **“I look forward to teaching my next online course”** this can be due to the faculty satisfactory experience with the online and/or to the fact that they felt their students were satisfied. These items show that the main focus in the online experience during the pandemic was the student. Items 15 and 24 loaded on the institution construct in the original study and on the faculty in this study. Item 15 **“it takes me longer to prepare for an online course on a weekly basis than for face to face course”** this can be related to faculty experience with online teaching

and with technology, as for item 24 “**I receive fair compensation for online teaching**” this is also related to the faculty and how they perceive their online compensation if different then the face to face.

A summary of factor loading of the full data set of the Faculty Satisfaction Survey and the Faculty Satisfaction Survey questions can be found in Appendix 10 and 3 respectively. The table below shows the factors loading in Bolliger and Wasilik (2009) research and the faculty factor loadings in this study:

Construct	Bolliger and Wasilik Survey	Faculty satisfaction survey in this study
Students	1-3,7,10-12,16,17,21,25,27, 28	1-5,9-12,14,16-18,21-23,25,27
Faculty	4,5,8,13,14,22,23	7,15,20,24
Institution	6,15,24,26	19,26,28
No loading	9,18,19,20	6,8,13

Table 7: Faculty Satisfaction Survey Factor Loading

4.2.6 Reliability and validity

The OFSS is an established survey and has been used in several research studies and has well established content validity (Luongo 2018, Blundell, Castaeda et al. 2020, Blundell and Lee 2020). The total data set reliability was 0.87. The reliability for the subscale according to the grouping done by Bolliger and Wasilik was 0.8 for the student construct, 0.42 for the faculty construct, this is not a satisfactory value and 0.6 for the institution construct. A Cronbach’s alpha measure of internal consistency was computed to check for the reliability of the Faculty Satisfaction Survey in this study, the results are found in Table 7. Generally, a Cronbach’s alpha value greater than 0.7 is an indication of a reliable instrument. The Cronbach’s alpha in the Faculty Survey for Student scale (.9) proved to be reliable and Institution (.6) which is also reliable as the construct included only 3 items. The Faculty scale produced the lowest reliability

(.4), suggesting that the items included on that scale are not measuring the same thing and thus must be reevaluated for future studies. Based on the interpretation described above I have decided to group the items as per the below table 7.

Bolliger and Wasilik	Number of items	Cronbach alpha reliability coefficient	Faculty Survey Construct for this Study	Number of items	Cronbach alpha reliability coefficient
Students	15	0.8	Students	18	0.9
Faculty	7	0.4	Faculty	4	0.4
Institution	4	0.6	Institution	3	0.6

Table 8: Faculty Satisfaction Survey Constructs Reliability

Factors were extracted by putting questions into logical grouping. In the Faculty survey 18 items were grouped under Students, 4 were grouped under Faculty and 3 under institution. A representative sample item is provided for the Faculty Satisfaction Survey scales in Table 8.

Survey Scale and representative items	
Scale	Representative items
Faculty Survey	
<i>Students</i>	The level of my interactions with students in the online course is higher than in a traditional face to face class. My online students are actively involved in their learning.
<i>Faculty</i>	I miss in-person face-to face contact with students when teaching online.

<i>Institution</i>	My online students are somewhat passive when it comes to contacting the instructor regarding course related matters.
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Table 9: Faculty Satisfaction Survey Representative Items

4.3 Students Survey Sample

In the below section I analyze the data from the students satisfaction survey.

4.3.1 Students Sample Demographics

The sample for the student's satisfaction consisted of student who were engaged in online learning during the pandemic and who were enrolled in an AACSB business school in a private university.

After cleaning these data, a total of 574 respondents out of 580 were used for analysis. The 6 responses which were deleted included incomplete records or did not agree to take part in the survey. Among these respondents 52.4% were females and 47% males. Three respondents preferred not to reveal their gender. 80.8% of students were enrolled in an undergraduate program, while 1% and 15% were enrolled in a Doctorate or master's programs respectively. Regarding their employment status 78% were not employed and 12% had a part time job as evidenced in Table 9.

Demographic Characteristics	N	Percentage
Sex		
Female	301	52.4%
Male	270	47%
Prefer not to say	3	0.5%

Level of Education		
Doctorate	6	1%
Master's	86	15%
Bachelor's degree	464	80.8%
Other	18	3.1%
Employment Status		
Employed Full time	61	10.6%
Employed Part time	66	11.5%
Not employed	447	77.9%
Online Learning		
classes that have combined an online experience with face to face	265	46.2%
classes that were completely online	100	17.4%
Classes completely F2F	206	35.9%

Table 10: Student Satisfaction Survey Demographics

4.3.2 Student Household

Due to the lockdown Students were studying from home hence the household questions. 93.6 % reported not living alone, 65 % had a quiet place at home dedicated for work and 67.7% reported not having a caring role while 32.3% reported having a caring role at home.

4.3.3 Students Survey- Descriptive Statistics

Table 10 displays the means and standard deviations of the scores for the satisfaction questions. The standard deviations, a measure of variability of the scores around the mean, were relatively minor.

Student Survey			
Item	Code	Mean	Std. Deviation
1	SSF1	3.26	.573
2	SSI2	3.83	.787
3	SSF3	4.03	.746
4	RSSF4	2.52	.675
5	SSI5	3.83	.753
6	SSI6	3.68	.728
7	RSSS7	1.57	.787
8	SSF8	3.95	.807
9	SSS9	3.47	.722
10	SSF10	3.98	.787
11	SSI11	4.02	.767
12	SSF12	3.29	.616
13	SSF13	3.51	.698
14	RSSI14	3.60	.696
15	RSSS15	1.90	.861
16	SSI16	3.94	.857
17	SSF17	3.37	.653
18	SSS18	3.34	.657
19	RSSG19	2.50	.747
20	SSI20	4.10	.750
21	RSSS21	2.04	.791

22	SSS22	3.76	.760
23	SSS23	3.47	.705
24	SSI24	3.80	.736
25	RSSS25	2.09	.796
26	RSSS26	1.97	.859
28	RSSS28	1.80	.796

Table 11: Student Survey Descriptive Analysis

The Student Survey includes 2 items that test the general satisfaction of students with online teaching and learning. Item 9 “**I look forward to taking my next online course**” and item 18 “**I am more satisfied with learning online as compared to other delivery modes**”. The means for these items 3.97 (SD=.722) and 3.34 (SD=.657) respectively.

4.3.4 Student Satisfaction Survey-Factor Analysis.

An exploratory factor analysis using principal component analysis with Varimax rotation served to reveal 6 factors in the Student Satisfaction Survey data. As mentioned above the factor analysis of the faculty survey resulted in 7 components. This means that for the faculty the main factors that are important are more differentiated than for students although the difference is not high. To further understand what these factors mean additional investigation and further interpretation was conducted on each question and to which factor it loaded.

The full data set analysis of the student survey resulted in 6 components as follows: Items 1-3, 5 and 6, 8-13,17 and 18 , 20 ,22-24, loaded on Component 1. Carefully looking at the questions of these items reveal a focus on terms such as interaction, flexibility, communication, enthusiasm and creativity. Forcing SPSS to select 3 factors resulted in all these items to load on **component 1** which we will label as “**Student Coping with online**”.

Items 4,7,15,21,25,26,28 loaded on component 2 for both the 6 and 3 factor table. Carefully looking at the questions of these items reveal a focus on terms such as fewer resources, missing

face to face, longer time to study, concern, less motivation. **Component 2** will be labelled as **“Student concerns with online”**.

As for items 19 it loaded on component 3 in the 6 and 3 factor this item was “I was somewhat passive when it comes to contacting the instructor regarding course related matters” which does not fit in any of the above components. Items 14 and 16 did not load on any components as the first one is related to frustration with technical issues and the latter is related to general student satisfaction with the online communication tools. The Student Satisfaction Survey Factor Loading are summarized in Table 11.

Components	Students Satisfaction Survey
Student coping with online	1,2,3,5,6,8,9,10,11,12,13,17,18,20,22,23,24
Student concerns with online	4,7,15,21,25,26,28
Student passive	19
No loading	14,16

Table 12: Student Survey Factor Loading

A summary of factor loading of the full data set of the Student Satisfaction Survey and the Student Satisfaction Survey questions can be found in Appendix 10 and 4 respectively.

4.3.5 Reliability and validity

The total Student Satisfaction Survey data set reliability was 0.859. The reliability for the subscale according to the grouping done for this study was 0.9 for the Student coping with online construct, 0.8 for the “Student concerns with online” construct as shown in table 12 below.

Student Survey Construct for this Study	Number of items	Cronbach alpha reliability coefficient
Student coping with online	17	0.9
Student concerns with online	7	0.8

Table 13: Student Satisfaction Survey Constructs Reliability

Factors were extracted by putting questions into logical grouping. In the Student survey 9 items were grouped under Student general online experience, 7 were grouped under Student feelings with online and 6 under Student Concern with online.

A representative sample item is provided for each of Faculty and Students scales in Table 13.

Survey Scale and representative items	
Scale	Representative items
Student Survey	
<i>Student coping with online</i>	The flexibility provided by the online environment is important to me. My professor is actively involved in their learning.
<i>Student concerns with online</i>	It takes me longer to study for an online course on a weekly basis than for a face to face course. My participation level in the class discussions in the online setting is lower than in the traditional one.

Table 14: Student Satisfaction Survey Representative items

4.4 Examination of Hypothesis

Data analysis is presented according to each research question's hypothesis, followed by the results and the accepting or rejecting of the null hypothesis.

Hypothesis 1: Faculty are generally satisfied with online teaching and learning

In response to the question FSG18 "I am more satisfied with teaching online as compared to other delivery methods" 75% of the respondents were neutral. The number three was used as a critical value for faculty satisfaction, as three is a midpoint on a 5-point Likert continuum and is considered average satisfaction. Any number less than three is associated with dissatisfaction, while a number greater than three is associated with higher levels of satisfaction. Overall faculty online satisfaction reported a mean satisfaction of 2.88 (SD=0.650) on a 5-point Likert scale.

A t-test compared data with the null hypothesis revealed a t-test value of -3.361 and a p value < 0.001 , which is less than the researcher's significance of 0.05. The average satisfaction is not neutral (3) furthermore the sign on the t-test stat indicates that faculty on average were dissatisfied.

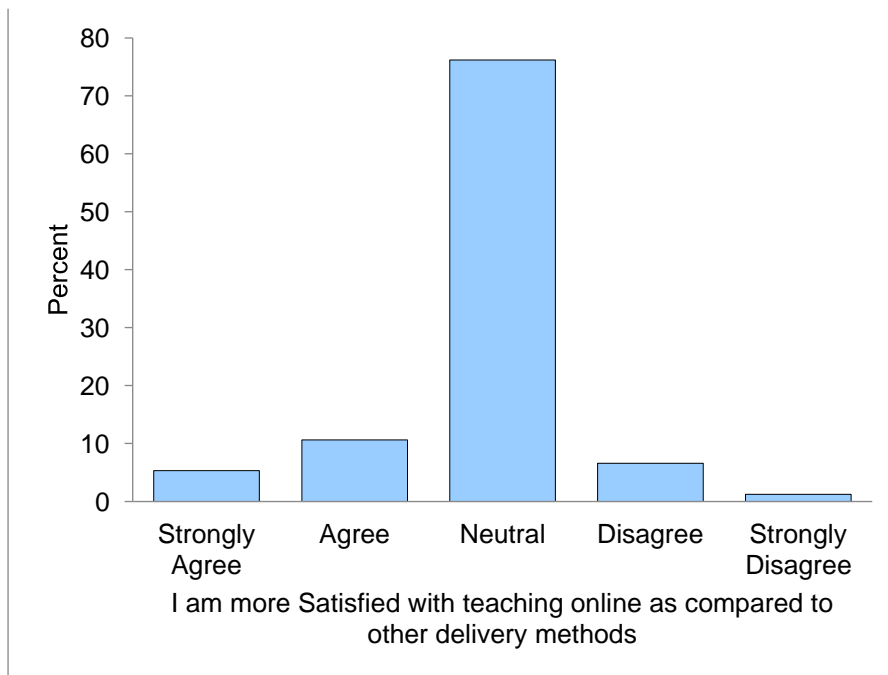


Figure 10: SATISFACTION PERCENTAGE WITH TEACHING ONLINE AS COMPARED TO OTHER DELIVERY METHODS

At the end of the survey faculty had the option to write an open response about what they least liked and what they most liked about their online experience. Of the 325 participants 248 completed the open response item for the “least like” and 44 completed the “most like” item.

Table 14 displays the 5 most reported “least” and “most” liked responses reported by faculty who taught online during the pandemic. The open responses largely support the survey data with the most liked being “flexibility” and the least liked being issues related to not seeing students such as “not seeing their facial expressions”, “cameras were off in most cases”.

Least liked online	Frequency	Most Liked online	Frequency
Not seeing students	66	flexibility	20
connectivity	49	Online tools	11

issues	44	New model of teaching	10
face	28	teaching	10
internet	28	innovation (opportunity to be innovative)	10

Table 15: Open Responses “Least” and “Most” liked factors for online teaching reported by Faculty

Participants indicated they value the ability to reach out to students anywhere anytime without being bound to a specific location. This also created more security as faculty felt safer from becoming ill or catching the virus as well since they did not have to put themselves at risk by meeting face to face during the pandemic. They also consider the variety of tools available as one of the most satisfying aspects of the online teaching. Using different tools helped faculty differentiating students and allowed more creativity; hence, more innovative opportunities. Many faculty members considered the online experience as a new model of teaching that give them the opportunity to be innovative and help them applying a pedagogy different than the traditional face to face. Faculty identified that online teaching is innovative and many of them cited that this innovation helps in creating a new pedagogy that will build bonds between them and the students. In addition to the above 5 mentioned “Most” liked factors faculty identified “Students” as an important factor that will make them satisfied with their online experience. As for the factors that contributes “Least” to the faculty satisfaction were the “not being able to see the students face to face and solve their issues” some of the issues stated were, reliability, internet connectivity and lack of engagement. It is worth noting that the frequency of “least likes” which can be associated to dissatisfaction is higher than the frequency of the “most likes” which align with our finding that faculty were on average more dissatisfied with their online experience.

A paired samples test was conducted to compare Faculty satisfaction in general with online teaching using FSG18 with the Faculty satisfaction in relation to the three elements students, personal experience, and institution. On average the general faculty satisfaction ($M=2.88$, $SD=.650$) was less than the faculty satisfaction with the three elements ($M=3.98$, $SD=.569$). This difference of 1.1, 95%CI[1.04,1.17] was statistically significant $t(317)$, p value < 0.001. Thus, the hypothesis H1 Faculty are generally satisfied with online teaching and learning is not supported.

Hypothesis 1a: Faculty who played several roles in the OTL experience during the pandemic were more satisfied with their online experience than faculty who only played the role of facilitator.

While no single question was asked on the survey to ascertain the role that the faculty played, this study used the faculty's previous experience with online teaching as a proxy for the role they played – assuming that those with previous experience likely stepped into the role of mentor, facilitator, or course designer, when the rapid transition of the pandemic occurred.

As such, the respondents were split into three sub-groups – those who had taught courses completely online; those who had taught in a hybrid mode previously; and those who had only taught face to face. A one-way ANOVA was undertaken to determine if there was a statistically significant difference in the mean satisfaction level across the three groups. The satisfaction level was derived on the basis of the respondents answer to question FSG18 “I am more satisfied with teaching online as compared to other delivery methods”.

The one-way ANOVA revealed that there was a statistically significant difference in the mean of at least one group ($F(2,313)=3.30$, $p=0.04$).

Tukey's HSD (honestly significant difference) test for multiple comparisons found that the mean value of FSG18 was significantly different between the face to face and completely online groups ($p=0.03$, 95% C.I. = [-0.41, -0.2]).

There was no statistically significant difference in the mean response for FSG18 between the completely online and hybrid groups ($p= 0.63$) nor between the hybrid and face to face groups ($p= 0.5$).

In order to test whether the faculty who had several roles to play in OTL, such as being more experienced in online delivery, were more satisfied than faculty with face to face experience only, an independent T-test conducted between the 2 groups revealed a statistically significant difference between the two groups, $t(192) = -2.7$, $p < .05$; These results indicate that faculty in the completely online group ($M = 3.01$, $SD = 0.593$) were more satisfied with online teaching than faculty in the face to face group ($M = 2.8$, $SD = 0.648$). Thus, H1a Faculty who played several roles in the OTL experience during the pandemic were more satisfied with their online experience than faculty who only played the role of facilitator, is supported.

Hypothesis 1b: Faculty satisfaction in OTL during the pandemic correlates positively with the institution support and training received.

A Pearson correlation coefficient was computed (Table 17) to assess the relationship between the 3 institution constructs as identified in this research items 19,26 and 28 and the satisfaction of faculty with online delivery FSG 18. The 3 items (19,26 and 28) were transformed into one by computing an average, this variable InstAverage was used to compute the correlation.

	N	Minimum	Maximum	Mean	Std. Deviation
FSG18	319	1	5	2.88	0.65
InstAverage	325	1.00	5.00	3.4554	0.82723
Valid N (listwise)	319				

Table 16 Descriptive Statistics

		Institution Support 3 Items	FSG18
InstAverage	Pearson Correlation	1	.177**
	Sig. (2-tailed)		.002
	N	325	
319			
FSG18	Pearson Correlation	.177**	1
	Sig. (2-tailed)	.000	
	N	319	319

Table 17: Correlations

** Correlation is significant at the 0.01 level (2-tailed).

The result shows that there was a positive correlation between the two variables, $r=0.177$, $n=319$, $p=0.000$. Overall, there was a positive correlation between InstAverage and FSG18 but the correlation is not linear which might mean that the efficiency of an institution in online teaching and learning does not only rely on the institution support but it relies on the faculty members themselves. Thus H1b Faculty satisfaction in OTL during the pandemic correlates positively with the institution support and training received, is supported.

Hypothesis 1c: Faculty satisfaction with online teaching correlates positively with students satisfaction with online learning.

This hypothesis was tested on one single institution who accepted to share the survey with their students and faculty. I have created different links for each 15 classes I was allowed to survey. Links were labelled Class1, Class2... etc. for the Students Satisfaction Survey. Each faculty of those 15 classes received a separate link for the Faculty Satisfaction Survey and this was labelled Fac1, Fac2...etc. In this way I was able to link Class 1 to Fac1 to test this hypothesis.

I have averaged Students Satisfaction Survey Item 9 “**I look forward to taking my next online course**” and item 18 “**I am more satisfied with learning online as compared to other delivery modes**” to get a total Student Satisfaction Average STDAVRG value and I did the same with the Faculty Satisfaction Survey Item 9 “**I look forward to teaching my next online course**” and item 18 “**I am more satisfied with teaching online as compared to other delivery modes**” to get a faculty satisfaction value FACAVRG. An independent-samples *t*-test was conducted to compare satisfaction scores between faculty and their corresponding students.

	<i>Total STDAVRG</i>	<i>Total FACAVRG</i>
Mean	3.33	3.38
Variance	0.32	0.85
Observations	15	15
Pearson Correlation	0.07	
Hypothesized Mean Difference	0	
df	14	
t Stat	-0.19	
P(T<=t) one-tail	0.42	
t Critical one-tail	1.76	
P(T<=t) two-tail	0.84	
t Critical two-tail	2.14	

Table 18: t-Test: Paired Two Sample for Means

The results as shown in Table 17 suggest that there is no statistically significant differences between faculty satisfaction and their corresponding students satisfaction. The compared data with the null hypothesis revealed a *t*-test value of -0.19 and a *p* value >0.001, which shows that there is no correlation in this case between students' satisfaction and Faculty satisfaction. This suggests that during the pandemic when the responses were collected students' satisfaction with online learning was not necessarily the same as Faculty satisfaction with online teaching. This might be due to the fact that students and faculty were busy with other concerns such as the pandemic impact, their health, the uncertainties they were living in. The no correlation result might also be due to the small sample size.

Thus, H1c Faculty satisfaction with online teaching correlates positively with students satisfaction with online learning, is not supported.

Hypothesis 2a: Students who cope with online due to its flexibility and for being actively involved will report higher levels of satisfaction

A Pearson correlation coefficient was computed to assess the relationship between the first students construct "Students coping with online" (SSF1, SSI2,SSF3,SSI5, SSI6, SSF8, SSF10, SSI11,SSF12, SSF13,SSF17, SSI20, SSS22, SSS23, SSS24) and the satisfaction of students with online teaching SSS18 and the fact that they look forward to take their next online course SSS9 (Table 20). The "Students coping with online" items were transformed into one AvgConstruct1 item by computing an average and was used to compute the correlation with SSS9 and SSS18.

	Mean	Std. Deviation	N
Avg. Construct 1	3.1145	.78082	557

SSS9	2.67	1.425	572
SSS18	2.52	1.322	572

Table 19: Descriptive Statistics

		Avg. Construct 1	SSS9	SSS18
Avg. Construct 1	Pearson Correlation	1	.459**	.464**
	Sig. (2-tailed)		.000	.000
	N	557	556	557
SSS9	Pearson Correlation	.459**	1	.390**
	Sig. (2-tailed)	.000		.000
	N	556	572	570
SSS18	Pearson Correlation	.464**	.390*	1
	Sig. (2-tailed)	.000	.000	
	N	557	570	572

** . Correlation is significant at the 0.01 level (2-tailed).

Table 20: Correlation

** . Correlation is significant at the 0.01 level (2-tailed).

The results in table 19 show there was a positive correlation with both variables, $r=0.459$, $n=556$, $p=0.000$ and $r=0.464$, $n=557$, $p=0.000$. Thus H2a Students who cope with online due

to its flexibility and for being actively involved will report higher levels of satisfaction, is supported.

Hypothesis 2b: Students who are concerned with online teaching experience due to lack of face to face contact, lack of communication and engagement in the online environment during the pandemic report lower levels of satisfaction.

A Pearson correlation coefficient was computed to assess the relationship between the second students construct “Students concern with online” (RSSF4,RSSS7,RSSS15,RSSS21,RSSS25, RSSS26,RSSS28) and the satisfaction of students with online teaching SSS18 and the fact that they look forward to take their next online course SSS9. The “Students concern with online” items were transformed into one AvgConstruct2 item by computing an average and was used to compute the correlation with SSS9 and SSS18.

	Mean	Std. Deviation	N
Avg. Construct 2	2.4669	.91826	574
SSS9	2.67	1.425	572
SSS18	2.52	1.322	572

Table 21: Descriptive Statistics

		Avg. Construct 2	SSS9	SSS18
Avg. Construct 2	Pearson Correlation	1	.286**	.154**
	Sig. (2-tailed)	.000	.000	
	N	574	572	572

SSS9	Pearson Correlation	.286**	1	.390**
	Sig. (2-tailed)	.000		.000
	N	572	572	570

SSS18	Pearson Correlation	.154**	.390*	1
	Sig. (2-tailed)	.000	.000	
	N	572	570	572

** . Correlation is significant at the 0.01 level (2-tailed).

Table 22: Correlations

** . Correlation is significant at the 0.01 level (2-tailed).

The results in Table 21 show there was a positive correlation with both variables, $r=0.286$, $n=572$, $p=0.000$ and $r=0.154$, $n=572$, $p=0.000$. The correlation is stronger with the fact that students look forward to taking their next online class.

Thus, H2b Students who are concerned with online teaching experience due to lack of face to face contact, lack of communication and engagement in the online environment during the pandemic report lower levels of satisfaction, is supported.

4.5 Thematic analysis of the open-ended questions for faculty and students

Thematic analysis of the open-ended questions for faculty and students. In both faculty and students' surveys, respondents were asked three open ended questions. The number of respondents who answered these questions is highlighted in the table below.

Open ended question	Number of faculty who responded	Number of students who responded
What do you like least about teaching/learning online	249	457
What do you like most about teaching/learning online	226	439
Is there anything else you wish to share	106	102

Table 23: Thematic analysis of the open-ended questions for faculty and students

Faculty disliked the inability to observe their students, the lack of reliability, and the difficulties associated with the internet connection. Additionally, the majority of faculty claimed that they did not receive adequate training, were overworked, and disliked seeing black boxes instead of their students' faces. As for what they liked most, is flexibility, tools used and also security of staying at home and not being exposed to the virus in addition to using a new teaching pedagogy. As for the question Q19 in the Faculty Survey (see Appendix 3) asking them to add additional things to share faculty mentioned AI is the future of online teaching, faculty will have a new role in teaching such as being a mentor, coach and even playing a role in designing the course. One faculty mentioned that universities should be better prepared for any new upcoming crisis, that was specific to their institution located in a turbulent MENA region.

As for students' responses to the open-ended questions, the least thing students liked about their online learning experience was also the technical difficulties they faced due to the lack of appropriate internet connection and resources. Many students stated also that they were overwhelmed with the amount of work given and they felt stressed to study in an environment

they did not originally pay for. As for the most thing they liked it was mainly flexibility and being safe at home. Q 15 in the Student Survey (see Appendix 4) asks, “is there anything else you want to share?” one student mentioned that “Online learning can have a major effect on students' mental health status and the increased pressure and workload might further affect the academic performance of students”. Several students mentioned the need to have proper legislations in their countries to recognize online certificates, have more communication and engagement, incorporate AI to have a better online experience, have office hours and timely feedback from their faculty. The thematic network of the open-ended questions can be grouped into 8 themes as per the below table:

Faculty	Themes	Students
Reliability Internet connection	Resources	Not enough hardware for all the household Internet interruption Power cut
Lack of training	Training	
High workload	Workload	Overwhelmed with tasks Stressed Mental health
Decisions made with no consultation No communication with administration Talking to black boxes online	Communication/engagement	Hard to reach some faculty No timely communication Need office hours and timely feedback and advising

Access the courses from anywhere	Flexibility	Can access the course from any place
No need to get exposed to the virus	Security	
Policies needed and laws in some countries	Legislation	Lack of legislation
AI is the future New faculty roles New mindset	Pedagogy	Use AI in the future

Table 24: Thematic Network of the open-ended questions

4.6 Additional questions

Faculty and Students were asked to respond to the following question: Will you teach/enroll in an online class if you have the option not to? If their answer was no then they were asked to provide “ Which of the following factors will contribute to your decision to be enrolled in a fully on-line course?” , they were able to check more than one factor if necessary.

Faculty survey	Students Survey
<ul style="list-style-type: none"> • Availability of appropriate sources of technology (hardware/Software). • Appropriate support and training • Online course offerings enhance the quality of our institution's reputation. • Available compensation for online course development and teaching. • I am familiar with effective pedagogy for online teaching. • Effective student's interaction and engagement • Engagement with colleagues and sharing good online practices and experiences • Appropriate time and money given to online course designs • Online teaching considered in promotion • Being involved in the design on online courses. • Online learning is legally recognized in my country. • The use of artificial intelligence, virtual reality, and other advance technology to facilitate my tasks. 	<ul style="list-style-type: none"> • Availability of appropriate sources of technology (hardware/Software). • Appropriate support and training • Effective student's interaction and engagement • Engagement with other students and sharing good online practices and experiences • Reduction in course fees • Online teaching considered in promotion • Online learning is legally recognized in my country. • The use of artificial intelligence, virtual reality, and other advance technology to facilitate my tasks.

Table 25: Additional Survey Questions

In the faculty survey 87% answered yes they will teach online if they have the option not to.

As for the 13% who answered no they will not teach online if they had the option not to the majority selected the factors related to having “Appropriate support and training”

and “Availability of appropriate sources of technology (hardware/Software)”, as factors that will contribute to their decision to teach online. In the student survey 65% answered yes they will enroll in an online class if they have the option not to while 35% responded no. As for the

factors that will contribute to changing their decisions most of the students have mentioned “Availability of appropriate sources of technology (hardware/Software)” . One student mentioned the “reduction of course fees” and few students mentioned “Effective student’s interaction and engagement”.

Chapter 4 Summary

This chapter reported the quantitative data collected from the satisfaction surveys administered to both faculty and students. The quantitative data were synthesized and analyzed using SPSS to capture the variables affecting faculty and student satisfaction with online teaching and learning in higher education during the pandemic. Factors related to the faculty playing different roles, the institution support, the importance of having proper resources and the flexibility and communication for students had an impact on faculty and students’ satisfaction. Additionally, themes emerged from the open ended questions which aligned with the hypothesis tested.

Chapter 5: Qualitative Findings

5.1 Introduction

This chapter reports the qualitative findings from the research study, as outlined in Chapter 3. To get deeper understanding of the faculty and students' experience with online teaching and learning during the pandemic crisis, I have conducted interviews with faculty who had administrative and teaching responsibilities. The results of these interviews help to confirm the quantitative findings while also adding understanding of the variables that faculty identified as leading to the satisfaction or dissatisfaction with the online experience.

5.2 Interviews

To research the impact of online teaching and learning on faculty in HEIs during Covid-19 pandemic and the lessons learnt, 30 academicians were interviewed. The participants were 23% Deans, 37% Chairpersons, 17% Assistant chairpersons or Assistant Dean or Provot, 13% Directors, 7% VP or AVP, 3% other. 37% of the interviewees are Full professors, 50 % Associates professors and 10% Assistants. 63% did not teach online before the pandemic. The interviews were conducted using WebEx or Zoom and have lasted an average of 40 min each. Figure 5-11 summarizes the sample characteristics.

Figure 5-11 Interviews sample characteristics

All interviews were recorded (Except for one) after taking the interviewees' consent. The first three interviews transcriptions were done manually before I got introduced to Otter.Ai technology which proved to be a reliable tool and was used for all other interviews. Interviews transcriptions were then uploaded to NVivo where the preliminary themes were extracted.

	position	gender	age	Residence	education	employment status	years of experience	online teaching pre covid	living status	caring role	quiet place at home	will you teach online	Future of education is hybrid	Interview date
1	Associate professor and HRM institute director	F	54	EMEA	Phd	Full time	26 or more	No	Alone	No	Yes	Yes	Yes	5-Jun-20
2	Full professor Chairman hospitality department	M	58	EMEA	Phd	Full time	26 or more	No	Not alone	No	Yes	No	Yes	10-Jun-20
3	Assistant professor- AVP Finance	F	60	EMEA	Phd	Full time	26 or more	No	Alone	No	Yes	No	Yes	15-Jun-20
4	Full professor-VP for univerty advancement	M	74	EMEA	Phd	Full time	26 or more	No	Not alone	No	Yes	Yes	Yes	20-Jun-20
5	Full professor Dean- School of business	M	59	EMEA	Phd	Full time	26 or more	Yes	Not alone	No	Yes	No	Yes	28-Jun-20
6	Associate professor -Director of institute	F	45	EMEA	Phd	Full time	16-20 years	Yes	Not alone	Yes	Yes	No	no	9-Jul-20
7	Full professor Dean- School of business	M	58	EMEA	Phd	Full time	26 or more	No	Not alone	No	Yes	Yes	Yes	10-Jul-20
8	Assistant professor -Director of institute	M	33	EMEA	Phd	Full time	5-10 years	No	Not alone	No	Yes	Yes	Yes	15-Jul-20
9	Senior Lecturer- works in industry	F	41	Americas	PhD	Part time	16-20 years	Yes	Not alone	Yes	Yes	Yes	Yes	22-Jul-20
10	Assistant professor-Chairperson	M	37	Americas	PhD	Full time	5-10 years	Yes	Not alone	No	Yes	Yes	Yes	28-Jul-20
11	Full professor Dean- School of business	M	46	EMEA	PhD	Full time	16-20 years	No	Not alone	No	Yes	Yes	Yes	29-Jul-20
12	Associate professor and chairperson	M	44	EMEA	PhD	Full time	16-20 years	No	Not alone	Yes	Yes	Yes	Yes	30-Jul-20
13	Associate professor - Director of EMBA	F	42	EMEA	PhD	Full time	16-20 years	No	Not alone	Yes	Yes	Yes	Yes	2-Sep-20
14	Associate professor-Assistant chairperson	M	45	EMEA	PhD	Full time	16-20 years	No	Not alone	Yes	Yes	Yes	Yes	11-Sep-20
15	Full professor-chairperson	F	52	EMEA	Phd	Full time	26 or more	No	Not alone	No	Yes	Yes	Yes	10-Oct-20
16	Full Professor-associate dean for graduate programs	M	58	Asia Pacific	Phd	Full time	26 or more	yes	Not alone	no	Yes	Yes	Yes	13-Oct-20
17	Associate professor-Assistant Dean	M	59	EMEA	Phd	Full time	16-20 years	No	Not alone	No	Yes	Yes	Yes	4-Nov-20
18	Associate professor and assistant chairperson	M	53	EMEA	Phd	Full time	16-20 years	No	Not alone	No	Yes	Yes	Yes	10-Nov-20
19	Associate professor and assistant provost	F	49	EMEA	Phd	Full time	16-20 years	No	Not alone	Yes	Yes	Yes	Yes	19-Nov-20
20	Associate professor- Chairperson	F	48	EMEA	Phd	Full time	16-20 years	No	Not alone	Yes	Yes	Yes	Yes	25-Nov-20
21	Associate professor- Chairperson	F	54	EMEA	Phd	Full time	16-20 years	No	Not alone	No	Yes	Yes	Yes	3-Dec-20
22	Associate professor- Chairperson	F	55	EMEA	Phd	Full time	16-20 years	No	Not alone	No	Yes	Yes	Yes	9-Dec-20
23	Associate professor- Chairperson	F	57	EMEA	PhD	Full time	16-20 years	No	Not alone	No	Yes	Yes	Yes	11-Jan-21
24	Associate professor- Chairperson	F	53	EMEA	PhD	Full time	16-20 years	No	Not alone	No	Yes	Yes	Yes	20-Jan-21
25	Full professor-Dean	M	60	Asia Pacific	PhD	Full time	16-20 years	Yes	Not alone	No	Yes	Yes	Yes	27-Jan-21
26	Associate professor- Chairperson	M	55	Asia Pacific	PhD	Full time	16-20 years	Yes	Not alone	No	Yes	Yes	Yes	2-Feb-21
27	Full professor-Dean	M	57	Asia Pacific	PhD	Full time	16-20 years	Yes	Not alone	No	Yes	Yes	Yes	9-Feb-21
28	Associate professor- Chairperson	M	48	Asia Pacific	PhD	Full time	16-20 years	Yes	Not alone	No	Yes	Yes	Yes	17-Feb-21
29	Full professor-Dean	F	59	Asia Pacific	PhD	Full time	16-20 years	Yes	Not alone	No	Yes	no	no	5-Mar-21
30	Full professor-Dean	M	58	Asia Pacific	PhD	Full time	16-20 years	Yes	Not alone	No	Yes	Yes	Yes	18-Mar-21

Following Spiggle's (1994) guidelines, the data collected were coded and then categorized following specific themes (See figure 5-13 page 135 and Table 26 page 132). The contents of the interviews were grouped under different themes and then integrated under higher order conceptual constructs. The different themes were then consolidated into more concrete categories. I have followed the Grounded Theory by collecting data and analyzing it at the same time. While coding the data on NVivo comparison was made with other interviews to evaluate if additional interviews were still needed. In a qualitative methodology and according to the Grounded theory, the sample size of the interviews is flexible (Glaser 1978). The iterative process I followed in collecting data and simultaneously reviewing it has allowed for real time judgments about whether to conduct further interviews. As mentioned by Strauss and Corbin (1998), when data collection is no longer bringing incremental benefit then this means the

researcher has reached theoretical saturation and data collection can be stopped. Although data reached the saturation point at the 15th interview, fifteen additional interviews were conducted to ensure that no important theme was missed.

The open-ended questions tackled these areas:

- Prior Covid-19 online experience and training,
- confidence and willingness to teach online,
- feelings about the decision to teach online and how the decision was communicated,
- how students were approached during this abrupt shift,
- how the online class was structured and what type of tools and engaging activities were used, how students' engagements were measured and whether students were satisfied with the online experience,
- what are the factors that can lead to a successful online experience, and
- whether faculty were supported by the IT.

In addition, interviewees were asked if they believed Covid-19 accelerated phasing out face to face learning and what its impact would be, and whether they would shift to teach online 100% in the future. Finally, they were asked about online pedagogy and its impact on AACSB accredited and targeting international students and possibly lower the fees.

5.3 Findings

In the section below, I will describe the process of how the categories were identified and uncovered. Analysis was done using Nvivo. Coding initially led to 137 themes which were then consolidated and relabeled based on redundant or overlapping codes.

The table below summarizes from Nvivo the number of times a theme was referenced and the number of files where this theme occurred:

Group	Theme	Files	References
Online teachers will have to play several roles	Faculty Role	13	22
	Faculty Training	13	17
Online Pedagogy	Advantages of online	10	20
	Faculty adaptation	11	24
Barriers to OTL	Emotional distress	16	94
	Students concerns	11	14

Table 26 Themes Summary

Broad overarching themes have emerged from the data collected, example, emotional distress being the most frequent theme that included faculty concerns, Covid acceleration of digital transformation, disruptive and challenging journey...etc. These first order themes then led to a second order themes such as online teachers' roles, online pedagogy, barriers and challenges.

The figure below demonstrates the complexity of the issue and how different themes came into play and were interrelated together.

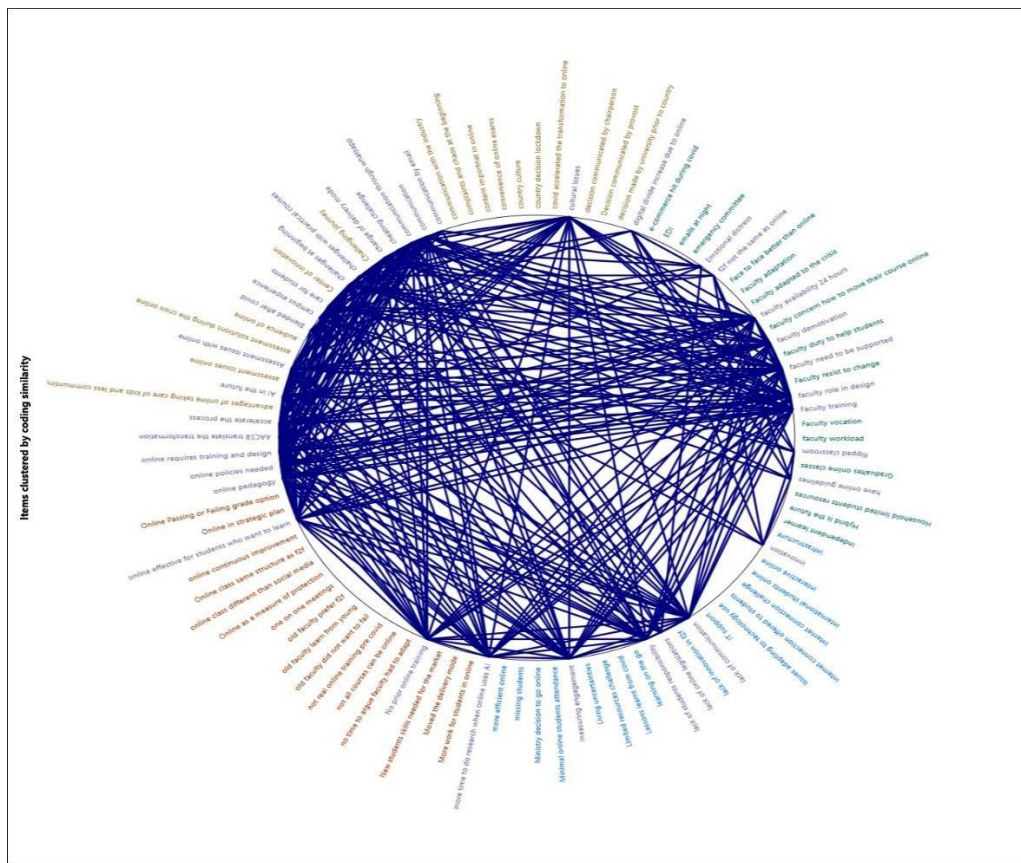


Figure 5-12 Online teaching and learning themes derived from the interviews

Deciphering such a complex figure is not straightforward, or immediately clear, but we can see from the themes that there are tangible and intangible aspects. Example, lack of resources, and the use of technology are tangible aspects while the faculty experience and roles are an intangible aspect. From this complex and generic figure, I was able to create a more focused list of twenty-two codes which were then analyzed for pattern and shared characteristics resulting in the below categories:

“Faculty role” and “faculty training” which gave more information on the role of faculty in teaching online during Covid. The categories “advantages of online” and “faculty adaptation” that contributed to faculty satisfaction and increased the chances that they would continue to teach online even post the pandemic. “Emotional distress” and “students concerns” detailed the negative impact online experience had during the crisis. These categories were further analyzed to

investigate emerging themes such as, an online teacher will have to play several roles and get further development, online pedagogy includes online advantages and faculty adaptation, barriers to online teaching include emotional distress and students concerns.

The groupings of the codes, categories and themes are displayed in the Online Teaching and Learning figure 5-13 below and will be further detailed later in this chapter.

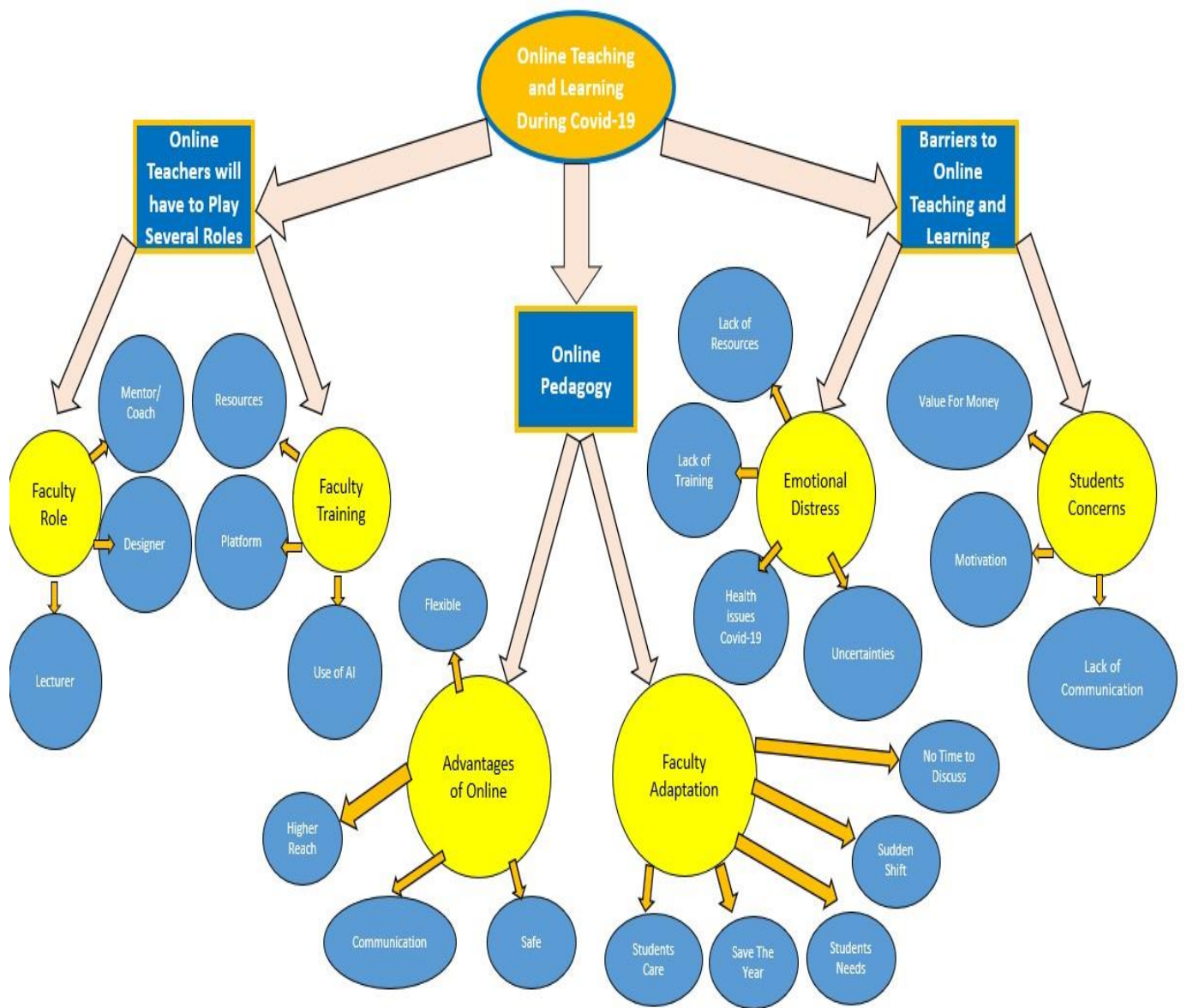


Figure 5-13 Codes Categories and Themes grouping

5.3.1 Online teacher roles and further development

The role played by faculty in the OTL environment was an important theme that has emerged from this research, derived from the categories of “faculty role” and “faculty training”. The interviews provided insights into the importance of giving appropriate training and development for faculty to be able to teach online and the various roles they had to play. The findings reflect the new faculty roles needed which will not be restricted to teaching but also coaching, mentoring, and even taking part in course design. The roles and training needed in the online environment will not only satisfy the faculty but also will reflect positively on the students as mentioned by the interviewees. According to several interviewees, faculty had also a high workload compared to face-to-face teaching and were expected to be available 24/7 to communicate and engage with the students. All this was done with no prior consultation or trainings. Summaries of the expected faculty role and training are provided below.

5.3.1.1 Faculty role

Online teaching and learning during Covid-19 was not done by choice. Universities across the globe, in ASIA Pacific, Americas, and EMEA regions asked their faculty to resume their teaching online as Covid-19 restricted movements and lockdown was imposed in most countries. All interviewees were faculty members who were asked to teach online during the pandemic. According to the interviewees, faculty were not consulted if they wanted to teach online as this was a crisis period and there was no time for any negotiations. Decisions were imposed top down. Faculty members who were asked to teach online, were living uncertainties, some of them had a caring role at home or lived alone.

Before reporting the interviews findings, allow me to reflect on the choice of interviewees. By interviewing Deans and faculty members with administrative tasks in Business Schools in HEI during the pandemic, I sought to investigate the issues faced during this contingency shift to

online teaching, and the challenges that surrounded this shift. I am interested in building a clear picture of the lessons learnt moving forward. The choice of interviewees was particularly suitable as participants are all experienced in HEI and at a level of seniority which allows them to have a say or contribute to the decisions made. Participants were of different gender, age, and years of experience and that gave a wider understanding and a more generic view of the challenges faced with OTL during the pandemic. The interviewees had different live circumstances that probably affected their perception of and attitude towards OTL.

For confidentiality reasons I have coded my interviewees names as Interviewee 1, Interviewee 2,... as per the Interviews sample characteristics table 5-11 on page 130.

When asked the question about “how did you approach your students online?” most interviewees mentioned that their first email was a comforting email, telling the students not to worry and that they will support them throughout these challenging times.

Interviewee 1 who is a 54-year-old female, full time Associate Professor, resident in the EMEA region with no online teaching experience pre-Covid, living alone with caring role explained:

I was asked to teach my class online at the same time when both my kids had their online school classes. So, we were 3 using the bandwidth at the same time, hearing each other's classes, and we were among the few lucky families who had 3 different devices to use. Many of my students told me they had to share and take turns in using one laptop! I felt sorry for them. I had to find ways to relief my students from the stress they were facing because of uncertainties and the lack of resources. I first sent a comforting email telling them I am here to support them and to help them finishing their course successfully. I spent time talking to them about their well-being, we are in this together and it shall pass, we will overcome the challenges I said. I even gave them my mobile number, I regretted this later (laugh) as I was bombarded day and night with their messages. But I felt I am not only their teacher I had another role to play I was their mentor and coach.

Another faculty member who I will refer to as Interviewee 3, a 60-year-old female, living alone in the EMEA region with no caring role, who said she will not teach online if she had the option not to, mentioned that:

I felt my role was no longer only teaching, I had to learn how to use online platforms such as team, how to use Zoom, how to use WhatsApp, and all these things I dreaded using before. I had to find ways to engage my students during very challenging times. That was not an easy task. I have taught Accounting for so many years in a classroom using a board and my markers. My course is not designed to be taught using a screen and a keyboard. This experience raised a flag that to teach a course online you need to design it differently. I am glad I will not have to do that as I will be retiring soon.

Interviewee 10 was a young faculty with 5-10 years of experience, 37 years old male from the Americas, not living alone with no caring role considered online to be the future of education. He mentioned:

As this is the future, we need to embrace this new pedagogy and develop our roles that will no longer be restricted to teaching. As a faculty member I believe I have to enhance my mentoring and coaching skills. I have also started learning some design skills so I can adapt my course to be taught online in a more interactive and interesting way. I think the university should invest in developing online courses post-Covid. They need to learn from this experience and be ready for the change. It is clear that hybrid is the future post Covid, and we will see more and more universities offering online programs. Also, countries who have been resilient in accepting such programs will have to adapt and legislate that soon.

Interviewee 30, a 58-year-old Male from Asia Pacific, who held a Deanship position said:

AI will even be used in the near future to help faculty in the many roles they will be playing and in giving instant feedback to students and answering their basic questions instantaneously. Each faculty will help their online assistant.

Most of the interviewees in my sample (19 out of 30) did not teach online pre-Covid. However, 25 of them would teach online in the future if they had the option not to and 28 out of 30 believe that the future will be hybrid.

5.3.1.2 Faculty training

Interviewees described the need for faculty training in the online environment. The pandemic caught universities by surprise and most of them did not have proper faculty training to face the crisis and successfully move their courses online. Interviewee 25, 60 years old male Dean, mentioned that:

We saw this (the lockdown) coming even before the government. So, we decided to move forward our semester break and use it to train our faculty on how to use the online platform in preparation for the upcoming crisis. I can proudly say that we were able in my school to train 95% of the faculty to be ready. And they were!

This was not the case with all other interviewees. Most responses revealed a rigorous workload on administration and IT staff during the sudden shift. When asked the question, “how were you asked to move online?”, most said that there was no prior consultation as this was a crisis but also when asked about their feelings with such a sudden shift, they mostly said there was no other way to try and help the students and they had to adapt but if they had proper training this shift would have been smoother. The question about how they approached students online triggered faculty to talk more about the need for training. Most interviewees did not have prior online training and that was a challenge. Interviewee 1, a 54-year-old female with no prior online teaching experience pre-Covid, said:

After 26 years of experience learning a new skill all by myself is not easy. I was overwhelmed I was not able to start my online class on time because of technical difficulties. I felt behind and I wondered what my students will think of me! I did not want them to say that I was an old, outdated professor. I needed support and since I did not have proper training, I called the young IT guru faculty members who shared with me some tips. IT staff were also very helpful but very overwhelmed with all the enquiries they were receiving. I just wish I knew how to use Teams before the crisis.

Interviewee 11, a 46-year-old male described his normal teaching routine that did not include the use of any technology, he said:

Suddenly I had to stop going to my classrooms, seeing, and talking to my students, writing on the white board...I was expected to do the same but virtually. I was not ready, and it took me a lot of time and effort to adapt.

Interviewee 4, a 74-year-old male, described the training offered to faculty members, he said:

At the university level we were offered general training on how to use the online platform. But faculty needed to know how to specifically deliver their own subject online. Teaching economics online is different than teaching marketing for example. The general training was done online as we could not physically access the university premises and that also was challenging for me.

Faculty members were expected to teach their lessons during normal times and keep regular office hours for students to contact them. They were also asked to give regular feedback and discuss any issues with their students.

Interview 2, 58 years old male, shared his concerns about not being able to appropriately use annotations online, or even to find appropriate tools to engage the students. He said:

I believe having appropriate training would make me feel more confident in this virtual environment.

In most cases training followed way after the start of the online course, Interviewee 16, a 58-year-old male, said:

We didn't have time for training did we. This caught us by surprise. Friday March 20 the initial long lockdown came into effect with measures in place to restrict movement domestically. All nonessential movement was prohibited, with permission to leave the houses to shop for food and medicine, or to go to work with the required permits issued by authorities. Schools and universities had to close, so we did not have much time to prepare. But we did it with no trainings at first. Training followed once classes started online a month later.

All interviewees in my sample did not have a full training on how to teach online. This was one of the main challenges they have faced as they had to learn using different platforms and

familiarize themselves with the online teaching in a very short time relying on themselves and on sharing practices with each other's.

5.3.2 Online Pedagogy

Online pedagogy has addressed the new model of teaching in HEI and emerged from the categories advantages of online and faculty adaptation. Encouraging factors such as flexibility, communication, and being able to reach out for students irrespective of where they were located are considered the main advantages that will encourage faculty to use the online pedagogy in delivering their courses. Among other factors are the adaptation level of faculty during the crisis. Having the mindset that faculty have a duty towards their students and that teaching is a vocation proved to be key in adapting to the crisis with almost no resistance in an environment which is usually rigid and resistant to change. The interviewees have identified many advantages of the online teaching, including flexibility, security, communication, and faculty adaptation due to the fact that teaching is a mission and faculty have the obligation to cater for their students' needs and adopt an innovative pedagogy by being more creative and supportive.

5.3.2.1 Advantages of online

5.3.2.1.1 Flexibility

The interviewees mentioned that online teaching during the pandemic was convenient and offered them the flexibility to reach out to their students they could no longer see face to face due to the lockdown. Faculty members did not have to stay in a fixed location and as mentioned by interviewee 28 who is a 48-year-old male:

we moved to our beach house away from the city where it was more pleasant for the family and I to have fresh air despite the lockdown. I was enjoying a nice sea view while teaching online.

To the question “what will make you shift your teaching 100% online if you had the choice?”, interviewee 20, a 48 years old female, mentioned:

I love the flexibility of online teaching and the fact that I do not need to dress up and wake up early to get ready. I love staying in my comfortable clothes and be able to do my job at the comfort of my house, as long as I have proper connection, I think I will not mind teaching 100% online if I have the opportunity.

Similarly, interviewee 9 a 41-year-old female mentioned:

As a working mom, I was able to make appropriate arrangements for my 2 kids while staying home ensuring they attend their classes online as well and keeping an eye on them while at the same time resuming my teaching functions online. So, the fact that I could stay home with my kids was rewarding. So, the flexibility online teaching has in terms of being able to support my kids and my students at the same time is so beneficial that I would not mind teaching online post pandemic.

5.3.2.1.2 Security

The terms “secure”, “safe”, “security” occurred in several interviews. Interviewees have felt more safe staying home teaching online and not having to be exposed to a virus that was still a mystery at the early stages of the pandemic. Interviewee 25, a 60-year-old male said:

I am in my 60’s, I do not want to get the virus at this stage and end up on a respiratory system. Staying home where I can confine myself is the wisest thing to do. So, despite the challenges I faced with online I feel more secure and safe to stay home and resume my teaching online.

Similarly, interviewee 4 who is 74 years old and who was teaching one course said:

I am struggling with the online teaching as I am doing this for the first time. But knowing that I am secure at home, and I don’t have to see my students face to face and be exposed to the virus is reassuring. It is a relief to know that I am safe.

All interviewees asserted that they felt safer to teach online during the pandemic even though not all of them wanted to continue to teach online post-pandemic.

5.3.2.1.3 Communication

In general interviewees were satisfied with the communication and engagement with the students during the pandemic. Each created their own means of communication channels either by emailing students, posting messages on the platforms if it existed, or creating WhatsApp groups. The meetings were done using Teams, WebEx or Zoom according to the interviewees in my sample. It was also noted that 16 of 30 interviewees reported sharing their personal contact mobile number and created WhatsApp groups with their students. While this provided a good communication platform, Interviewee 1 mentioned that she was overwhelmed with the number of messages she was getting per day. Interviewee 2, a 58-year-old male, mentioned that:

Students expected me to be present 24/7 and to respond to them instantaneously. I was receiving messages after midnight, and I was under the impression that students slept during the day and woke up at night.

On another note, interviewee 3, a 60-year-old female mentioned that:

I noticed some students communicated better online. As if they felt more secure behind their screen and they were more confident in expressing their thoughts and engaging in class discussions

Many students expressed satisfaction with virtual communication. As highlighted by Interviewee 23, a 57-year-old female who said:

One of my students told me that she felt she could contact me easier online and that she felt I was more approachable. As a faculty member, I also felt satisfied with the way I communicated with my students. I had frequent and meaningful communication either with the class during the synchronous lessons or on one-on-one basis with individual students. I felt very close to them, and this was needed during these challenging times of the pandemic. Students were also really understanding and helpful. They also adapted very quickly to the move to online and I appreciated their behavior. Seeing them engaged with me and with each other was really a rewarding experience. While some faculty were satisfied with the communication of the online environment, others felt stressed out and wanted to go back to their previous traditional face to face office hours. Interview 3 mentioned:

Communication with students online does not stop. It takes a lot of time. Administration expected us to be available to students at all times. I had to make sure to always check my emails several times a day, I was asked to create a WhatsApp group against my will and respond to students any time they send messages. This was overwhelming and I was burnt out. I want to go back to my face to face routine where students come and see me during specific office hours or by taking an appointment. I want to be able to see their faces and answer their questions directly. I don't like the distance created by the online communication. Students expected me to be online at all times. I had to breath and stay away from my screen and take a break at one point. But since we were on lockdown mode at home, they expected that my screen would be on at all times, and I had to respond quickly. That was really stressful.

5.3.2.2 Faculty adaptation

5.3.2.2.1 Saving the year

Faculty have the role to serve students and help them achieving their goals. "Saving the year" was a sentence mentioned by most interviewees when talking about the sudden online shift.

Interviewee 27 for example stated that:

We had an obligation towards our students. We need to save the year and resume teaching as soon as possible. Online teaching was the rescue.

Being able to resume their teaching functions online and meeting their students' needs was a satisfying component identified by faculty. Interview 1 a 54-year-old female, said:

Students paid their fees, some were expecting to graduate, something has to be done to save the year and we had to adapt to the new norm of teaching online at least for a while or who knows that can be the start of a new model of teaching.

On the same note, the Dean of one of the business schools I interviewed, referred to as interviewee 30 a 58-year-old male, mentioned that:

I wanted to save the semester; I owe that to the students. My school served a very large population who lived outside the city (where the school is located). Most of the students lived with their parents, with limited connection and resources. The university initiated the "rent a laptop" initiative and paid for the monthly students' internet fees because we are passionate about serving our students and helping all our stakeholders' faculty and students to adapt and succeed in this new online experience. It was amazing to see

our students' reactions and appreciations. They were so eager to pursue their programs and courses despite all challenges. I was so proud of our faculty adaptation and our students resilience.

Interviewee 30 also stated the need to train faculty and staff to "save the year". He said:

We had to save the year, and we did. I think mainly because of the smart move that we did it was that we were ahead of other universities institutions in Egypt, that's number one. Number two, we immediately took the decision to change this spring break time and number three to train the faculty and staff. The good thing is that the response of the faculty and staff was great. Most would think they were careless, we have around 100 faculty 50-50 between full-time and part-time. 79 attended these courses on Sunday, Monday, and Tuesday. Still 79 is 80% so 20% did not attend. But the reason why they did not attend well is because some of them were already experienced with the Technology, and some attended training the following week. For the staff overwhelmingly they had all attended training.

5.3.2.2.2 Student's care

Students are the main stakeholders of any educational institution. This was a satisfying component in the online teaching experience. Faculty stated that they wanted to ensure they help the students achieve their goals in education and use online teaching as a tool to achieve this during the pandemic crisis. It was important to adapt and change the way teaching was done. Interview 6 a 45-year-old female, mentioned that:

As faculty we were not consulted about moving online as this was a sudden shift. But we all knew that students come first, and it was important to do anything for them. Online teaching required additional work, different assessment methods, even different content so it was not a walk in the park, but we had to do it. A lot of facilities were given to students such as not to be considered absent if they could not login to class due to connection issue, or if they were tested positive, we had to be lenient and understanding. Also, my school offered like many others the option of P/F, pas or fail, at the end of the course.

Actually, most of the interviewees mentioned the P/F option and the fact that they were asked to care for students well-being and be considerate and lenient. In some cases, students were allowed no to switch their camera on. Interviewee 9 a 41-year-old female, stated that:

I was lucky as I spent few weeks with my students face to face before the lockdown so when we moved online, I actually knew their faces so although seeing those black boxes was not nice but at least I knew who I was talking to. We were asked not to make it compulsory to students to switch their camera on. We had to care for their well-being and be compassionate during this phase.

Participants in the interviews have stated that OTL during Covid-19 has ensured the continuity of teaching. Despite challenges faced, (these will be detailed in the next section), the online teaching experience has had its advantages. Online teaching is flexible and can be done at the comfort of one's own home. Furthermore, it reduces commuting and allows more work life balance. Online teaching has also eased communication during a period where mobility was restricted. Finally, as mentioned in many interviews, faculty had an obligation towards their students and it was their duty to help them resuming their academic year and facilitate the continuity of their education.

5.3.3 Barriers to online teaching

Online teaching during the pandemic has faced many challenges and from the interviews emerged themes related to emotional distress and students concerns. Emotional distress which was similar to both students and faculty, was particularly due to Covid-19 and its uncertainties, in addition to the lack of appropriate infrastructure in some countries, and the lack of resources which has created a digital divide and added to faculty and students' emotional distress. In the interviews, participants raised the issue of lack of training that caused stress and burnout. As for students concerns that was mainly due to lack of communication and engagement in some cases which increased their frustration. According to some interviewees, students were inactive, took advantage of the pandemic situation, and had many excuses not to attend their online classes. Not all excuses were genuine.

5.3.3.1 Emotional distress

The pandemic instigated emotional distress among faculty and students. The virus spread unpredictably, and different variants emerged. This brought uncertainties and challenges that have disrupted the routine of the daily life.

5.3.3.1.1 Covid-19 and the uncertainties

Teaching online at the comfort of your home does not necessarily suggest you will not catch the virus. Interviewee 2, 58 years old male, mentioned:

I was tested positive, and I was expected to continue my teaching online as my symptoms were mild. But I was emotionally distressed and scared about the impact this unknown virus will have on me.

Interviewee 10, 37 years old male, mentioned that:

We were expected to give make up sessions to students who tested positive and had to be absent. That was additional work to our already overloaded schedule but since we were at home the expectation was that we could do more and more. At some point I was not able to take a break jumping between a zoom meeting, to an online WebEx class to a one-on-one meeting with a student or running a make-up exam.

The uncertainties that surrounded the pandemic forced people to be confined at home and reduced their walks outside the house. For example, many decided to use delivery services to get their groceries or even order coffee as mentioned by one of my interviewees. So, faculty were mainly sitting for hours behind their screens with limited breaks, they had in some instances caring roles and a household to take care of, and sometimes they had kids taking online classes. All this added to their emotional distress. Interviewee 9, 41 years old female, stated that:

I had to go and work in the basement to have some quiet time. Being on the same floor with my 3 kids was so stressful. They kept on interrupting my classes, jumping around to ask for attention or complaining about their own online sessions.

Interview 5, 59 years old male, who will not teach online post-Covid but believes the future is hybrid, and has communicated factors that will alleviate the emotional distress on faculty in the future. He mentioned:

The pressure on faculty and students should be eliminated in the online environment to encourage them to teach or enroll in online classes post pandemic. There are lessons learnt from this experience and the future is surely online and hybrid. We will not go back to the ways things were done pre-Covid. But we need to find ways to alleviate the stress that faculty and students are facing. I see for example AI and virtual reality embedded in online teaching, or the use of an algorithm similar to Tik Tok in teaching who knows. Students will then be able to move quickly around their tasks and focus on the ones they want; faculty can rely on AI for logistics or even grading and they can have more time to focus on their research. Technology will play a role in reducing that stress or maybe the opposite let's wait and see.

5.3.3.1.2 Lack of resources and training

Lack of resources and training were the main dissatisfaction factors in the online experience during the pandemic. Interviewee 23, a 57-year-old female, reported receiving some kind of online training but not really relevant to what was expected from faculty during the crisis. She stated:

I wouldn't call it training but that was material that you could access online. So, for example a video where someone would talk to you about Blackboard. In terms of training yes but it felt very much like a tick box exercise. So, for example for the EDI training (Equality, Diversity and Inclusivity) you see a video concerning how you might interview candidates for a job and you would answer multiple choice questions based on the video. So, it is not interactive and wasn't really inspiring if I want to be honest. I mean essentially it was the same type of tones as if you had a textbook in front of you that has been converted to a video.

Faculty did not receive appropriate training as the shift was sudden. Traditional or face to face teaching is different than online teaching and requires different skills and resources of which interviewee 26, a 55-year-old male, explained:

I have been going to the class for years to deliver my courses, and now they want me to jump to a screen assuming I could do my job. How can I do that with no training or previous preparation and if I do not have the resources? It took me many hours of face to face training to know how to use a smart board! I need at least someone to walk me through the platform I will use, plus I need to be living in a country where there is no power cut, and proper internet connection. Every time I open a WebEx meeting it takes around 10 to 15 minutes to start! I know we have to adapt to the change, and I will it is just that training and proper resources are needed.

Interviewee 22, a 55-year-old female, also described the lack of resources that impacts faculty and students' dissatisfaction in the online environment. She mentioned:

In my school we can have either a desktop or a laptop. I opted for a desktop so I can separate my personal life from my career. All my school related tasks were done at the office and never home. When the pandemic hit and we were asked to move online, I faced issues moving my work on the cloud. I shared a laptop at home with my husband.

Requesting a laptop and waiting for the approvals took ages. Before embarking into an online journey, you need to have the basics, some training and proper tools.

Interviewee 14, 45 years old male, mentioned the challenges faced by students and faculty due to the lack of resources. He said:

Some students had to use their mobile phones as it was not their turn to use the laptop which was shared by their siblings. Others were staying in rural areas with limited internet connection and struggled joining their online classes. And when they were able to join communication was either lagging or disconnected. That was not a pleasant experience for them.

Schools need to provide proper resources but also governments should ensure a proper infrastructure for a smooth online teaching and learning experience as mentioned by interviewee 29, a 59-year-old female, who held a Deanship position in one of the business schools.

5.3.3.1.3 Students' concerns

From the interviewee's perspectives students have faced concerns that affected their level of satisfaction with the online experience. In some instances, those concerns were similar to those faced by faculty such as lack of resources, or lack of communication. In some instances, it was

due to the fact that online courses is not what they initially paid for. Interview 6, 45 years old female, who stated she will not teach online if she has the option not to and who believed that the future of education is not hybrid stated:

So far students have been complaining about their online experience. This is not what I paid for said one of my undergraduate students. Of course, I try to explain that this is an emergency and there is not much we could do about it, but I completely understand their concerns.

Interviewee 15, a 52-year-old female, mentioned that:

Students were not all equipped with proper resources to succeed in an online environment. 95% of our students are on one type of financial aid assistance, how can we assume that they will all have a laptop or even an internet connection? I agree the future is hybrid and we have to adapt to that otherwise we might be asked to go home, but to be satisfied and successful with such an experience you need proper resources. Other interviews pointed out that not communicating in a timely manner with students can demotivate them and can lead to their dissatisfaction with the online experience. According to interviewee 7, a 58-year-old male:

I received several complaints at the beginning of the online shift from students that they were not receiving proper communication or timely replies to their emails. I am a strong advocate for faculty, and I knew that faculty need some time to adapt, and they will need some type of professional development to help them effectively communicate with students online and engage with them in a timely manner. I was right as things go much better at a later stage when we were able to provide some type of training to our faculty.

The recent student's evaluation show that students are more satisfied with their online experience when their faculty communicate with them in a timely manner and provide immediate meaningful feedback.

Both interviewees 12 (44 years old, male) and 19 (49 years old, female) have felt the need to provide proper resources, infrastructure, and support to faculty and students entering the online environment. Faculty and students were thrown into the online world during very harsh times, said interviewee 12. A world that requires proper investments, time, and training. Interviewee 19 gave the example of the open university, she said:

Take for example the Open University, they only provide online programs and they have been doing that for years way before the pandemic. They invest in the online

program and courses design, implementation, testing and delivering and all their faculty are well trained to deliver online courses. What was done by faculty during the pandemic was not proper online courses, but it was a move of their courses from a traditional mode to online and this is different from proper well integrated online courses. Our faculty did not have the means or trainings and that affected the satisfaction of students.

When asked about the activities used to engage students online, Interviewee 8, 33 years old male, mentioned that he has engaged students in group work, discussions, and peer reviews but not all students were motivated. He said:

There were always demotivated students who were not able to cope with the online environment or who found that online is rigorous and requires a lot of work. That's why I would say online is not for each and every student. I feel it is more for graduates students who are usually self-motivated and independent learners. I had many students who were not able to submit their work on time and found so many excuses because of issues with lack of resources, internet connections, or simply because online was not for them. I had experience with students who actually entered the online class but when called upon they did not respond because actually they were not there! This was a disruptive behavior that I had to deal with in difficult times.

Students were living uncertainties and they were taken out of the comfort of their classes. When they registered for their courses, they expected to be in the classrooms talking face to face to their instructors and taking advantage of all the services provided by the university. Some were concerned about the online mode of teaching as this is not what they paid for.

Participants in the interviews are fully aware of the challenges and barriers of online teaching. Nonetheless, all of them have reported that the future of teaching is either blended or online. Online teaching has advantages as stated earlier. It also has challenges and limitations mainly due to lack of resources, infrastructure and training. Teaching online requires specific skills and knowledge. Faculty were not able to receive proper training and many lacked the resources. While on one hand some faculty enjoyed the experience, on the other hand some did not even have a proper internet connection. Providing appropriate resources and infrastructure is essential to the success of online teaching and learning.

Chapter 5 Summary:

This chapter reported the qualitative findings from the interviews. The interviews were analyzed to get deeper understanding of the faculty and students experience with online teaching and learning during the pandemic crisis. The results of these interviews helped to confirm the quantitative findings while also adding understanding of the variables that faculty identified as leading to the satisfaction or dissatisfaction with the online experience such as: “Faculty role” and “faculty training” which gave more information on the role of faculty in teaching online during Covid. The categories “advantages of online” and “faculty adaptation” that contributed to faculty satisfaction and increased the chances that they would continue to teach online even post the pandemic and the “emotional distress” and “students concerns” detailed the negative impact online experience had during the crisis. These findings now lead to the concluding discussion chapter.

Chapter 6: Summary, discussions, and implications

6.1 Introduction

Let us go back to the fundamental question in my research, what is the impact of online teaching and learning on faculty and students in HEIs after Covid-19 pandemic?. I have collected and analyzed relevant body of literature and used a theoretical framework that covered different lenses, crisis, change and satisfaction theories. I have explained the research methods used and analyzed the quantitative and qualitative findings. This chapter will reflect on the literature review and compare it to the findings of this research. At the end of this chapter, I conclude with the contribution of this research to theory and practice and highlight recommendations for the future. I will propose lessons learnt from the crisis caused by the pandemic in HEIs mainly in Business Schools and ways to move forward.

6.2 Research Questions discussions

6.2.1 The Extent to which Covid-19 impacted faculty and students satisfaction in OTL and saved or added risks to the Academic Year

The research started at the beginning of the pandemic in 2019 and up until 2022 during a period when the pandemic is still not over yet. The world and HEI are still battling new Covid variants despite the availability of vaccines. A major contribution of my research is to draw attention to the significant shift from traditional classroom settings to online learning environments for faculty and students during a severe global health crisis. The decision to move online came from Government policy and the ministries of education in respective countries; however, some universities went ahead and decided to move online even before the official decision was announced.

Outside of a global health crisis and as per the change management theory, Lewin (1947) believes change happens through learning, planning, and involving all the institution's stakeholders. Failure to follow these steps might lead to resistance. During this pandemic crisis, and from the crisis management perspective of Smith (1990), a major concern for institutions was to prevent any interruption of teaching, and there was no time for any learning, planning or involvement. The confusion and stress around education provision and access to university buildings have escalated, leading strategies to enable teaching and learning throughout the crisis. Smith's concept is put in action with how the crisis was handled by various institutions and the ways in which different institutions sought solutions to teaching and access to research. The pandemic did not give time to any of the phases of change to happen smoothly, yet faculty and students had to adapt to the change during those challenging times full of uncertainties.

The context where change is happening is also important, such as if it is happening in an "agile" business environment. But in this case change is happening in educational institutions and specifically universities. Universities are considered "rigid" institutions where change is considered a threat that might disrupt the identity, process, and governance (Olsen 2007); Nevertheless, adaptation has happened significantly faster during Covid-19 due to technology that removed barriers of location and allowed near instant communication. In addition, faculty had to play several roles and the result indicates that those who had previous online experience adapted well to the change with a satisfaction mean of 3.01 on a 5-point Likert scale. This result marginally shows that the sampled faculty are satisfied with online teaching to a certain extent.

In addition, and as mentioned in the interviews faculty wanted to support students during a time of crisis and help them achieving their goals by "saving the year". The adoption of online teaching and learning was the only way available to resume education while maintaining proper social

distancing during the pandemic. The outcome of this research findings reveals that despite the unreadiness of most of the respondents in my surveys and interviewees to work in an online environment, both faculty and students believed that the academic year had to resume especially that it was not clear when the pandemic will end.

The faculty's main concern was student care and ensuring that teaching is resumed with minimal disruption to teaching and learning. As mentioned in the interviews faculty and students had no access to their campuses. The shift to online teaching has been the best adopted way to help students in continuing their academic year (Qazi, Qazi et al. 2021) and the findings in my interviews have revealed the same despite the fact that in most of my sample faculty and students lack of resources and connectivity issues are a hurdle. In some cases, students were privileged enough to belong to institutions which let them borrow laptops or paid for their internet connections. In other cases, some students felt outside such a support and struggled ensuring access to online learning due to electrical shortages, lack of connectivity and online tools, and this has led to disparity and amplification of existing digital divide (Klonoff, Shang et al. 2021).

While some HEI are still treating online teaching as a contingency plan (Ma, Black et al. 2021), others are treating it as a necessity emerging concept that will guide the future of education, a future that might be full of uncertainties with complex geo-political situations or even future pandemics. Covid-19 impacted HEI with a myriad possible post pandemics effects that they need to learn from to be prepared for the future. The educational sector is deep rooted and universities are among the oldest institutions in the world (Lella, Fischetto et al. 2012), so they need to be ready and face any political, financial, or health crisis. While the shift to online teaching was in response to an emergency situation at the beginning of the pandemic, HEI should be better prepared for any upcoming emergency. For example, universities will have to

unleash their innovation and reinvent themselves. Now that the teaching mode has changed and the online or hybrid modes were adopted by many, it is important for institutions to have a clear strategy that will help them to move forward with a viable financial plan to run classes online and face to face, conduct self-evaluation, get feedback from students and faculty, create new programs, and accommodate high demand for online classes. Covid-19 has caused a fundamental change in the way HEI operate and in the workspace practices putting additional strains on administrators, faculty and students (Green, Anderson et al. 2020). In addition, the deterioration of the world economy and the rise in unemployment will influence the students' decisions about what to study and whether enrolling at a university will give financial benefits or not. The global financial uncertainty adds more pressure on HEI as to what new programs to initiate and how to meet students' needs and the industry demands. Unemployed people might be inclined to choose to enroll in university but they will be looking at courses that will help them finding new careers and professional paths (Croucher and Locke 2020). HEI need to be ready to embrace the acceleration in new fields and the proliferation of new programs such as artificial intelligence and data analytics and be willing to let go of outdated programs.

6.2.2 The Extent to which OTL will impact faculty and students satisfaction in HEI in the future and whether HEI hierarchies will cause resistance to change in embracing the new model of teaching and learning

HEIs are complex environment with rigid structures resistant to change (Blanco-Portela, Benayas et al. 2018). However, during the crisis the shift to online teaching and the changes that occurred were unprecedented. Lewin (1947) three phases of change management theory, learning, planning and involving individuals affected did not happen simultaneously but they have actually overlapped during the pandemic.

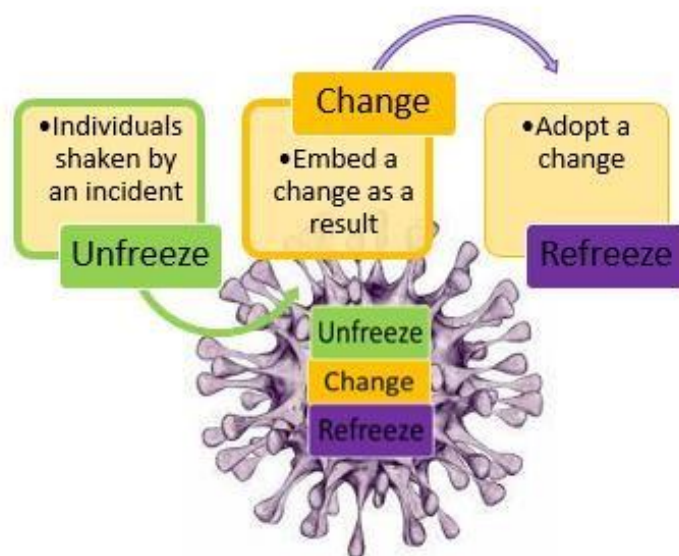


Figure 6-14 Lewin's change process

If we want to follow Lewin's three phases of change, HEI will need to follow a journey when moving from face to face, to blended, then online teaching and learning. This journey will reflect change in pedagogy and practices for both faculty and students. It will face challenges and issues that the institution needs to highlight and adjust. When Covid-19 forced the universities to move online there was no time to go through the steps of the journey of change.

A lot of pressure was put on universities to move online from one hand and to go back to face to face on the other hand. Students were not happy with the shift at the beginning as they did not pay for such a mode of teaching, they wanted the campus experience, and they had a negative attitude towards video conferencing lessons (Serhan 2020). Faculty members have also faced a lot of challenges as they were not prepared to teach online, and they had to make a lot of efforts to survive the academic year (Singh and Matthees 2021). Data collected from the interviews and the open-ended questions in the surveys show that even though faculty and students did not have time to learn to use the new mode of online teaching, but they have

adapted and accepted that change due to the urgency of the crisis. The learning phase happened instantaneously during the crisis. The findings in the interviews also show that some faculty took the initiative to learn the use of online tools and did not wait for any support, they have just adapted completely by themselves. Other faculty members learned from each other and from some of the institution support provided during the crisis. Planning only started at a later stage when institutions moved away from the sudden emergency shift.

In my interview sample, 28 out of 30 faculty interviewees stated the future is hybrid and 25 out of 30 will teach online in the future. This shows that to some extent the mindset in HEI has changed and post pandemic they will be willing to embrace hybrid or online education. Therefore, the need to follow the 3 phases of Lewin: Learning, planning, and involving.

During the learning stage HEI will have to investigate the opportunities and challenges of OTL during Covid-19, capture, and analyze their findings to plan for the future. A comprehensive study will help them in evaluating the needs and requirements of implementing OTL at a wider scale in their institution. Furthermore, learning will ensure that HEIs will deliberate on short and long term initiatives to move forward in embracing OTL models. Once learning takes place HEIs will move to planning,

Institutions need to plan and be prepared to embrace OTL by creating a strategy that includes clear set of goals and objectives with a specific timeline and a regular evaluation progress report. HEI will also need to ensure they have the proper infrastructure and resources and offer training for both faculty and students in using online platforms, adopting new teaching methodologies, embracing pedagogical practices, and adapting to the future of hybrid and online. Both faculty and students in my research have appreciated the flexibility of online teaching and learning and liked this new mode that allowed them to use a variety of tools and innovative teaching methods. Therefore, the need to plan to acquire essential tools, and provide

support to help faculty and students embracing online education is important. My findings show that both faculty and students adapted to the change, so their mind set is ready to embrace the online mode. This is an open opportunity for HEI who can now plan for the use of new teaching methodologies, and embrace the online delivery of their programs.

Even though the faculty survey has shown that faculty's general satisfaction during the pandemic was neutral, 87% of faculty will teach online and 90% will teach blended post pandemic which is an indication that the impact of online teaching and learning was positive. Also, when it comes to students 64% of the students said they will enroll in blended courses while 37% said they will enroll in online courses, which is encouraging and shows the willingness to embrace the online or hybrid mode in the future, and the unlikeliness to go back to how teaching was done before the pandemic. The interest and investment in online learning courses by students is again another reason why HEI should plan and be more prepared for the teaching and learning post pandemic. Learning and planning is followed by involving according to Lewin. Arguably, since the faculty and students are the main components in the online teaching and learning experience, they need to be involved in the change process. HEI, ought to not only invest in resources and infrastructures but also in human capital. Faculty and students should be involved in the strategic plan of the digital transformation of HEI and the implementation of OTL. They will be best placed to reflect on and advise on the conditions that will facilitate their online teaching experience and benefit the students. Indeed, faculty and students are the main catalyst in the OTL experience, and their input is important. The challenges faced during the pandemic can be used as incentives to initiate new ways of combining OTL with emerging technologies to enhance additional teaching techniques and generate a better journey for students. Involving faculty and students will shed light on the challenges faced during the pandemic and will help exploring effective methods to use in

providing the appropriate online teaching services that will lead to a successful student experience and learning outcomes. Furthermore, as a result of this change, previous policies, rules and regulations need to be updated or new ones need to be developed. Involving faculty and students in this process will reduce violations and resistance.

6.2.3 The Impact OTL will have on Faculty and Students Satisfaction in HEI

Findings from the faculty survey reveal that there are several factors that impacted faculty and students satisfaction with OTL during the pandemic. Hoppock (1935) defines job satisfaction as being a combination of environmental, physiological, and psychological conditions. For health reasons, faculty and students were asked to stay at home to minimize the risks of catching the virus. Faculty with previous online experience appear to have played different roles and found the online teaching to be satisfying as proved in my hypothesis 1a. This aligns with several findings that faculty in the online environment will have different skills and will have to play different roles such as facilitator, designer, mentor and course organizer (Young, Cantrell et al. 2001, Ferrari, Punie et al. 2012, Muñoz Carril, González Sanmamed et al. 2013). Faculty who taught online prior to Covid-19 were also more confident and satisfied with online teaching during the crisis. But it is interesting to note that even those faculty members with no prior online teaching experience, expressed their willingness to teach online post pandemic restrictions. The findings of my interviews show that while 58% of the interviewees did not teach online pre-Covid, 80% are willing to teach online post pandemic. The findings of the faculty surveys align with the interviews results, as while 55.3% faculty surveyed mentioned that they only taught face to face pre- Covid, 87 % stated that they will teach online post pandemic if they had the option not to. Findings from the students survey also revealed that most students will enroll in online or blended learning in the future irrespective of their satisfaction or dissatisfaction with the online learning experience during the pandemic. In the

student survey, 65% answered yes they will enroll in an online class in the future. Since both faculty and students want to embrace online post pandemic, this evidence suggest that appropriate strategy must be adopted by universities to deal with such a surge.

According to the findings in my faculty survey and interviews, having proper training, guidelines, and resources with support from the institution will enhance faculty satisfaction with online teaching and will accelerate the change in the faculty mindset for those who are less satisfied with the online experience. This aligns with several research that supported the need to have appropriate training, professional development and resources provided by the institutions (Dhawan 2020, Frankel, Friedman et al. 2020, Scherer, Howard et al. 2020). Another factor that played a role in online teaching experience during the pandemic is the ability to engage and communicate with students. Findings from the interviews revealed the importance of communication and engaging students in the online environment. This aligns with the findings from the student survey which showed a positive correlation between student satisfaction and the level of their online engagement and communication. My findings align also with previous researchers who believe that engagement and communication are important keys in the success of OTL experience (Anderson, Liam et al. 2001, Thurmond and Wambach 2004, Alqurashi 2019, Rapanta, Botturi et al. 2020). The recommendation here is that universities need to put more efforts in creating approaches that will engage students in an active online learning environment to enhance communication and engagement between students and faculty (Singh and Matthees 2021). Students in the student survey who reported dissatisfaction were concerned about lack of face to face teaching, lack of communication, and engagement. These findings point to the importance of having proper guidelines and tools to help in communicating and engaging with students, this will create a similar environment to the face to face traditional teaching mode that faculty are used to. Based on my findings, faculty

stated that during the pandemic, there was an urgent need to change the mode of teaching from face to face to online, but in fact at that stage, students and faculty did not experience proper online teaching and learning experience. My findings show that faculty agree that their role in online teaching and learning goes beyond lecturing. Faculty reported using different online platform tools such as Blackboard, Moodle and Teams in addition to other learning management systems; However, the transition involved a change in the delivery mode and a flip in the academic life of students and faculty without prior understanding of the online pedagogy. This change in the delivery mode was mainly needed for academic continuity during the time of crisis (Mishra, Gupta et al. 2020); however, a significant concern was shared among many faculty who were not prepared for this shift, and who lacked experience and know-how of the online environment, which is different than face-to face environment. This is why when asked about their general satisfaction with the OTL experience (Hypothesis 1) they were neutral. This also implies that faculty were confused with the uncertainties and had other concerns and challenges to face such as health, economics and educational issues (García-Morales, Garrido Moreno et al. 2021). While replicating face to face teaching in an online environment is not the aim as both teaching modes are different but combining the strengths of both modes of teaching and using the online tools to engage students will offer better learning opportunities and experiences.

Faculty for instance, will need to receive proper training on how to use or even design their courses online since these are different than face to face lessons. My findings show that faculty believe that receiving training on using online platform and being involved in designing their online courses will increase their satisfaction in teaching online. It is important to address faculty needs and support them with appropriate resources and guidelines in addition to providing developmental opportunities and sharing good practices prior to asking them to teach

online (Maltby and Whittle 2000, Kali, Goodyear et al. 2011). Having institutional support appeared to be positively impacting faculty satisfaction with online teaching. This was found in the survey and the results show positive correlation between institutional support and faculty satisfaction even though the correlation is not linear. Similarly, the interviews mention that faculty members who received proper training adapted quickly with the change and were more engaged in the online teaching experience than those who did not get any support. Sharing good practices and getting advice from colleagues with more online experience impacted positively the faculty members who were not able to get institutional support. Institutional support is obviously needed and having proper support strategies are intended to help faculty and students to optimize OTL. Support is needed in terms of using the technology and adopting an online pedagogy. In addition, faculty will need to understand how to play different roles in online teaching such as counselling, coaching, designing and mentoring. Surveys and interviews findings reveal the impact of faculty perception and the changes in their mindset that affected their online teaching experience. Faculty who reported taking initiatives to learn using different tools, and who relied on themselves and not on their institution, have revealed their beliefs in online teaching and that faculty's mindset is instrumental in addressing the future of online teaching and learning. The findings of this research in terms of the importance of institutional support aligns with many research where institutional support related to providing proper tools, training and technical support to faculty and clear guidelines and directions were instrumental in the online teaching and learning experience (van Rensburg 2018, Joshi, Vinay et al. 2020, Tartavulea, Albu et al. 2020). The pandemic can be used as a learning experience and institutions will need to customize that experience to ensure a successful post pandemic online teaching and learning continuity.

6.3 Key Findings

The objectives of this research are to:

a) Evaluate the satisfaction of Faculty and Students with online teaching and learning

The surveys of both faculty and students' findings revealed that despite the fact that faculty general satisfaction was neutral, 87% of faculty will teach online and 90% will teach blended courses which is an indication that the impact of online teaching and learning is positive. Also, when it comes to students, 64% of the students said they will enroll in blended courses and 37% said they will enroll in online courses, which is encouraging and show the willingness to embrace the online or hybrid mode in the future; Despite the fact that satisfaction was not a major component in the online teaching and learning experience during the crisis as both faculty and students were living uncertainties, and had concerns related to their health and economic sustainability. The results suggest that both faculty and students might embark on the online experience in the future; This probably conveys that either they see that the future of education is online, or that the experience they had during the crisis has had a positive impact. During a crisis what matters is surviving the challenges. The pandemic has been a challenging experience, and faculty and students were confronted with the consequences of the lockdowns, economic issues, and health concerns. The implications of the pandemic on the education sector has led to the shift to online teaching and learning as a survival mode to save the year; Therefore, satisfaction was not the main objective of the online teaching and learning during the pandemic and this is consistent with previous research (Bozkurt, Jung et al. 2020).

b) Investigate the factors that contribute to faculty satisfaction during online teaching and learning.

Both faculty surveys and interviews have included findings related to factors that contribute to the faculty satisfaction with online teaching and learning. Faculty who played roles other than lecturers were more satisfied with the online experience than others. This is mainly due to the fact that in online teaching faculty can use their technology skills to engage students using different tools. They can have a variety of learning methods and techniques. In addition, and as mentioned in the interviews, during the crisis faculty had to be closer to their students and support them during challenging times so they played the role of mentors and coaches. Playing different roles has affected faculty's own satisfaction and my findings align with the number of studies about the direct relevance of the role played by faculty on faculty satisfaction (Hagedorn 2000, Bolliger, Inan et al. 2014, Rohland-Heinrich 2016, Al-Samarraie, Teng et al. 2018).

To accommodate changes in higher education, institutions need to support their faculty and drive them to impart and support students in acquiring knowledge and skills needed for their success in the future. Institutional support has a positive impact on faculty satisfaction. The analysis revealed a medium correlation of statistical significance ($r=.177, p=0.000$) between faculty satisfaction and the institutional support indicating that the more support faculty get from their institution, the more likely they will be satisfied with their online experience. This finding aligns with previous research that shows that faculty are usually satisfied when they receive different types of support from their institution such as release time to prepare for the online course, training, guidelines and policies, adequate compensation, and promotion (Bower 2001, Bolliger 2004, Bower and Hardy 2004, Moore and Moore 2005).

But this correlation is not linear suggesting that faculty's mindset plays a role as well. As mentioned in several interviews some faculty did not wait for any institutional

support and have taken the initiative to move forward and succeed in their online experience for the sake of their students. They wanted to ensure that students resume their courses and complete their degrees. This means the human capital and faculty personality might have a role to play also and that despite the fact that research has shown the importance of institutional support, further research could also reveal the importance of human capital especially during crisis. I was hoping in this research to look at the human capital and specifically find a correlation between faculty and students' satisfaction. While such a correlation exists and was evidenced in the literature in various organizational settings (Chi and Gursoy 2009, Kurdi, Alshurideh et al. 2020), I was not able to locate similar research done at the university setting. Unfortunately, faculty satisfaction did not correlate with student satisfaction in this study. For example, a faculty who was satisfied with the online teaching experience in general did not necessarily lead to students being satisfied with online learning. This can be due to the small sample size I had, since I was only able to test this hypothesis in one institution. It can also be due to the fact that faculty and students were not living normal circumstances and were under different pressure. I believe further research needs to be done in this regard to advance and enhance the understanding of faculty and students' satisfaction.

When asked to state what they most liked about their online experience, faculty mentioned factors related to flexibility of online teaching and learning, not only because of time and place but also because of the range in study style that could be used, the way information is being presented, in addition to the variety of tools used. Furthermore, as social distancing was implemented worldwide faculty felt more secure to stay at home and teach online. During the interviews, faculty revealed that they were worried about the safety of their families and felt safer working from home during the

pandemic so that they reduce the chance of getting exposed to the virus. Consequently, faculty reported that online they were able to use a range of new innovative pedagogy such as adapting the use of online quizzes, E-books, videos, and engaging students in online discussions and group work while incorporating digital activities. Using such tools enhances the students' online learning experience (Young 2006, Stone, Freeman et al. 2019, Gelles, Lord et al. 2020, Mishra, Gupta et al. 2020, Yates, Starkey et al. 2021). Further innovative pedagogy can be used in the future such as data analytics, the use of artificial intelligence, virtual reality, and even the use of metaverse. HEI need to explore further interactions between virtual reality and the real world and the possibility of using different online platforms and tools for education.

c) Analyse the factors that contribute to the students' satisfaction during online teaching and learning.

In the students' survey, 64% of the students said they will enroll in blended courses and 37% said they will enroll in online courses. This shows promising numbers that HEI will probably see an acceleration on the demand of students' intention to join online classes. However, the survey questions did not specify what type of online courses participants would like to enroll in, such as HEI online courses or commercial courses such as Coursera. This is an area that could be further investigated in future research. The OTL during the pandemic was an experiment that has probably increased the acceptance of students towards OTL. There is a strong correlation between students coping with online due to flexibility and engagement and their decision to choose online in the future ($r=.459$, $p=0.000$), and there is a strong correlation between students coping with online due to flexibility and engagement and students satisfaction ($r=.464$, $p=0.000$). The significance of the results of this research is that students are more likely

going to enroll in online learning in the future post-pandemic (Johnston, Killion et al. 2005, Sahin and Shelley 2008, Palmer and Holt 2009, Bradford and Wyatt 2010, NurAwaleh and Kyei-Blankson 2010, Dziuban, Moskal et al. 2015, Gray and DiLoreto 2016).

As for the open-ended questions, these also have revealed that the most things students liked in the online experience were flexibility and being able to stay safe at home. These findings go along with other studies in this area (Hasan and Khan 2020, Nambiar 2020). The major concerns of dissatisfaction for both faculty and students in this study are the lack of resources and connection issues which aligns with many findings in previous research (Adnan and Anwar 2020, Fatonia, Nurkhayatic et al. 2020, Danchikov, Prodanova et al. 2021, Khan, Kamal et al. 2021, Maqableh and Alia 2021, Torres Martín, Acal et al. 2021). If resources and proper infrastructure are available they can play a positive role in the successful online educational transformation.

6.4 Conclusion

My work contributes to debates around ‘crisis management’ both in terms of how universities responded to delivery of teaching as the pandemic unfolded, and also in terms of potential implications for future crisis.

Post pandemic HEI will be under increasing pressure to improve their services and ensure appropriate student learning outcomes. With the economic disruption caused by the pandemic (Adedoyin and Soykan 2020), HEI will need to monitor their costs yet retain and acquire qualified faculty members on one hand, and implement appropriate resources to embrace digital transformation on the other hand. Online teaching and learning has proliferated during the pandemic and research has shown that the pandemic has accelerated the digital transformation (Kopp, Gröblinger et al. 2019). HEI had to manage the crisis and shifted to OTL

but the future post pandemic is still ambiguous. While HEI are now going back to normality post pandemic, it is unsure whether they will go back to their face to face model, use a hybrid model or move completely to online. The purpose of this research is to inform HEI leaders, practitioners, and policy makers about the implications of OTL and future research should be developed in this area to include more universities and different Schools that will help us getting a better picture of the future of HEI post pandemic.

Although OTL grew as an alternative mode of teaching to the traditional face to face teaching mode during the world pandemic (Mishra, Gupta et al. 2020), my research shows that some faculty and students are willing to teach and learn online in the future; implying that HEIs will embrace some kind of OTL activities post-pandemic but that depends on their willingness and preparation. For example, faculty members will be more willing to teach online if they have the proper institution support and the training and tools that would facilitate the different roles they have to play in online teaching. This means that, policymakers such as the university's president, president cabinet council of deans, and board of trustees need work on strategies and policies to support faculty and students in OTL. This can be done by providing appropriate infrastructure, resources, benefits, rewards, and release time to prepare for the online course and to ensure faculty satisfaction. Policymakers must recognize that policies, processes, and appropriate guidelines should be constantly evaluated to ensure compatibility and alignment with the university strategy with online teaching. Moreover, practitioners reflected in university faculty must be aware of the opportunities created by OTL and take advantage of the different tools, methods, and techniques that are enabled through online teaching to engage students. More importantly, faculty should acknowledge that OTL is a key factor in widening the span of roles that they must play; Faculty is no longer seen in the eyes of a student as only a lecturer, but a mentor and a coach as well, who will help build the foundations of the students'

life and career paths. Furthermore, as technological advancement is ever-changing and OTL is the future, artificial intelligence must be a key anchor to rely on to improve how teaching and learning activities are implemented online. Metaverse for example can be a new dimension that education can incorporate in its online teaching and learning strategy. It originates from combining the word meta with the word universe and refers to a three-dimensional world where individuals create avatars to engage in social, economic, political, as well as cultural activities (Park and Kim 2022). If academia succeeded in implementing such future-oriented technology in OTL curriculums, students might have the opportunity to live a revolutionized experience, making the most of their senses to learn and gain knowledge. With that said, university decision-makers should additionally consider hiring human capital who are experts in Artificial intelligence such as virtual reality specialists and certified metaverse experts. Given the importance of resuming education during a crisis or emergencies, I believe my findings will be valuable to other Schools in Higher Education and not only to Business Schools that will need to engage in online teaching and learning in theory and in practice.

This research concludes that a major implication to HEI is to pay attention to develop appropriate OTL strategies to be adopted in the future either amid a crisis or even moving forward post the pandemic. Higher education leaders need to guide the institution in the direction of embracing online teaching and learning and implementing the online strategy. The strategy will need to align with new policies that aim to improve online education and help sustain the viability of the institution. For example, I would advise based on my research that HEI work on policies specific to the ethical behavior in the online environment, the faculty role and support, student support, evaluation and assessment online. Faculty and students will need to receive appropriate information, teaching and learning strategies, in addition to methodologies to meet students demands and enhance their satisfaction with online teaching and learning experience.

From the results presented in chapter 4 and 5, I am confident in saying that the impact of online teaching and learning during the Covid-19 pandemic is the beginning of a new chapter in the history of Online Teaching and Learning in HEIs. However, the details of this new chapter are still not clear and need further investigations as we need to address the OTL initiatives in different countries and look at how to reduce the digital gap and improve all students and faculty engagement using evolving technology while maintaining quality of education. The sudden online shift did not only affect faculty and students but also all the institution constituents. This experience has had its strengths and weaknesses. While on one side faculty and students felt safe working from home and avoiding the virus, enjoying the online flexibility, the tools used, and the different roles they played, on the other side they were working under uncertainties, they missed their comfort zones, and struggled with the lack of training and limited resources. Some faculty and students have faced problems moving to the online mode, yielding to stress and challenges; but with the support of their institutions, other faculty and students have enjoyed the experience and most believe that the future will be hybrid. Admittedly, this is not surprising as online education has started years before the pandemic and was studied in the literature. The pandemic has accelerated the process of worldwide adoption of the online teaching and learning. Given these findings, one might ask the question: “how much is this online teaching and learning adoption attributed to the pandemic, and what will be the future of HEI?”.

This is a difficult question to answer at this stage but from my research findings faculty and students agreed to a large extent that the future of teaching will include online or hybrid elements: 64% and 37% of students surveyed will enroll in blended and online courses respectively in the future, and 87% and 90% of faculty surveyed will teach online and blended courses respectively This means that the pandemic accelerated the acceptance of OTL and that

faculty and student are now more prone in adopting this mode of teaching and learning. While this is an opportunity for a change in HEI, it is only feasible when adopted at the global level, country level, and at the institutional level. There needs to be a process in implementing online teaching as first we need to have proper infrastructure and resources, legislation, policies and training. Following this approach yields to a change in people's mindset that very effectively will help avoiding online rejection. The success of online teaching depends on having proper infrastructure at the country and institutional level. It is the job of the government to ensure proper cabling, networking, and necessary rules and regulations. Then it is the job of the institutions to have a proper budget for ensuring proper resources and tools as well as dedicated CIS or IT teams. Then, training and policies will reduce uncertainties and will eliminate the lack of knowledge and uncertainties faced by students and faculty. The acceptance of online teaching and learning at the global level will support its acceptance at the local level. Faculty and students were generally satisfied with online teaching and learning during the pandemic, and this leads us to the following conclusion: Now that students and faculty experienced online teaching and learning during very challenging times, going back to traditional teaching formats might be challenging. Both student and faculty mindsets are ready to embrace a change in the teaching mode post Covid-19 but the level of change is yet to be explored. Key themes I have identified are that faculty play a different role in OTL and therefore will have different skills and students are now more engaged in the teaching and learning process; therefore, they both need proper tools and support to continue using the mode of teaching they used during emergency but in a more planned manner.

We can regard OTL usage worldwide during Covid-19 as an experiment in addition to the interviews and quantifiable data reported in this study. It is difficult however to imagine that all institutions would embrace such a mode of teaching post Covid at the same scale and many

factors come into play such as financing, resources, training, legislation. Additionally, one would believe a merge might happen between universities in the future, especially when there is scarcity in resources and funds. Alternatively, joint efforts between HEI can yield to sharing good practices and reduced risks. Furthermore, there is a perception that HEI resist change so combining efforts and working together might alleviate those challenges. Additionally, HEI need to specify their goals for their institution in encapsulating OTL as part of their strategy. Fulfilling this goal should not be seen as a threat anymore but should be invested in to support the survival of HEI. Given both the quantitative and qualitative results of this study, the future of this research lays in the investigation of how HEI should move forward. At the most basic level, the results from the surveys and interviews can be used to calibrate the challenges faced such as the lack of resources and training. At a deeper level, HEI should learn from the crisis and ultimately find the best ways of dealing with uncertainties by being better prepared for any future crisis. Furthermore, HEI can combine efforts and adjust the ways they have dealt with the crisis by inferring from the pandemic experience. An interesting challenge for future research would be to find conditions in which faculty and students can learn and adapt to uncertainties in different schools and not only in business schools. This study is limited to business schools only and it needs to be expanded to other areas. Not only should we study other areas, but we should study how to use OTL in a way to better prepare HEI in the future to be resilient and face any type of shock or crisis. HEI need to focus on creating proper online strategies, and finding appropriate ways to implement and evaluate its goals and objectives. Furthermore, as technology is evolving digital transformation should be used for the benefit of both faculty and students teaching and learning.

6.5 Limitations

In drawing this study to a close, I believe there needs to be further studies focusing on the OTL in different types of private and public institutions with a more stochastic approach. This research has highlighted that OTL in HEI deserves further exploration not only at the Business Schools level but also across other Schools and disciplines. Although my research highlighted the factors that contributed to faculty and students satisfaction with OTL during the pandemic, there still need to be future research that leads towards developing a new theory for the implementation of OTL in HEI. This can be done through developing a new survey instrument, collecting further data from faculty and students, interviewing more faculty, interviewing students and conducting focus groups. Further analysis needs to be carried out to evaluate the OTL pedagogy approach that will lead to a new theory.

6.6 The Future

The pandemic has made the HEI juggle with several balls in the air hoping not to let any of them drop. They had to deal with economic, political, health, and academic issues (Bower, Leonard et al. 2020). All that has created a complex environment and a crisis landscape of pressure. All challenges faced during the pandemic will need to be put together to learn from them and fuel the future of HEI with successfully adopting online teaching and learning post pandemic (Adedoyin and Soykan 2020). HEI aim to remain viable, maintain high standards, have high reputation, and lead in their fields. However, first and foremost, students and faculty are their prime asset (Kennette and Redd 2015, Glazier and Harris 2021).

As OTL moves forward I would like to end with one last thought. A thought that was mentioned previously in my thesis that I would like to ensure it is highlighted. Any change in HEI must consider the human capital. By human in this case I mean faculty and students. I also dare saying faculty before students. The fact that, in the end, education is delivered by the faculty to students means that any change or implementation of a new mode of teaching and learning

must include faculty and students as part of the decision process. Therefore, the move to online or hybrid post Covid-19 needs to incorporate ideas and thoughts from both constituents, and this will ultimately bring them onboard and reduce any resistance that might occur in adopting online teaching and learning.

Appendices

Appendix 1- Ethical Approvals



Institutional Review Board (IRB)

لجنة الأخلاقيات

NOTICE OF IRB EXEMPTION DETERMINATION

To:	Ms. Samar Makhoul	APPROVAL ISSUED: 2 July 2020 Dr. Jordan Srour
	EXPIRATION DATE: 2 July 2022	
	Assistant Professor School of Business	REVIEW TYPE: EXEMPT CATEGORY B
	Date: July 2, 2020	
RE:	IRB #: LAU.SOB.JS1.2/Jul/2020 Protocol Title: <i>Unlocked During Lockdown: The Impact Of Online Learning On Faculty And Students At Higher Education Institutions After COVID-19 Pandemic</i>	

Your application for the above referenced research project has been reviewed by the Lebanese American University, Institutional Review Board (LAU IRB). This research project qualifies as exempt under the category noted in the Review Type

This notice is limited to the activities described in the Protocol Exempt Application and all submitted documents listed on page 2 of this letter. **Final reviewed consent documents or recruitment materials and data collection tools released with this notice are part of this determination and must be used in this research project.**

CONDITIONS FOR ALL LAU NOTICE OF IRB EXEMPTION DETERMINATION

LAU RESEARCH POLICIES: *All individuals engaged in the research project must adhere to the approved protocol and all applicable LAU IRB*

Research Policies. PARTICIPANTS must NOT be involved in any research related activity prior to IRB notice date or after the expiration date.

EXEMPT CATEGORIES: *Activities that are exempt from IRB review are not exempt from IRB ethical review and the necessity for ethical conduct.*

PROTOCOL EXPIRATION: *The LAU IRB notice expiry date for studies that fall under Exemption is 2 years after this notice, as noted above. If the study will continue beyond this date, a request for an extension must be submitted at least 2 weeks prior to the Expiry date.*

MODIFICATIONS AND AMENDMENTS: *Certain changes may change the review criteria and disqualify the research from exemption status; therefore, any proposed changes to the previously IRB reviewed exempt study must be reviewed and cleared by the IRB before implementation.*

RETENTION: *Study files must be retained for a period of 3 years from the date of project completion.*

IN THE EVENT OF NON-COMPLIANCE WITH ABOVE CONDITIONS, THE PRINCIPAL INVESTIGATOR SHOULD MEET WITH THE REPRESENTATIVES OF THE IRB OFFICE IN ORDER TO RESOLVE SUCH CONDITIONS. IRB CLEARANCE CANNOT BE GRANTED UNTIL NON-COMPLIANT ISSUES HAVE BEEN RESOLVED.

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If you have any questions concerning this information, please contact the IRB office by email at irb@lau.edu.lb



The IRB operates in compliance with the national regulations pertaining to research under the Lebanese Minister of Public Health's Decision No.141 dated 27/1/2016 under LAU IRB Authorization reference 2016/3708, the international guidelines for Good Clinical Practice, the US Office of Human Research Protection (45CFR46) and the Food and Drug Administration (21CFR56). LAU IRB U.S. Identifier as an international institution: FWA00014723 and IRB Registration # IRB00006954 LAUIRB#1

Dr. Joseph Stephan

Chair, Institutional Review Board

DOCUMENTS SUBMITTED:

LAU IRB Exempt Application	Received 16 June 2020
Research Proposal Submission Form	Received 23 June 2020
Cover Page	Received 16 June 2020
Informed Consent	Received 16 June 2020, amended 30 June 2020
Faculty interview questions	Received 16 June 2020, amended 30 June 2020
Faculty satisfaction survey	Received 16 June 2020, amended 30 June 2020
Student Survey	Received 16 June 2020, amended 30 June 2020
Durham Ethical approval	Received 16 June 2020
IRB Comments sent: 24 June 2020 30 June 2020	PI response to IRB's comments dated: 25 June 2020 30 June 2020
CITI Training – Jordan Srour	Cert.# 29082043 (dated 10 June 2019)
NIH Training – Samar Aad Makhoul	Cert.# 2411243 (dated 6 June 2017)



Ethics <no-reply@sharepointonline.com>

Thu 6/11/2020 2:01 PM

To:

AAD, SAMAR S.

Cc:

HARDEY, MARIANN

Please do not reply to this email.

Dear Samar,

Your supervisor has reviewed your ethical review form, and confirmed ethical approval for the following project:

Title: Unlocked during lockdown: The impact of online learning on faculty and students at Higher Education Institutions after COVID-19 pandemic.

Supervisor: HARDEY, MARIANN

Start Date: 08 July 2020

End Date: 08 July 2021

Application Reference: DUBS-2020-06-11T10:54:03-wchz36

Please be aware that if you make any significant changes to your project which mean that ethical approval may be required, you should complete and submit a revised ethical review form.

Appendix 2- Invitation Email

Dear XX,

I am writing to you to take part in a survey about the impact of online learning on faculty and student.

This research is part of my Doctorate thesis at Durham university titled, “**Unlocked during lockdown: The impact of online learning on faculty and students at Higher Education Institutions after COVID-19 pandemic**”.

Over the next month I will be collecting data from faculty and students. This data will help me understanding the impact of online learning during the COVID-19 crisis and the feelings and issues faculty/students/support staff have faced.

The survey will take between 15 to 25 minutes.

Your participation will be a valuable addition to my research and findings could lead to a framework and my aim is the results will help inform higher education institutions about new methods to successfully apply models of online learning.

If you accept to be part of this research, and you leave your contact details at the end of the survey you will receive a full written summary of the project and its results.

This Project has received ethical approval from Durham University:

Reference:

DUBS-2020-06-11T10:54:03-wchz36

Date of ethical approval: 11, June, 2020.

The project has also received ethical approval from the Lebanese American University (An AACSB accredited school) where I work as the Lead Accreditation and Continuous

Improvement Coordinator: IRB

#: LAU.SOB.JS1.2/Jul/2020

Link to both surveys below:

[Faculty Survey](#)

[Student Survey](#)

I am conducting interviews with faculty and Deans in AACSB schools, and I would appreciate your support, if you could let me know if you are interested or someone from your school who would be willing to take part in those interviews.

If you have any questions or concerns related to this research, don't hesitate to contact me.

Looking forward to your reply

Best regards

Samar Aad

Appendix 3- Faculty Survey

Faculty satisfaction

This survey is part of my Doctorate thesis.

The research question is what will be the impact of online learning on faculty and students at Higher Education Institutions during and moving out of the COVID-19 pandemic?

It aims at providing insights to enable HEI to better embrace online learning as a new model of pedagogical innovation.

This research aims to advance understanding of the impact of online teaching and learning has on faculty and students in HEI during and moving out of the COVID-19 crisis and the repercussion this will have on the future of online teaching and learning in HEI with a specific focus on AACSB business accredited private schools.

By continuing with this survey, you agree with the following statements:

1. I have been given sufficient information about this research project.
2. I understand that my answers will not be released to anyone and my identity will remain anonymous.
3. I understand that all responses I provide for this study will remain confidential. When the results of the study are reported, I will not be identified by name or any other information that could be used to infer my identity. Only researchers will have access to view any data collected during this research however, data cannot be linked to me.
4. I understand that I may withdraw from this research any time I wish and that I have the right to skip any question I don't want to answer
5. I understand that my refusal to participate will not result in any penalty or loss of benefits to which I otherwise am entitled to.
6. I have been informed that the research abides by all commonly acknowledged ethical codes and that the research project has been reviewed and approved by the Institutional Review Board at the Lebanese American University
7. I understand that if I have any additional questions, I can ask the research team listed below.
8. I have read and understood all statements on this form.
9. I voluntarily agree to take part in this research project by completing the following questionnaire.

If you have any questions, you may contact:

Name (PI) Phone number Email address
Samar Aad Makhoul +961 71 257 739 samar.makhoul@lau.edu.lb

when the results of the study are reported no name or other information will be shared that could be used to infer your identity.

Instructions: This survey should take approximately 25 minutes to complete. Please indicate your level of agreement or disagreement with the following statements by checking one of the responses for each statement. Please note that your participation in this study is entirely voluntary and you always have the right to withdraw from the study at any time by exiting the survey.

All responses and data for this study will be anonymously collected and no connection to the individual participant will be kept. By completing this survey, you are granting consent to the researcher to use the data for research.

This Project has received ethical approval from Durham University:

Project Title: Unlocked during lockdown: The impact of online learning on faculty and students at Higher Education Institutions after COVID-19 pandemic; Reference: DUBS-2020-06-11T10:54:03-wchz36

Date of ethical approval: 11, June, 2020.

This project has received ethical approval from the Lebanese American University:

IRB #: LAU.SOB.JS1.2/Jul/2020

*** Required**

1. I agree to take part in this survey: *

Mark only one oval.

Yes

No

Start Survey

2. Gender

Mark only one oval.

Male

Female

Prefer not to say

3. Age
-

4. Educational level

Mark only one oval.

BS/BA

MS/MA/MBA

Phd/DBA

Others

5. Employment status

Mark only one oval.

- Full time- tenure track but not tenured
- Full time- tenure track and tenured
- Full time- None tenure track
- Part time

6. Years of experience

Mark only one oval.

- 5 year or less
- 6-10
- 11-15
- 16-20
- 21-25
- 26 or more

7. Position

Mark only one oval.

- Lecturer
- Senior lecturer
- Instructor
- Senior Instructor
- Assistant professor
- Associate professor
- Full professor

8. Have you taught courses that were completely online or blended with face-to-face class time with students before COVID-19?

Mark only one oval.

- I have taught classes that were completely online (fully online with no face-to-face or seat time)
- I have taught classes that have combined an online experience with face-to-face class time (Blended)
- I have only taught face-to-face classes

9. Do you live alone?

Mark only one oval.

- Yes
- No

10. Do you have a caring role that requires you to look after someone at home?

Mark only one oval.

- Yes
- No

11. Do you have a quiet place at home dedicated for your work?

Mark only one oval.

- Yes
- No

enthusiastic about their online learning than their traditional face to face learning.

14. How satisfied are you with the online teaching in relation

Mark only one oval per row.

	Very satisfied	Satisfied	Neutral	Dissatisfied	Strongly Dissatisfied	Not applicable
to your experiences with students?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to your experiences with your institution?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to your own personal experiences?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. I incorporate fewer resources when teaching an online course as compared to traditional teaching. (1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not Applicable)

Mark only one oval.

	1	2	3	4	5	Not Applicable
Strongly Agree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. The technology I use for online teaching is reliable. (1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not Applicable)

Mark only one oval.

	1	2	3	4	5	Not Applicable
Strongly Agree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. What do you like least about teaching online?

18. What do you like the most about teaching online?

19. Is there anything else you wish to share?

20. Will you teach online courses if you have the option not to?

Mark only one oval.

Yes *Skip to question 22*

No *Skip to question 21*

Factors affecting your decision to teach online

21. If your response was no to the above question then Which of the following factors will contribute to your decision to teach or design a fully on-line course? (Please check all that apply.)

Check all that apply.

- Availability of appropriate sources of technology (hardware/Software).
- Appropriate support and training
- Online course offerings enhance the quality of our institution's reputation.
- Available compensation for online course development and teaching.
- I am familiar with effective pedagogy for online teaching.
- Effective student's interaction and engagement
- Engagement with colleagues and sharing good online practices and experiences
- Appropriate time and money given to online course designs
- Online teaching considered in promotion
- Being involved in the design on online courses.
- Online learning is legally recognized in my country.
- The use of artificial intelligence, virtual reality and other advance technology to facilitate my tasks.

Faculty satisfaction

22. Will you teach blended courses if you have the option not to?

Mark only one oval.

- Yes
 No

23. Students expect to receive more communication from me in the online course than in the face-to-face course. (1. Strongly Agree 2. Agree 3. Disagree 4. Strongly Disagree 5. Not Applicable)

Mark only one oval.

	1	2	3	4	5	
Strongly Agree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not Applicable

24. Do you want to receive the results of this research?

Mark only one oval.

Yes

No

Please enter your email address

email address OPTIONAL

25. Please enter your email address

Thank you for taking part in this research.



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Google Forms

Appendix 4- Student Survey

Student satisfaction

This survey is part of my Doctorate thesis.

The research question is what will be the impact of online learning on faculty and students at Higher Education Institutions during and moving out of the COVID-19 pandemic?

It aims at providing insights to enable HEI to better embrace online learning as a new model of pedagogical innovation.

This research aims to advance understanding of the impact of online teaching and learning has on faculty and students in HEI during and moving out of the COVID-19 crisis and the repercussion this will have on the future of online teaching and learning in HEI with a specific focus on AACSB business accredited private schools.

By continuing with this survey, you agree with the following statements:

1. I have been given sufficient information about this research project.
2. I understand that my answers will not be released to anyone and my identity will remain anonymous.
3. I understand that all responses I provide for this study will remain confidential. When the results of the study are reported, I will not be identified by name or any other information that could be used to infer my identity. Only researchers will have access to view any data collected during this research however, data cannot be linked to me.
4. I understand that I may withdraw from this research any time I wish and that I have the right to skip any question I don't want to answer
5. I understand that my refusal to participate will not result in any penalty or loss of benefits to which I otherwise am entitled to.
6. I have been informed that the research abides by all commonly acknowledged ethical codes and that the research project has been reviewed and approved by the Institutional Review Board at the Lebanese American University
7. I understand that if I have any additional questions, I can ask the research team listed below.
8. I have read and understood all statements on this form.
9. I voluntarily agree to take part in this research project by completing the following questionnaire.

If you have any questions, you may contact:

Name (PI) Phone number Email address
Samar Aad Makhoul +961 71 257 739 samar.makhoul@lau.edu.lb

when the results of the study are reported no name or other information will be shared that could be used to infer your identity.

Instructions: This survey should take approximately 25 minutes to complete. Please indicate your level of agreement or disagreement with the following statements by checking one of the responses for each statement. Please note that your participation in this study is entirely voluntary and you always have the right to withdraw from the study at any time by exiting the survey.

All responses and data for this study will be anonymously collected and no connection to the individual participant will be kept. By completing this survey, you are granting consent to the researcher to use the data for research.

This Project has received ethical approval from Durham University:

Project Title: Unlocked during lockdown: The impact of online learning on faculty and students at Higher

Education Institutions after COVID-19 pandemic; Reference: DUBS-2020-06-11T10:54:03-wchz36

Date of ethical approval: 11, June, 2020.

This project has received ethical approval from the Lebanese American University:

IRB #: LAU.SOB.JS1.2/Jul/2020

* Required

1. I agree to take part in this survey: *

Mark only one oval.

Yes

No

Start Survey

2. Gender

Mark only one oval.

Male

Female

Prefer not to say

3. Your Age

Mark only one oval.

18-22

23-27

28-33

34-older

4. What is the level of education you are enrolled in?

Mark only one oval.

- Bachelor degree
- Master's
- Doctorate
- Other

5. What is your current employment status?

Mark only one oval.

- Employed full time
- Employed part time
- Not employed

6. Have you been enrolled in courses that were completely online or blended with face-to-face class time with students before COVID-19?

Mark only one oval.

- I have been enrolled in classes that were completely online (fully online with no face-to-face or seat time)
- I have been enrolled in classes that have combined an online experience with face-to-face class time (Blended)
- I have been enrolled in face-to-face classes only

7. Do you live alone?

Mark only one oval.

- Yes
- No

8. Do you have a caring role that requires you to look after someone at home?

Mark only one oval.

Yes

No

9. Do you have a quiet place at home dedicated for your work?

Mark only one oval.

Yes

No

instructor regarding course
related matters.

It is valuable to me that I can
access my online course from
any place in the world.

My participation level in the
class discussions in the online
setting is lower than in the
traditional one.

I am able to use a wider range
of resources in the online
setting than in the traditional
one.

Technical problems do not
discourage me from learning
online.

I receive proper guidelines and
instructions about learning
online.

Not meeting my online
instructor face-to-face is a
concern to me

I am concerned about receiving
lower grade in the online course
as compared to the traditional
one.

It is more difficult for me to be
motivated in online
environment than in the
traditional setting.

12. How satisfied or dissatisfied are you with the online learning in relation to your experiences

Mark only one oval per row.

	Very satisfied	Satisfied	Neutral	Dissatisfied	Strongly Dissatisfied	Not applicable
to your experiences with your professors?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to your experiences with your institution?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to your own personal experiences?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. What do you like least about learning online?

14. What do you like the most about learning online?

15. Is there anything else you wish to share?

16. Will you enroll in an online courses if you have the option not to?

Mark only one oval.

- Yes *Skip to question 18*
 No *Skip to question 17*

Factors affecting your decision to teach online

17. If your response was no to the above question then Which of the following factors will contribute to your decision to be enrolled in a fully on-line course? (Please check all that apply.)

Check all that apply.

- Availability of appropriate sources of technology (hardware/Software).
 Appropriate support and training
 Effective student's interaction and engagement
 Engagement with other students and sharing good online practices and experiences
 Reduction in course fees
 Online teaching considered in promotion
 Online learning is legally recognized in my country.
 The use of artificial intelligence, virtual reality and other advance technology to facilitate my tasks.

Student satisfaction

18. Will you enroll in blended courses if you have the option not to?

Mark only one oval.

- Yes
 No

19. How satisfied or dissatisfied are you with the below statement

Mark only one oval per row.

	Very satisfied	Satisfied	Neutral	Dissatisfied	Strongly Dissatisfied	Not applicable
I expect my professor to be available and respond to me within 24 hours if I have a question or want to raise a query with them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Appendix 5- Faculty Interview questions

Faculty interview questions

The purpose of this study is to investigate the impact of online learning on faculty and students in HEI Business Schools during and moving out of the COVID-19 pandemic. This will help to inform a new pedagogical framework for online teaching and learning that will inform and support Business Schools worldwide to have a successful experience with this mode of teaching. Your experience and expertise have a bearing on this research, and you have experienced the online teaching and learning during this crisis.

Your data will be anonymous, so nothing you say will be associated with your name, which will be replaced with a *participant number* when the data is processed. When the results of the study are reported no name or other information will be shared that could be used to infer your identity.

This Project has received ethical approval from Durham University and LAU IRB approval.

Project Title: **Unlocked during lockdown: The impact of online learning on faculty and students at Higher Education Institutions after COVID-19 pandemic;**

Reference: DUBS-2020-06-11T10:54:03-wchz36

Date of ethical approval: 11, June, 2020.

By continuing with the Interview, you agree with the following statements:

1. *I have been given sufficient information about this research project.*
2. *I understand that my answers will not be released to anyone and my identity will remain anonymous.*
3. *I understand that all responses I provide for this study will remain confidential. When the results of the study are reported, I will not be identified by name or any other information that could be used to infer my identity. Only researchers will have access to view any data collected during this research however, data cannot be linked to me.*
4. *I understand that I may withdraw from this research any time I wish and that I have the right to skip any question I don't want to answer*
5. *I understand that my refusal to participate will not result in any penalty or loss of benefits to which I otherwise am entitled to.*
6. *I have been informed that the research abides by all commonly acknowledged ethical codes and that the research project has been reviewed and approved by the Institutional Review Board at the Lebanese American University*
7. *I understand that if I have any additional questions, I can ask the research team listed below.*
8. *I have read and understood all statements on this form.*

I voluntarily agree to take part in this research project by completing the following questionnaire.

Yes

No



If you have any questions, you may contact:

<i>Name (PI)</i>	<i>Phone number</i>	<i>Email address</i>
<i>Samar Aad Makhoul</i>	<i>+961 71 257 739</i>	<i>samar.makhoul@lau.edu.lb</i>

If you have any further questions about your rights as a participant in this study, or you want to talk to someone outside the research, please contact the:

IRB Office

*Lebanese American University
3rd floor, Dorm A, Byblos Campus
Tel: 00 961 1 786456 ext. 2546*

1. Tell me about yourself, your position, how long have you been at this university, the subject you teach, which school?
2. Prior to COVID-19 did your university offer any type of online learning?
 - a. What was 'offered' and how were faculty involved?
3. Before COVID-19 have you received any training to work with online tools?
4. During the university closure how were you asked to move teaching online? (Probe to find if faculty were consulted before or during COVID-19 if they were confident and willing to teach online)
5. How did you feel about the shift to online teaching?
6. How have you approached your students online? For example, have been able to set guidelines, send emails remind them about the time and date of the classes?
7. How have you structured your class online?
 - a. What type of activities did you use to engage the students?
 - b. What online tools, LMS did you use?
8. From your experience what do you believe is needed to help students acquire the necessary knowledge required to achieve the course learning objectives?
9. how have you been able to measure student's engagement?
 - a. What about their satisfaction, do you believe students were happy with the online learning during COVID-19? How will this experience affect their decision in opting for an online course in the future if they had the choice?
10. What are the factors needed to help you achieving a successful online experience and to encourage you teaching online not only during crisis but also in a normal academic year?



(Probe to find if they were happy with the experience during COVID-19, what made them happy or otherwise and what is needed in the future to lead to their satisfaction)

11. What kind of support did you get from professional IT staff?
12. Do you believe that online teaching during COVID-19 will accelerate phasing out face to face learning immediately? will it have a long-term impact?
13. What will make you shift your teaching 100% online if you had the choice?
14. To what extent do you believe online learning will be a pedagogical innovation that will be embraced by top ranked universities? (Probe to find if they believe there is a difference between face to face pedagogy and online pedagogy)
 - a. Since you belong to an AACSB accredited school do you think the accreditation board will adjust their standards in order to incorporate the online learning ?
15. Is your university going to offer in the near future more online courses?
 - a. And do you think they will invest and consider shifting to online teaching modality in a way to attract and retain more students and also target international students? Or even lead to a decrease in tuition fees?

Demographic questions

Demographic questions and professional experience:

Q1. Gender

1. Male
2. Female
3. Prefer not to say

Q2. Year of birth

1. 1965-earlier
2. 1966-1976
3. 1977-1994
4. 1975-later

Q3. Educational level

1. BS/BA
2. MS/MA/MBA
3. Phd/DBA
4. Other

Q4. Employment status

1. Full time with tenure
2. Full time with no tenure
3. Part time
4. Other – please state

Q5. Years of experience

1. 5 year or less
2. 6-10
3. 11-15
4. 16-20
5. 21-25
6. 26 or more

Q6. Position



1. Lecturer
2. Senior lecturer
3. Instructor
4. Senior Instructor
5. Assistant professor
6. Associate professor
7. Full professor

Q7. What is the name of your university?

Q8. Have you taught courses that were completely online or blended with face-to-face class time with students before COVID-19?

1. I have taught classes that were completely online (fully online with no face-to-face or seat time)
2. I have taught classes that have combined an online experience with face-to-face class time (Blended)
3. I have only taught face-to-face classes

Household demographic

Q9. Do you live alone?

- Yes
- No

Q10. Do you have dependents or a caring role at home?

- Yes
- No

Q11. Do you have a quiet place at home dedicated for your work?

- Yes
- No



Appendix 6- Interviews demographics and schedule

	position	gender	age	Residence	education	employment status	years of experience	online teaching pre covid	living status	caring role	quiet place at home	will you teach online	Future of education is hybrid	Interview date
1	Associate professor and HRM institute director	F	54	EMEA	Phd	Full time	26 or more	No	Alone	No	Yes	Yes	Yes	5-Jun-20
2	Full professor Chairman hospitality department	M	58	EMEA	Phd	Full time	26 or more	No	Not alone	No	Yes	No	Yes	10-Jun-20
3	Assistant professor- AVP Finance	F	60	EMEA	Phd	Full time	26 or more	No	Alone	No	Yes	No	Yes	15-Jun-20
4	Full professor-VP for univerity advancement	M	74	EMEA	Phd	Full time	26 or more	No	Not alone	No	Yes	Yes	Yes	20-Jun-20
5	Full professor Dean- School of business	M	59	EMEA	Phd	Full time	26 or more	Yes	Not alone	No	Yes	No	Yes	28-Jun-20
6	Associate professor -Director of institute	F	45	EMEA	Phd	Full time	16-20 years	Yes	Not alone	Yes	Yes	No	no	9-Jul-20
7	Full professor Dean- School of business	M	58	EMEA	Phd	Full time	26 or more	No	Not alone	No	Yes	Yes	Yes	10-Jul-20
8	Assistant professor -Director of institute	M	33	EMEA	Phd	Full time	5-10 years	No	Not alone	No	Yes	Yes	Yes	15-Jul-20
9	Senior Lecturer- works in industry	F	41	Americas	PhD	Part time	16-20 years	Yes	Not alone	Yes	Yes	Yes	Yes	22-Jul-20
10	Assistant professor-Chairperson	M	37	Americas	PhD	Full time	5-10 years	Yes	Not alone	No	Yes	Yes	Yes	28-Jul-20
11	Full professor Dean- School of business	M	46	EMEA	PhD	Full time	16-20 years	No	Not alone	No	Yes	Yes	Yes	29-Jul-20
12	Associate professor and chairperson	M	44	EMEA	PhD	Full time	16-20 years	No	Not alone	Yes	Yes	Yes	Yes	30-Jul-20
13	Associate professor - Director of EMBA	F	42	EMEA	PhD	Full time	16-20 years	No	Not alone	Yes	Yes	Yes	Yes	2-Sep-20
14	Associate professor-Assistant chairperson	M	45	EMEA	PhD	Full time	16-20 years	No	Not alone	Yes	Yes	Yes	Yes	11-Sep-20
15	Full professor-chairperson	F	52	EMEA	Phd	Full time	26 or more	No	Not alone	No	Yes	Yes	Yes	10-Oct-20
16	Full Professor-associate dean for graduate programs	M	58	Asia Pacific	Phd	Full time	26 or more	yes	Not alone	no	Yes	Yes	Yes	13-Oct-20
17	Associate professor-Assistant Dean	M	59	EMEA	Phd	Full time	16-20 years	No	Not alone	No	Yes	Yes	Yes	4-Nov-20
18	Associate professor and assistant chairperson	M	53	EMEA	Phd	Full time	16-20 years	No	Not alone	No	Yes	Yes	Yes	10-Nov-20
19	Associate professor and assistant provost	F	49	EMEA	Phd	Full time	16-20 years	No	Not alone	Yes	Yes	Yes	Yes	19-Nov-20
20	Associate professor- Chairperson	F	48	EMEA	Phd	Full time	16-20 years	No	Not alone	Yes	Yes	Yes	Yes	25-Nov-20
21	Associate professor- Chairperson	F	54	EMEA	Phd	Full time	16-20 years	No	Not alone	No	Yes	Yes	Yes	3-Dec-20
22	Associate professor- Chairperson	F	55	EMEA	Phd	Full time	16-20 years	No	Not alone	No	Yes	Yes	Yes	9-Dec-20
23	Associate professor- Chairperson	F	57	EMEA	PhD	Full time	16-20 years	No	Not alone	No	Yes	Yes	Yes	11-Jan-21
24	Associate professor- Chairperson	F	53	EMEA	PhD	Full time	16-20 years	No	Not alone	No	Yes	Yes	Yes	20-Jan-21
25	Full professor-Dean	M	60	Asia Pacific	PhD	Full time	16-20 years	Yes	Not alone	No	Yes	Yes	Yes	27-Jan-21
26	Associate professor- Chairperson	M	55	Asia Pacific	PhD	Full time	16-20 years	Yes	Not alone	No	Yes	Yes	Yes	2-Feb-21
27	Full professor-Dean	M	57	Asia Pacific	PhD	Full time	16-20 years	Yes	Not alone	No	Yes	Yes	Yes	9-Feb-21
28	Associate professor- Chairperson	M	48	Asia Pacific	PhD	Full time	16-20 years	Yes	Not alone	No	Yes	Yes	Yes	17-Feb-21
29	Full professor-Dean	F	59	Asia Pacific	PhD	Full time	16-20 years	Yes	Not alone	No	Yes	no	no	5-Mar-21
30	Full professor-Dean	M	58	Asia Pacific	PhD	Full time	16-20 years	Yes	Not alone	No	Yes	Yes	Yes	18-Mar-21

Appendix 7- Faculty Survey demographics

Demographic Characteristics	N	Percentage
Sex		
Prefer not to say	1	0.3
Female	203	62.5%
Male	121	37.2%
Years of Experience		
5 Years or less	30	9.2%
6-10	27	8.3%
11-15	38	11.7%

16-20	161	49.5%
-------	-----	-------

21-25	37	11.4%
-------	----	-------

26 or more	32	9.8%
------------	----	------

Position Full Professor	63	19.4%
-----------------------------------	----	-------

Associate Professor	31	9.5%
---------------------	----	------

Assistant Professor	130	40%
---------------------	-----	-----

Senior Instructor	42	12.9%
Instructor	17	5.2%
Senior Lecturer	27	8.3%
Lecturer	15	4.6%
Employment Status		
Full time- tenure track and tenured	46	14.2%
Full time- tenure track but not tenured	168	51.7%

Full time- None tenure track	32	9.8%
Part Time	74	22.8%

Appendix 8- Student Survey demographics

Demographic Characteristics	N	Percentage
Sex		
Female		52.4%
Male	301	47%
Prefer not to say	270 3	0.5%
Level of Education		
Doctorate	6	1%
Master's	86	15%
Bachelor's degree	464	80.8%
Other	18	3.1%

Employment Status		
Employed Full time	61	10.6%
Employed Part time	66	11.5%
Not employed	447	77.9%
Online Learning		
classes that have combined an online experience with face to face	265	46.2%
classes that were completely online	100	17.4%
Classes completely F2F	206	35.9%

Appendix 9- Surveys questions codes

Faculty Satisfaction Survey

Questions	Code
The level of my interactions with students in the online course is higher than in a traditional face to face class.	FSS1
The flexibility provided by the online environment is important to me.	FSS2
My online students are actively involved in their learning.	FSS3
I incorporate fewer resources when teaching an online course as compared to traditional teaching.	FFS4*
The technology I use for online teaching is reliable .	FFS5
I have a higher workload when teaching an online course as compared to the traditional one.	FSI6*
I miss in-person face-to face contact with students when teaching online.	FSS7
I do not have any problems controlling my students in the online environment.	FFS8
I look forward to teaching my next online course.	FSG9
My students are very active in communicating with me regarding online course matters.	FSS10
I appreciate that I can access my online course any time it is convenient to me.	FSS11
My online students are more enthusiastic about their online learning than their traditional face to face learning.	FSS12
Online teaching is often frustrating because of technical problems .	
It takes me longer to prepare for an online course on a weekly basis than for a face-to- face course.	
I have to be more creative in terms of the resources used for the online course.	FFS13* FFS14*
	FSI15*

I am satisfied with the use of communication tools in the online environment (e.g., chat rooms, threaded discussions, etc.).	FSS16
I am able to provide better feedback to my online students on their performance in the course.	FSS17
I am more satisfied with teaching online as compared to other delivery methods.	FSG18
My online students are somewhat passive when it comes to contacting the instructor regarding course related matters.	FS19*
It is valuable to me that my students can access my online course from any place in the world.	FSG20
The participation level of my students in the class discussions in the online setting is lower than in the traditional one.	FSS21*
My students use a wider range of resources in the online setting than in the traditional one.	FFS22
Technical problems do not discourage me from teaching online.	FFS23
I receive fair compensation for online teaching (Extra monetary support) .	FSI24
Not meeting my online students face to face prevents me from knowing them as well as my on- site students.	FSS25*
I am concerned about receiving lower course evaluations in the online course as compared to the traditional one.	FSI 26*
Online teaching is gratifying because it provides me with an opportunity to reach students who otherwise would not be able to take courses.	FSS27
It is more difficult for me to motivate my students in online environment than in the traditional setting.	FSS 28*

Student Satisfaction Survey

Questions **Code** The level of my interactions with my professor in the online course is higher than in a traditional face to

The flexibility provided by the online environment is important to me.	SSI2
My professor is actively involved in their learning.	SSF3
The professor incorporate fewer resources when teaching an online course as compared to traditional teaching.	SSF4*
The technology I use for online teaching is reliable .	SSI5
I have a higher workload in the online course as compared to the traditional one.	SSI6
I miss face-to face contact with professor and classmates when learning online.	SSS7*
The professor had no issues in controlling the students in the online environment.	SSF8
I look forward to taking my next online course.	SSS9
My professor is very active in communicating with me regarding online course matters.	SSF10
I appreciate that I can access my online course any time it is convenient to me.	SSI11
My online professor is more enthusiastic about his/her online teaching than their traditional face to face teaching.	SSF12
My professor is more creative in terms of the resources used for the online course.	SSF13
Online learning is often frustrating because of technical problems.	SSI14*
It takes me longer to study for an online course on a weekly basis than for a face to face course.	SSS15*
The professor provide better feedback about my performance in the course online.	SSF17
I am more satisfied with learning online as compared to other delivery methods.	SSS18

I was somewhat passive when it comes to contacting the instructor regarding course related matters. SSS19*

It is valuable to me that I can access my online course from any place in the world. SSI20

My participation level in the class discussions in the online setting is **lower** than in the traditional one. SSS21*

I am able to use a wider range of resources in the online setting than in the traditional one. SSS22

Technical problems do not discourage me from learning online. S SS23

I receive proper **guidelines** and instructions about learning online. SSI 24

Not meeting my online instructor face to face is a **concern** to me SSS 25*

I am **concerned** about receiving lower grade in the online course as compared to the traditional one. SSS26*

It is more **difficult for me to be motivated** in online environment than in the traditional setting. SSS 28*

face class SSF1

I am satisfied with the use of communication tools in the online environment (e.g., chat rooms, threaded discussions, etc.). SSI16

Appendix 10- Factor Analysis
Factor Analysis Faculty Survey full data set

	Componen						
	1	2	3	4	5	6	7
FSS1	0.644	-0.314	0.285	0.186	-0.104	0.021	-0.409
FSS2	0.680	-0.076	0.021	0.309	0.286	-0.440	-0.080
FSS3	0.727	0.101	-0.067	-0.239	0.242	0.099	-0.336
RFFS4	0.538	0.047	0.291	-0.450	-0.243	0.086	0.130
FFS5	0.475	0.366	-0.599	-0.167	-0.157	-0.184	-0.022
FSI6	-0.298	-0.367	-0.120	-0.201	0.568	0.092	0.456
FSS7	-0.418	0.461	-0.474	-0.005	0.078	0.020	0.036
FFS8	0.363	0.298	-0.264	0.280	0.404	-0.153	0.093
FSG9	0.691	-0.308	-0.138	-0.249	-0.078	-0.116	0.064
FSS10	0.683	0.163	-0.120	-0.423	0.241	0.280	-0.176
FSS11	0.705	-0.026	-0.243	-0.059	0.113	-0.203	0.028
FSS12	0.591	-0.615	-0.101	0.177	0.321	-0.049	-0.060
RFFS13	-0.292	0.089	0.377	0.640	-0.033	0.312	0.090
RFFS14	0.488	-0.144	0.469	-0.019	-0.321	-0.371	0.307
RFSI15	0.247	0.738	0.302	0.125	-0.295	-0.138	0.060
FSS16	0.787	0.213	-0.231	-0.020	-0.063	0.230	0.164
FSS17	0.563	-0.364	-0.201	0.484	-0.155	0.222	0.097
FSG18	0.752	0.017	-0.230	0.285	-0.027	0.005	-0.177
RFG19	0.461	0.290	0.623	0.077	0.222	-0.156	0.037

FSG20	0.346	0.628	-0.398	-0.051	-0.054	0.116	0.309
RFSS21	0.504	0.335	0.542	-0.224	-0.114	0.196	-0.057
FFS22	0.499	-0.597	-0.170	0.137	-0.108	0.409	0.180
FFS23	0.513	0.393	-0.220	0.123	0.065	-0.097	0.279
FSI24	0.267	0.644	-0.376	0.335	-0.148	0.086	-0.026
RFSS25	0.523	0.441	0.499	0.021	0.220	0.103	0.009
RFSI26	0.120	0.470	0.624	0.042	0.357	0.276	0.058
FSS27	0.720	-0.376	-0.216	-0.053	-0.200	0.175	0.067
RFSS28	0.477	-0.487	0.460	-0.022	-0.056	-0.114	0.298

Extraction Method: Principal Component Analysis.

a. 7 components extracted.

	Component		
	1	2	3
FSS1	0.644	-0.314	0.285
FSS2	0.680	-0.076	0.021
FSS3	0.727	0.101	-0.067
RFFS4	0.538	0.047	0.291
FFS5	0.475	0.366	-0.599
FSI6	-0.298	-0.367	-0.120
FSS7	-0.418	0.461	-0.474
FFS8	0.363	0.298	-0.264
FSG9	0.691	-0.308	-0.138
FSS10	0.683	0.163	-0.120

FSS11	0.705	-0.026	-0.243
FSS12	0.591	-0.615	-0.101
RFFS13	-0.292	0.089	0.377
RFFS14	0.488	-0.144	0.469
RFSI15	0.247	0.738	0.302
FSS16	0.787	0.213	-0.231
FSS17	0.563	-0.364	-0.201
FSG18	0.752	0.017	-0.230
RFSG19	0.461	0.290	0.623
FSG20	0.346	0.628	-0.398
RFSS21	0.504	0.335	0.542
FSS22	0.499	-0.597	-0.170
FSS23	0.513	0.393	-0.220
FSI24	0.267	0.644	-0.376
RFSS25	0.523	0.441	0.499
RFSI26	0.120	0.470	0.624
FSS27	0.720	-0.376	-0.216
RFSS28	0.477	-0.487	0.460

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Factor Analysis Student Survey full data set

Component Matrix^a

Component

	1	2	3	4	5	6
SSF1	0.589	-0.065	-0.201	0.010	0.171	-0.291
SSF3	0.625	-0.097	0.283	0.207	-0.241	-0.120
RSSF4	0.042	0.408	0.314	-0.153	-0.017	-0.358
SSI2	0.657	-0.022	0.065	-0.121	0.034	0.139
SSI5	0.574	-0.028	0.088	0.127	-0.101	0.179
SSI6	0.717	0.033	-0.018	-0.153	0.000	-0.030
RSSS7	0.213	0.590	-0.380	-0.071	-0.259	0.252
SSF8	0.471	-0.056	0.297	0.126	-0.408	-0.076
SSS9	0.665	0.106	-0.260	-0.209	-0.151	-0.094
SSF10	0.704	-0.087	0.329	0.164	-0.185	-0.078
SSF12	0.661	-0.218	-0.278	0.101	0.252	-0.091
SSF13	0.670	-0.174	-0.063	0.302	0.059	-0.128
SSI11	0.564	-0.132	0.326	-0.178	0.008	0.385
RSSI14	0.299	-0.136	-0.216	0.661	-0.083	-0.074
RSSS15	0.119	0.640	-0.241	0.001	-0.196	0.269
SSI16	-0.025	-0.256	0.199	0.368	0.494	0.451
SSF17	0.676	-0.104	-0.140	0.133	0.244	-0.064
SSS18	0.706	-0.011	-0.390	-0.240	0.091	-0.065
RSSG19	-0.035	0.498	0.504	-0.133	0.412	-0.238
SSI20	0.590	-0.112	0.238	-0.286	-0.038	0.305

RSSS21	0.234	0.642	0.086	0.089	0.106	0.021
SSS22	0.643	-0.125	-0.041	-0.167	0.074	0.072
SSS23	0.540	0.014	-0.112	-0.247	0.366	-0.017
SSI24	0.717	-0.023	0.246	-0.021	-0.129	-0.034
RSSS28	0.236	0.741	0.028	0.111	0.065	-0.090
RSSS25	0.122	0.706	0.035	0.268	0.098	0.163
RSSS26	0.178	0.633	-0.011	0.168	0.098	0.014

Extraction Method: Principal Component Analysis.

a. 6 components extracted.

Component Matrix^a

	Component		
	1	2	3
SSF1	0.589	-0.065	-0.201
SSF3	0.625	-0.097	0.283
RSSF4	0.042	0.408	0.314
SSI2	0.657	-0.022	0.065
SSI5	0.574	-0.028	0.088
SSI6	0.717	0.033	-0.018
RSSS7	0.213	0.590	-0.380
SSF8	0.471	-0.056	0.297
SSS9	0.665	0.106	-0.260

SSF10	0.704	-0.087	0.329
SSF12	0.661	-0.218	-0.278
SSF13	0.670	-0.174	-0.063
SSI11	0.564	-0.132	0.326
RSSI14	0.299	-0.136	-0.216
RSSS15	0.119	0.640	-0.241
SSI16	-0.025	-0.256	0.199
SSF17	0.676	-0.104	-0.140
SSS18	0.706	-0.011	-0.390
RSSG19	-0.035	0.498	0.504
SSI20	0.590	-0.112	0.238
RSSS21	0.234	0.642	0.086
SSS22	0.643	-0.125	-0.041
SSS23	0.540	0.014	-0.112
SSI24	0.717	-0.023	0.246
RSSS28	0.236	0.741	0.028
RSSS25	0.122	0.706	0.035
RSSS26	0.178	0.633	-0.011

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

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