Conquering the divide: are free laptops enough?

A qualitative exploration into the experience of Further Education students who received laptops during Emergency Remote Learning.

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Dedication

As the third-generation Further Education teacher in my family, I would like to dedicate this dissertation to my Mum and my Grandad. For passing on their love of education onto me.

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I would like to take this opportunity to acknowledge all the help and support that I have received throughout this course. Thank you to the staff and lecturers at the National College of Ireland who encouraged and guided me from day one. Particularly, my supervisor Dr Micheal Goldrick who always provided helpful and critical feedback with a smile.

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List of Abbreviations

CDETB City of Dublin Education & Training Board

DDLETB. Dublin & Dún Laoghaire Education & Training Board

DigComp European Digital Competence Framework

ETB Education and Training Board

ICT Information and Communication Technology

LO Learning Outcomes

MIT Massachusetts Institute of Technology

MOOC Massive Open Online Course

PLC Post Leaving Certificate

QQI Quality and Qualifications Ireland

SOLAS Irish state organisation with responsibility for funding, planning and coordinating Further Education and Training

Abstract

Digital inequality is not solely a technological problem but reflects societal inequalities which already exist. These inequalities have been further compounded due to Emergency Remote Learning (ERL), which has been in place since March 2020 due to the COVID-19 pandemic. ERL is a temporary and emergency response to continue education during a crisis, resulting in many face-to-face courses moving to an online delivery. Those already with access to technology and the skills to use technology have been given an unfair advantage during the pandemic over those who don't. It is important for educational systems to provide equitable digital environments, where all students have the opportunity to be included and succeed. While providing better infrastructure is essential to improving digital inequality, the review of the literature shows that this is not enough to tackle this complex and multi-faceted issue. Understanding the needs of students is paramount to designing appropriate supports. The participants of this study are all Further Education (FE) students who received laptops from 'Digital Divide' government funding. The objective of this research was to understand the participants' lived experience during ERL, to understand what role technology played in their ERL journey, and finally to see how the laptops they received helped or hindered their experience. This qualitative research adopts a phenomenological approach with interpretivist underpinnings, which are designed to capture the essence of the individuals' lived experience. Using semi-structured interviews which were analysed using thematic analysis, three themes were chosen to best represent the data: (i) All Work and No Play (ii) New Laptop, New Beginning? (iii) Digital Competency. The findings show that ERL has been a lower quality experience for these students, who demonstrate strong feelings of alienation from their school community. While the laptop they received generally improved the quality of their experience it is clear that digital literacy skills determined how much functionally and use the students gained from their laptop. Recommendations include providing technical training and support for both teachers and students based on technological outcomes and further research to be conducted into faculty experience of the digital divide.

Chapter One: Introduction

1. Introduction

This research aims to explore the experience of Further Education (FE) students during Emergency Remote Learning (ERL) who have received laptops as part of 'Digital Divide' government funding. ERL has been in place since March 2020 due to the COVID-19 pandemic, is a temporary form of education which will return to its intended delivery once the crisis is over. This is a qualitative research design, with a phenomenological approach and interpretivist philosophical underpinnings. Semi-structured interviews were used and analysed using Braun & Clarke's (2006) Thematic analysis (TA) to obtain the following three themes; (i) All Work and No Play (ii) New Laptop, New Beginning? (iii) Digital Competency. The theme of All Work and No Play deals with the altered experience of studying during ERL. The second theme, New Laptop, New Beginning? addresses the process of obtaining their new laptop. Finally, the last theme, Digital Competency, explores how their competencies affected their laptop use.

In this chapter I will explain the background and context of the research which will shed light on the problem statement. Explaining why this topic was chosen and why it is important. The rationale will cover the significance of the project, it's contribution and implications, by highlighting to whom it is important and the possible benefits. I will state the purpose and the aim of this research, and finally I will briefly outline the rest of the dissertation chapters to give an overview of what is to be covered.

1.1. Background and Context

ERL differs from normal remote learning as it is a "temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances" and will resume to the intended delivery once the crisis is over (Hodges, Moore, Lockee, Trust & Bond, 2020, p.6). This highlights the impact ERL will have on intended pedagogies as many courses which were designed for in-class delivery are now being delivered online. With only 0.9% of FE courses being delivered online in 2019 (Dulee-Kinsolving & Guerin, 2020) it is evident that the majority of FE courses were not designed for online delivery. This is a cause for concern; the literature shows that a well-designed pedagogy is crucial for a remote online course to be successful in engaging and maintaining students (Kennedy, Rhoads & Leu, 2016; Park & Shea, 2020). The digital divide was first described as a binary divide between those who have access to devices and those who do not. However, more recently the complexity of the digital divide has been expanded beyond hardware access into issues around use and skill (van Dijk, 2006). Digital inequality is not solely a technological problem, but a social one (van Dijk, 2020) running along the same veins as other societal inequalities (Hargittai & Hinnant, 2008) further reinforcing these existing inequalities. There are different layers to the digital divide, each requiring different supports to overcome. One-to-one education, in which all students receive a device, is a prime example of this. While this appears to foster a more equal classroom by giving all students access, these incentives can actually work to widen achievement gaps (Peterson & Scharber, 2017) or fail due to lack of training for staff and students (Hall, Lundin & Sibbmark, 2021; Kennedy et al., 2016; Paredes-Labra, Tello & Kachinovsky, 2017). To help combat the impact of the digital divide during ERL the government issued €15m worth of laptops within the FE & Higher Education (HE) sectors. This research project wishes to examine how these laptops have

impacted FE students' education. And despite overcoming the first-level digital divide, is there evidence of the second- or third-level digital divide hindering their learning?

Before embarking on this master's course, I completed the postgraduate diploma in NCI to begin my career change into the teaching profession. This move stemmed from a desire for social justice, as I strongly believe in the power of education to change people's lives and empower them to become more independent individuals. Parallel to this I also believe in the power of technology to change people's lives, as we now have access to a world of information and knowledge at our fingertips. However, like education, technology can be unnecessarily exclusionary but when coupled together they have the potential to be great equalizers. When the pandemic hit, and we moved to ERL delivery, I became concerned for the unequal impact this would have on society. In addition, as a student myself, I have personally experienced ERL so was curious to understand it from the perspectives of others.

1.2. Rationale for the Study

The driving force behind this research is providing more equitable opportunities and outcomes for students. In today's world technology is no longer optional as it permeates into every aspect of our lives. Over the past year COVID-19 has compounded inequalities particularly from a digital perspective as we have become ever more reliant on technology. It has given those with both the skills and the access to technology an unfair advantage over those without (Nguyen, Hargittai & Marler, 2021). As vaccine programs currently roll out and we have hope of returning to face-to-face delivery soon, these inequalities may be lessened, but they will not be resolved entirely. Digital competencies are important to address and build as they encompass

skills, aptitudes, and knowledge for ICT (Martin & Grudziecki, 2006). Not only are they important for a student's academic achievement, particularly in ERL, but are transferable skill sets for the workplace and into further education. Understanding the technical experience of students is key to implementing effective policy and practice (SOLAS, 2020a). Most digital divide research has been quantitative, examining the phenomenon through demographics (van Dijk, 2006), however demographics are not fixed variables and will change over time. This can have damaging effects by creating technological myths such as young people being "tech natives" who require less assistance than older generations (Wilkin, Davies & Eynon, 2017), which is untrue and negatively impacts policy written to support these younger students. For these reasons, this research has adopted a qualitative phenomenological approach, to examine in rich detail the different facets of the students' lived experience to understand more comprehensively how technological supports should be provided.

1.3. Research Aims

This research project has three main objectives, firstly to capture the essence of the student experience during ERL. This has undoubtedly been a strange year for everyone; teachers, and students alike. With so much change it is important to capture the complex ways in which the FE student's world has changed. Secondly, this research hopes to ascertain the role technology has played in this experience and how the new laptop has impacted FE students. Assuredly technology has played a vital role within this academic year for these participants, allowing them to participate in their school community. By understanding what essential functions technology provides to these students it allows us to comprehend the absolute necessity the new laptops play in their learning experience. Finally, this research aims to understand what

challenges the participants faced during this year and which barriers remain. While many of the challenges faced by these participants could be classed as temporary due to the COVID-19 lockdowns and ERL, they are still important to recognize and have relevance. Going forward this new understanding of the student experience can both inform how to better design online remote courses and inform policy and practice should an ERL situation ever arise again.

1.4. Outline of Dissertation

The literature review starts by setting the broad context of the FE sector and the impact COVID-19 has had. How school reopening has been handled by the FE colleges involved in this study is outlined. Following on from this is a review of the current digital policies relating to the FE sector and the impact they have had on students is questioned. Digital literacy and skills first appeared in Irish educational policy in 2013 but the acknowledgement of the going 'beyond access' (Hargittai, 2002), that is providing not just access to hardware but to address the skills gap, was only documented in 2020. The two focus points of the literature review are the digital divide and ERL, which come together to frame the research questions underpinned by the policy review and its implications. Looking at the history of digital divide research we see the development of term from first level, hardware access to devices and broadband. To the second level (Attewell, 2001) which addresses computer literacy and use. And most recently the third level (Wei, Teo, Chan & Tan, 2011) which is concerned with the outcomes of technological use. The literature demonstrates that the skills gap is larger than the access gap and is much more complex to address (Hargittai, 2002) as it contains additional complex processes compared with traditional literacy needs. The negative impact of using demographics and stereotypes within digital research is discussed (van Dijk, 2006), highlighting its possible

negative impacts on educational policy. MOOCs and one-to-one computing programs have been cited as ways technology can create a more equitable educational system (Baturay, 2015; Leu et al., 2015), however both are appearing to have the opposite effect. MOOCs create an inequitable space through ill designed content and delivery which can exclude those from lower participation groups (Littenberg-Tobias and Reich, 2020). While one-to-one computing programs reportedly fail to provide adequate training for both teachers and students (Hall et al., 2021; Kennedy et al., 2016; Paredes-Labra et al., 2017; Peterson & Scharber, 2017). For students, without the appropriate support and skills, technology can cause them to fall further behind as they spend time overcoming simple technological barriers (Peterson & Scharber, 2017). It is clear from the literature that technology alone cannot enhance learning without the appropriate pedagogical supports (Park & Shea, 2020).

Remote learning relies on functioning technology but poses the possibility of providing additional access to widen participation for rural students (Stone, Freeman, Dyment, Muir & Milthorpe, 2019) or providing lower cost or more flexible options (Flannery & McGarr, 2014). However, dropout rates remain high (Gütl, Rizzardini, Chang & Morales, 2014) due to the promises of flexibility not being met (Stone et al., 2019; Flannery & McGarr, 2014) and ill-fitting policies which do not acknowledge the differences between on-campus and online students (Stone, et al., 2019). Finally, ERL literature is reviewed revealing that the student experience as reported to date is overall antithetical. The impact ERL is having on academic performance is also contradictory with some students performing better (Gonzalez, et al., 2020) and others worse (Chhetri, 2020). This may be attributed to the students adapting their study style to suit this less supported environment (Gonzalez, et al., 2020; Shim & Lee, 2020). A common theme within the literature is also the impact on social lives and feelings of isolation (Shim & Lee, 2020; Chhetri, 2020; Meeter, den Hartogh, Bakker, de Vires & Plak, 2020).

The methodology chapter looks at how the research design was composed to best suit the research questions. Starting with the interpretivist paradigm which is well suited to investigate students' perspectives of their learning experience (Bryman, 2016). From an ontological perspective, interpretivists believe in a bi-directional influence between social actors and their external factors allowing social actors to construct their own realities (Bryman, 2016; Taylor & Medina, 2013) and epistemologically interpretivism states that knowledge is constructed through the interpretations actors have with their environment (Scotland, 2012). A phenomenological approach allows insights into a shared experience (or phenomena) to be gained, allowing one to conceptualise this abstract phenomenon which aligns with the interpretivist philosophical underpinnings. In keeping with the ontological beliefs, a hermeneutic phenomenological approach was adopted as I do not believe I can 'bracket' myself from my 'worldlife' for an unbiased interpretation (Neubauer, Witkop, & Varpio, 2019; Taylor & Medina, 2013). Instead, I have actively reflected on how my own experience will guide my interpretations. Semi-structured interviews were used to explore their experiences. The data generated from the semi-structured interviews was analysed using Braun & Clarkes (2006) Thematic Analysis (TA). While the research questions for this study are relatively simple, the answers are complex and multifaceted which is why Bronfenbrenner's Ecological Theory was used as the theoretical framework. This theory provides a framework to describe how individuals both influence their environment and are influenced by their environment (Darling, 2007; Onwuegbuzie, Collins & Frels, 2013) which is an appropriate theory to frame the new complexities impacting these students' learning experience. This theory was used during the data analysis particularly to frame the differences in their chronosystems before and after ERL.

Qualitative research is more ethically laden than quantitative studies (Shaw, 2003) as you are dealing with individuals rather than generalising across larger populations. The ethical implications of my choices have been considered at each step of the research (Shaw, 2003). Informed consent was the first ethical duty towards participants, allowing them to make informed choices about whether or not to partake. Ensuring each person's voice is heard I have remained aware of bias during the interview and data analysis process, allowing for active reflection throughout. Assuring participants anonymity can be difficult (Gibson, Benson & Brand, 2013) however it has always remained an ethical priority to ensure participants cannot be identified. To ensure this all participants will be given pseudonyms and the colleges will also not be named.

The findings and discussion chapter delves into the themes which emerged from the data; (i) All Work and No Play (ii) New Laptop, New Beginning? (iii) Digital Competency. The first theme, All Work and No Play, contains two subthemes: (i) diminished experience and (ii) alienation. The first subtheme, diminished experience, describes the ERL experience of the students; starting broadly with the newfound changes within ERL before narrowing down into feelings of alienation and how this has impacted their experience. Overall, there is a sense of loss from the students, that their experience has been boiled down to the bare minimum. There has been little to no social life and their learning has also changed and intensified. Leading into the next subtheme, alienation, which explores the impact alienation has had on their enjoyment and learning. The second theme, New Laptop, New Beginning?, explores the process by which the students obtained their new laptop detailing the difficulty some students had in comparison to others. It is very much focused on the first level digital divide of access to hardware. This theme will be broken down into two sub-themes: (i) obtaining the new laptop and (ii) the impact of the new laptop. Obtaining the laptop looks at why these students needed the laptop to begin

with and their experience of obtaining a new one. Here, the accounts of why students needed the laptop and difficulties within the system are discussed. The second sub-theme, impact of the laptop, explores how the laptop met their needs and how it thus affected their learning experience. The third theme, Digital Competency, moves towards the second level digital divide. Informed by the DigComp 2.1 Framework (Carretero, Vuorikari & Punie, 2017), the findings will be discussed under the sub-themes: (i) digital literacy, (ii) communication and collaboration, and (iii) problem solving. How the participants' digital skills and digital competencies affected their use and application of their laptops is explored here. It is observed that those with a better skill set are confident in their abilities and have more explorative use for their laptops. While those with a lower skill set are lacking confidence, have less curiosity about their laptop and have some naivety around technology. This chapter concludes by answering the research questions directly.

Finally, the dissertation is concluded with recommendations based on the above findings and identified areas of further research are proposed.

1.5. Conclusion

This chapter has given an overview of this research dissertation, stating the background to this complex issue within the context of ERL and justifying its importance and relevance within the FE sector. The overview shows what is to be covered in the literature review to frame the research questions. The research questions will then inform the methodology choices that were discussed. And finally, an overview of the findings was provided.

Chapter Two: Literature Review

2. Literature Review

2.1. Introduction

Freire (1978, 1998) suggested that people need to learn how to ‘read the world’ and interpret the world around them. In a world so reliant on technology, this interpretation is reliant not only on social and cultural influences, but also a complicated series of literacies, including digital literacy and media literacy. As an insight into the challenges this brings, this chapter will review the current digital policies to examine what is being done by policy makers to address issues around digital inequality. Then the development of the term ‘digital divide’ along with a chronological review of the literature to date is presented. Compounding the effects of digital inequality is the current pandemic in which students are more reliant on technology. Finally, how ERL has affected the student experience will be critically discussed. The aim of this chapter is to give an overview of the different components and complexities to frame the research questions.

2.2. Further Education

Further Education and Training (FET) is defined by the Department of Further and Higher Education, Research, Innovation and Science (2021) as "education and training which occurs after second level schooling but which is not part of the third-level system. There are a number of providers of Further and Adult Education and Training and a wide variety of schools,

organisations and institutions, are involved in the delivery of continuing education and training for young school leavers and adults". The various providers of FET include but are not limited to; Post- Leaving Certificate (PLC) Courses, Apprenticeships and Traineeships, Prisons and Youthreach. Each FET college and training centre is part of one of the 16 national Education and Training Boards (ETB) across Ireland. SOLAS has the responsibility to plan, fund and drive development within the FET sector, much like the Higher Education Authority (HEA) does for the Higher Education (HE) sector.

2.3. Current Digital Policy

Digital literacy and skills have been on the Irish educational policy agenda since 2000, firstly the Department of Education (2000) published the "Schools I.T 2000" policy which highlighted the need to integrate technology into teaching and learning through infrastructure, teacher training and policy and research. It rightly acknowledges the social, pedological and economic benefits of investing in ICT with goals pertaining to computer literacy being set out under the three supporting pillars of technology, skills and supporting infrastructure. However, the focus is mainly on first- and second-level educational sectors. Secondly, the "Digital literacy: the National Digital Strategy 2013" policy focused on digital engagement with eLearning tools such as the website eCollege, which is still in use today, although overall emphasis on FET in this policy was lacking. The policy mentions implementing "virtual labs, virtual classrooms, ePortfolios" within FET, unfortunately there is no evidence to support that any of these have been successfully implemented across the sector to date. Following this, the Department of Education (2015) published the "Digital Strategy for Schools 2015 - 2020" policy wished to support digital learning in FET by embedding technology enhanced learning within the sector.

Although FET and HE are mentioned, the primary focus appears to be for secondary schools by preparing students with an ICT enhanced curricula before they move into FET and HE. The main piece of support in relation to FET and ETBs is to be provided with drawdown mechanisms for procurement of new devices.

The FET sector comes more into focus in the remaining policies; SOLAS (2020a) first publish the "Future FET: Transforming Learning" policy which is one of their guiding policies, in addition to their corporate plan. One of four enabling themes of this policy is "digital transformation of the FET sector" (along with; learner and performance focus, staffing and structures and capital development) demonstrating the importance of ICT to the policy makers. This will be achieved through emphasis on modular learning through the eCollege website, as mentioned above. It is aims to provide an online space for lifelong learners through the offering of flexible, online, and blended courses and "digital badges". As well as providing a shared digital interface between ETBs which is noted as a barrier to success within the sector. The focus in this policy is on access and online digital transformation, with no practical mention on how digital skills will be developed within this policy. They indicate that digital literacy is to be embedded into the new national literacy strategy. Finally, SOLAS (2020b) published a ten-year literacy plan "Adult Literacy, Numeracy and Digital Literacy 10-Year Strategy for Ireland". The complexity of literacy is well laid out within this consultation paper showing the various aspects to be considered and addressed. The digital divide is mentioned as one of the five themes, as the consultation wishes to address foundation level digital literacy needs particularly considering COVID-19 as they acknowledge that we must go "beyond access" (SOLAS, 2020b, p.15). This is of particular importance as over 50% of the Irish population have low to no internet skills (Digital Economy and Society Index, 2019). However, there is

no clear implementation date or plan given in this consultation paper, thus when and how these needs will be addressed is not clear.

The review of the policy demonstrates an awareness of the need to develop digital literacy skills in students since 2000 with acknowledgement of moving beyond access in 2020. The most recent consultation paper looks promising in its deliverable to foster digital inclusion, coupled with the commitment to increase access offered by SOLAS (2020a), there is potential to address the digital divide in Ireland. Although, when and how this will be implemented remains vague and will be too late to help the students currently enrolled in FET courses.

2.4. COVID-19

On the 12th of March 2020 An Taoiseach issued a mandatory closure for all schools with immediate effect and schools did not return to face-to-face for the remainder of the academic year. The sudden restrictions imposed on March 2020 left teachers and students unprepared for this overnight transition to online learning. When participants of this study enrolled onto their courses it was not clear whether they would be on campus or online. A basic condition of online learning is access to a computer, PISA 2018 (OECD, 2019) results indicate that only 86% of students have such access, which is lower that the OECD average. In addition, these devices may have to be shared with others in the household due to higher demand which will further marginalise students during the pandemic.

By September 2020 when FE colleges planned to reopen, government guidance was not as clear as it had been in March. With no blanket decision on how to handle reopening safely issued by the government, SOLAS or the ETBs, it was left up to the individual FET colleges to handle themselves. The FET colleges hosting this research study, based DDLETB and CDETB, took a similar approach. During the first semester, practical courses allowed students on campus in smaller groups while more theoretical subjects were delivered primarily online. However, due to level 5 lockdown restrictions in place since December 2020 none of the students returned to the college in the second semester.

2.5. The Digital Divide

The term "digital divide" has been used for over 25 years as a metaphor to describe digital inequalities. Although the term has been criticized for being over simplistic and too ambiguous (Gunkel, 2003), others recognise that despite remaining undefined it has served a purpose by popularizing the term and highlighting its importance within the literature (van Dijk, 2005). For the purposes of this dissertation, I will be using van Dijk's (van Dijk, 2020, p.1) definition of the digital divide: "A division between people who have access and use of digital media and those who do not".

2.5.1. Origin & history

The term "digital divide" was originally first published by the American National Telecommunications and Information Administration to describe the gap between those who

had access to technology and internet connectivity and those who did not, otherwise known as the “have and have nots” (National Telecommunications and Information Administration, 1995). In 1995 access to such things was not common with roughly 30% of Americans at the time owning a home computer (Pew Research Center, 1995). Computer ownership was even lower in Ireland, with 18.6% of people owning a home computer in 1998 (Central Statistics Office, 2003). It was believed that by bridging this hardware gap that the digital divide problem could go away, this ideology still permeates through the policy to this day. Many believed that computers would be adapted into society through the “trickle down” adaptation much like other media technologies before them such as television and radio (van Dijk, 2020). The “trickle down” phenomena describes how when new technology enters the market it is expensive, allowing only those with enough resources to acquire it. After time newer technology will come along, making the former less expensive and more widely available allowing those in the wider society to adopt it. This unequal ownership of computers reflected the socio-economic and ethnic demographics which were slower to own the new technology. As more people obtained personal computers in the developed world at the turn of the millennia the gap between the “have and have nots” narrowed and many believed the digital divide was no longer a topic for concern (Compaine, 2001; Thierer, 2000). However, despite more people owning computers, digital inequalities remained in society which could no longer be explained by the “have and have nots”, this saw the digital divide research move “beyond access” (Hargittai, 2002). It was acknowledged at an EU level that “unequal access to new technology and to learning how to use it is a matter of policy concern for obvious equity reasons” (OCED, 2001, p.15), In order to boost the economy, an information and knowledge driven economy should be created by the integration of ICT into schools.

Information technology, by which I refer to laptops, mobile devices, tablets, requires a unique skill set to be able to use it unlike media technology (van Deursen & van Dijk, 2014, Kress, 2003). To deal with the complexity of the digital divide it was split into different levels; the 'first level digital divide' which addressed disparities in access to technology and the 'second level digital divide' which looked at computer literacy and use (Attewell, 2001). Wei et al. (2011) then coined the term 'third level digital divide' which considers the inequalities of technological outcomes, however despite its definition the research on the third level digital divide remains scarce (Scheerder, van Deursen & van Dijk, 2017).

Hargatti (2002) noticed that computer skills varied among different groups of people in her study which asked participants to search five terms on the internet as she timed their completion. This breakthrough study demonstrated that access to technology is not enough to determine equitable use of technology. This sparked many more studies into the skills and use of technology among different demographics of people, finding that the same demographics which have poor access to technology also have low digital skills (Scheerder et al., 2017) further compounding the digital inequalities faced by these groups, while those with access and skills move further ahead. From 2004 onwards the literature has mainly focused on inequalities between internet users (van Dijk, 2020).

The skills gap is larger than the access gap (Hargittai, 2002) and is more complex to fix as it includes multi-dimensional processes such as digital literacy skills (Helsper, 2016). Digital literacy is much more difficult to address than traditional literacy, i.e; reading and writing, as online reading requires additional skills (Kennedy et al., 2016; van Dijk, 2020; Kress, 2003). With 1 in 6 Irish adults struggling with everyday reading, digital literacy issues further

compound this difficulty (NALA, 2020). A survey conducted by NALA (2020) found that 42% of Irish adults struggle with digital skills which points to a large number of Irish adults experiencing some level of social exclusion. Furthermore, these adults will make less informed political decisions (Hargittai, 2002) and have more health issues due to lower levels of eHeath literacy (Scheerder, van Deursen & van Dijk, 2020). Digital literacy skills make technological adaptation easier (Hsieh, 2012; Nguyen et al., 2021) and will have allowed transitions to online learning during covid easier for those already possessing these skills.

The ability to effectively research online is becoming an ever more important skill for life, Kennedy et al., (2016) defines aspects of being able to successfully research online which go beyond reading; 1. defining important questions, 2. locating information, 3. evaluating information, 4. synthesizing information, and 5. communicating information. Researching involves being critical of your sources and having this critical eye is not an elite skill reserved only for researchers. It is paramount to avoiding fake news online, had more people been aware of or trained to spot fake news this could have changed the course of Brexit or Trump (Rose, 2017) and could impact the uptake of the COVID-19 vaccine (Lessenski, 2021). The Media Literacy Index 2021 ranks countries on their ability to deal with fake news based on the "quality of education, free media and high trust among people", Ireland ranked 5th, while Finland topped the table in first place (Lessenski, 2021). The Finish curriculum incorporates critical thinking skills from a very young age which give students the ability to critically engage online (Horn & Veermans, 2019). Finland's approach should act as an example to the Irish education system in tackling safe internet use.

Van Dijk (2005) frames skills within the *process of access* which consists of four stages; motivational, physical, skills and usage access to further explain the first and second level digital divide (van Dijk, 2005). Unique to van Dijk's (2005) framework is the motivational access, the motivation to want to use the technology, which is particularly important within this dissertation as the participants identified themselves as wanting a new laptop thus having unique motivations behind this. Furthermore, van Dijk's (2005) four phases of access allow one to view the non-binary nature of the digital divide levels (van Dijk, 2020) as an individual may have different levels of access within each of the four phases.

2.5.2. Digital equity

Equality is providing everyone with the same resources and opportunities regardless of who they are. Whereas equity is recognising that people have different needs and focuses instead on providing people with the correct resources and supports to ensure equal outcomes. Equity in this way ensures true equality. The participants of this study were all provided with the equal opportunity of a laptop, but were they provided with the correct supports to ensure equitable outcomes? Digital inequality is not solely a technological problem, but a social one (van Dijk, 2020) running along the same veins as other societal inequalities (Hargittai & Hinnant, 2008) further reinforcing these existing inequalities. With the majority of day-to-day life involving technology from e-health to self-checkouts in supermarkets and online banking, having low technological abilities contributes to social exclusion. As noted previously not everyone was equally prepared for the transition to online learning during the pandemic, as those with access to devices and skills are given an unfair advantage which perpetuates the unequal impact of covid (Nguyen et al., 2021).

The most common demographics studied within the digital divide literature are; age (Hargittai, 2002; Hargittai & Dobransky, 2017; Wilkin et al., 2017), gender (Nguyen et al., 2021), geography (Stone et al., 2019), socio-economic class (Valadez & Durán, 2007) and educational attainment (Cruz-Jesus, Vicente, Bacao, & Oliveira, 2016; Scheerder et al., 2020). Age carries with it many myths, the most common being that young people are “tech-natives" (Wilkin et al., 2017) as they have grown up surrounded by technology and the internet. However, outside of social media many young people struggle with computer literacy skills (Radovanović, Hogan & Lalić, 2015). On the other end of the spectrum there is the myth that older generations are not proficient computer users (Hargittai, 2002). In Hargittai’s (2002) study the older generation, over 70-year-olds, who participated would have had much less experience with computers than 70-year-olds in today's world. Demographics are not fixed variables and will change overtime, they are useful in providing evidence of general behaviours for larger groups of people at a snapshot in time. Outdated age-myths penetrating into policy and practice could result in insufficient support being provided, particularly for younger generations if there is an assumption that they already have skills which they do not. With 33% of FE students being under the age of 25 (Dulee-Kinsolving & Guerin, 2020) this is particularly relevant.

The literature shows that a person’s level of education is becoming the biggest predictor of positive skill outcome (Scheerder et al., 2020). Those with lower levels of educational attainment spend more time on the internet than those with high levels of educational attainment (van Deursen & van Dijk, 2014). Usually, greater time spent using technology would equate to increased skills levels, however this is assuming that time is being spent on developing said skills and unfortunately those with lower levels of educational attainment are

spending this time on social networking and entertainment sites which will not develop their skills. Compared to those with high levels of educational attainment who spend more time on sites which will utilize their skills for their benefit, such as finance or health websites (Scheerder et al., 2020). As ones' skill determines their use (Hargittai, 2002) this limited use shown by lower educated people demonstrates the need for educators to address this gap.

2.5.3. Digital equity within education

In recent times, efforts have been made to utilise technology to democratise education. Massive Open Online Courses (MOOCs) and one-to-one computing programs are two such examples that aim to increase access and develop digital skills. MOOCs are online courses that aim to provide low-cost access to high quality, flexible courses to anyone with a device, many MOOCs are from prestigious universities such as Harvard and MIT. MOOCs are a very recent phenomenon in education, first appearing in 2008 before growing exponentially in popularity by 2011 (Baturay, 2015). They have been hailed as increasing educational equity by providing access to such a wide variety of students (Baturay, 2015). However, as research in this area continues to develop a different picture is emerging, one which shows it may be having the opposite effect. Littenberg-Tobias & Reich (2020) evaluated the access, quality, and equity in a case-study of a MOOC-based blended Supply Chain degree program and found that this course did not provide an equitable on-ramp for underrepresented groups and in fact may act to further widen participation gaps by providing low-cost options for those who do not need it. The MOOC examined in this case study had a high number of enrolments (N=81,000) with only 40 students completing the course, the majority of whom were males with master's degrees. High dropout rates are common among MOOCs (Gütl et al., 2014), reasons cited for

this is include; the programme not meeting expectations, courses were too difficult or not enough support provided on the course (Gütl et al., 2014) which could indicate that courses are not designed for marginalised groups who would benefit most from these opportunities (Littenberg-Tobias and Reich, 2020). While retention within MOOCs is an issue which needs to be addressed, it must also be recognised that completion rates are not the only indicator of failure. Even if students do not finish the course, they still have the opportunity to gain valuable skills through the interactions they do have (Murray, 2019).

One-to-one computing programs (also abbreviated to "1:1") within education refers to instances where institutions provide electronic devices, such as laptops or tablets, to all students and have been studied from primary through to tertiary educational settings. Increasing access to devices has huge benefits for students such as increasing academic performance (Reisdorf, Triwibowo & Yankelevich, 2020), helping students learn (Kennedy at al., 2016) and better preparing students for life after school (Donovan, Green & Hansen, 2011). While there is evidence to support laptops being a distraction in class (Kennedy at al., 2016), Kay and Lauricella (2011) examined the impact of unstructured (limited use in class) and structured (active use in class) laptop use in university lectures. They found that encouraging structured use of devices in class meant students spent time more productively on their laptops, instead of being non-productive by spending time on personal items such as emails and games, demonstrating that students will spend time on their laptops in lectures regardless of whether they are required to so teachers should incorporate this into their pedagogy.

A lack of access has been attributed to widening the academic achievement gap between low and high socioeconomic areas (Leu et al., 2015) thus the hope of many 1:1 schemes is to

address this problem and create a more equitable education system. However, Hall at al. (2021) argue that they are having the opposite effect by worsening the scores in low socioeconomic schools. This trend is seen also in Peterson & Scharber (2017) case study which documented the implementation of a 1:1 scheme contrasting the experiences between a high and low academic class, finding that those in the high academic class had their experience enhanced by the laptops as they could use them with ease to advance forward. While the lower academic class were slowed down by the laptops, spending class time overcoming basic technological challenges (such as signing into websites), ultimately fell behind in their course work. Demonstrating without the sufficient skills to use technology access is not enough. Kennedy et al. (2016) examined skills gained by comparing the online research skills from students in a 1:1 high school to another school who had not yet implemented 1:1. The test evaluated students' abilities at locating, evaluating, synthesizing, and communicating online information. While they found modest gains resulting from the 1:1 scheme they reported the biggest barriers to success were a lack of training and pedagogies not being adapted. A lack of training is reported to be one of the largest reasons for 1:1 scheme failure (Hall et al., 2021; Kennedy et al., 2016; Paredes-Labra et al., 2017; Peterson & Scharber, 2017) as both staff and students need additional support if these schemes are to work. Overall, 1:1 initiatives can provide more equal opportunities but without the correct supports in place they do not create a more equitable educational system.

Despite the advancements of the research in the literature on the digital divide the policy has not caught up. Has the oversimplification provided by the term "digital divide", as warned by Gunkel (2003), resulted in oversimplified solutions in the policy which only address the first level digital divide? It is important to break down barriers to digital success as digital technology is no longer optional in today's society.

2.6. Remote Learning

Remote learning, also referred to as distance learning, dates back to the 18th century when correspondence courses were used for secretarial and mine safety courses. As postal mail became less popular, distance courses began to be delivered via radio, television, and phone (Sumner, 2000). In 1993 the first distance course was opened by Jones International University which resembles much of the e-learning distance courses we see today. Despite remote learning being over 300 years old it is something educators are still trying to perfect as the needs of students and the technologies used have changed over the past three centuries which leads to developments in pedagogies (Holmberg, 2005). While remote learning has relied on various technologies in the past (Sumner, 2000), for the purposes of this dissertation 'technology' will only refer to computers (laptops, tablets and mobile devices) and the internet. This is an important distinction as the skills needed to operate the different forms of technology differ greatly, playing an important role in the user experience and accessibility. With this in mind, technology should not be the sole focus of remote learning and should be used to support a balance between autonomy & learner supports (Lambert, 2019). The pedagogy of online courses can be enhanced through interactive media which tends away from the transmission style of teaching and towards a student-centred style (Stone et al., 2019), this is in line with Park & Shea's (2020) statement that without a well-suited pedagogy the technology is useless.

It could be argued that remote learning provides a more equitable access route to education than traditional on-campus courses. From breaking down geographical barriers for rural students (Stone et al., 2019) to providing low-cost or flexible course options (Flannery & McGarr, 2014) for students who are working or have other commitments, such as caregiving.

Despite the potential of remote learning, dropout rates remain high in such courses (Gütl et al., 2014). Stone et al., (2019) conducted a longitudinal study which examined rural Australian students' perceptions of their remote online course. The students did not feel their course provided them with the level of flexibility advertised and felt unsupported and forgotten by their university. Another challenge highly reported on within the literature is issues with student engagement (Littenberg-Tobias & Reich, 2020). Students most likely to succeed within the online learning environment are those with self-directed learning abilities (Littenberg-Tobias & Reich, 2020), due to the less instructor-supported nature of remote learning (Stone et al., 2019). These skills are most evident in individuals who have high levels of education, NFQ level 8/9, and with the majority of students in the FE sector having previously attained NFQ level 4/5 (Dulee-Kinsolving & Guerin, 2020) these self-directed skills may not be present. While the high dropout rates must be addressed to widen participation, it is still evident that remote learning offers equitable access routes for those who would not be able to avail of traditional on-campus courses due to their continuing popularity. Improving the online experience for students must first result in policy change which recognises the difference between the online and remote students compared to the on-campus students (Hodges et al., 2020; Stone et al., 2019; Shisley, 2020) which could better address their different needs.

2.6.1. Emergency Remote Learning

Emergency Remote Learning (ERL) became a buzzword in 2020 to describe the differences between the type of learning which was occurring in response to COVID-19 lockdowns and traditional remote learning. This new term is defined by (Hodges et al., 2020, p. 6) as follows:

> A temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances. It involves the use of fully remote teaching solutions for instruction or education that would otherwise be delivered face-to-face or as blended or hybrid courses and that will return to that format once the crisis or emergency has abated. The primary objective in these circumstances is not to re-create a robust educational ecosystem but rather to provide temporary access to instruction and instructional supports in a manner that is quick to set up and is reliably available during an emergency or crisis.

While the original definition for remote learning above is still relevant, ERL is necessary to highlight the abnormalities of this type of learning and teaching. The main difference can be rooted in its temporary nature, when the crisis is over the course will resume in its intended mode. This has implications for the pedagogy, as these ERL courses were intended for face-to-face and were quickly forced online (Shisley, 2020). As discussed above, interactive pedagogy is important for successful online learning (Jones, 2006) to keep students engaged.

2.6.2. Student learning experience during ERL

In Farrell et al. 's (2020) study which examined online University of Sanctuary students' sense of identity found that the participants, who were asylum seekers in Direct Provision, felt a strong sense of identity from being on the college campus where they had made most of their friends. Due to their negative home environment the campus was a safe space for them with supportive amenities. Although no study has taken place to examine these students' experience now that campuses are closed it provides insight into how important campuses are for many students, even those studying online. The move from a classroom full of other students on a campus of amenities and supports to studying from their homes where they may not have quiet study space or will have to share resources with others working and studying from home. All under the ever-present threat of a global pandemic will undoubtedly have changed the learning experience for the student.

Students have reported many positives to the current learning situation from cost benefits (Shim & Lee, 2020), added flexibility (Rahiem, 2020; Shim & Lee, 2020) and safety of studying from home (Shim & Lee, 2020). The main purpose of ERL is to keep instruction going and help students through assessments to avoid dropouts or postponements. The effect of ERL on academic performance is contradictory within the literature, with some claiming it has had a negative impact (Shim & Lee, 2020) and others claiming it has helped (Gonzalez et al., 2020). The first study published examining the effect of ERL on academic performance came from (Gonzalez et al., 2020) who analysed the results of 458 students pre-covid (2017/18 and 2018/19) and during covid (2019/20). They found that students did much better during

assessments while lockdown measures were in place due to students changing their study technique to a more continuous approach rather than "cramming" for exams. However, these students were on degree programmes and demonstrated strong self-directed learning abilities which has been a challenge for many students (Chhetri, 2020). Other positive effects on academic performance have been attributed to a more personalised one-to-one approach (Shim & Lee, 2020) however in the same study students reported negative impacts to their academic performance due to teachers being less active online than in face-to-face classes, teachers not adapting their style to online teaching and a deterioration in the quality (Shim & Lee, 2020). Demonstrating the complex and individualised nature of learning preferences during this time. Student perspectives on communication are equally as contradictory, on one hand some students believe communication has improved overall (Shim & Lee, 2020) while others believe that communication was lacking, and social interactions have decreased (Chhetri, 2020; Meeter et al., 2020). A lack in communication can lead to feelings of isolation and a poor sense of belonging (Shim & Lee, 2020). The differences are highly unique to specific individuals' preferences; it has been shown that shy students thrive in online situations (Han, Xu, Bian, Gao & Ren, 2016), which could account for the preference for one mode of communication over another. Students have also reported many negative impacts of ERL such as unpleasant emotions (Rahiem, 2020), a lack of motivation (Chhetri, 2020) or poor concentration (Shim & Lee, 2020). Effects on motivation are important as it is one of the key pillars of andragogy (Knowles, 1978) and could affect student learning. A Dutch study (Meeter et al., 2020) found that students who reported lower motivation due to ERL spent less time on their university work, including attending lectures. Typically, lower motivation means lower test results, however in this case grades did not drop as the time students did invest in their studies was more efficient than before (Meeter et al., 2020). This clever adaptation of students is in line with (Gonzalez et al., 2020) findings.

Much of the above student feedback highlights the issues teachers are facing with a lack of preparedness to adapt to teaching online; many teachers have been overburdened and under-supported leaving them exhausted trying to cope (Collie, 2021). It is also worth mentioning that while the digital divide is widely spoken about in relation to students, it is also an issue for staff which remains largely unreported (Willems, 2019). Although outside the scope of this research dissertation it is an important area for future research as the digital divide must be addressed for all those in the classroom.

A common theme present throughout the literature in this area is the effect of technology on the ERL experience. Although technology has accommodated a much easier ERL experience, the reports are mostly negative with students struggling with too many platforms being used (Rahiem, 2020; Ramachandran & Rodriguez, 2020), network instability (Nguyen, et al., 2021; Ramachandran & Rodriguez, 2020; Shim & Lee, 2020) and lagging audio (Shim & Lee, 2020). The digital divide, both in terms of access and skills, has impeded the success of ERL (Reynolds & Chu, 2020). Participants in Rahiem's (2020) study report being unable to use the technological resources, which hindered their independent learning abilities. Recommendations from Shim & Lee (2020) states that students should be provided with additional technological supports to better develop their skills and improve their experience.

2.7. Theoretical Framework

Ecological systems theory (EST) was first developed by Urie Bronfenbrenner (1979) as a theory to describe child development. Bronfenbrenner rejected the Piagetian-type studies of development which did not account for the context of one's life, time, history, and society (Renn & Arnold, 2003) instead proposing that individuals interact with ever more complex web of important relationships as they develop. Bronfenbrenner EST states that for development to occur, the individual must engage in increasingly complex tasks (Bronfenbrenner, 1979), which when viewed through a pedogeological lens echoes Vygotsky's concept of the zone of proximal development (ZPD) (Vygotsky, 1978) where a student is "scaffolded" (Wood, Bruner & Ross, 1976) thorough increasingly more complex tasks to learn and develop their skill.

EST focuses on a person's development within the context of their environment at various stages of their life; the microsystem, the mesosystem, the exosystem, the macrosystem and the chronosystem. The microsystem is the most basic and direct interactions an individual has, for example with their families, partners, teachers. The mesosystem refers to interactions between the individuals' microsystems, for example parents-teachers. The exosystem refers to the aspects of a person's life which they are not involved in but will still exert influence on them, for example their partner's workplace or their institutions financial policy. The macrosystem is the overarching level which accounts for the effects of larger cultural or social structure elements on a person's development, for example, ethnic or gender expectations may affect which course a student chooses. Finally, the chronosystem is the effect of time, which considers historical events and the context of age. However, the separation of culture from the individual

has prompted revisions of the EST model. Vélez-Agosto, Soto-Crespo, Vizcarrondo-Oppenheimer, Vega-Molina and Coll (2017) move culture from the macrosystem to the microsystem to better represent how culture is embedded into our everyday actions. Moving culture from the distal process into the proximal processes aligns with Vygotsky's sociocultural theory, as we operate within an ever-changing culture and are not separated from it (Vélez-Agosto, et al., 2017). In the cultural microsystem model (Vélez-Agosto, et al., 2017) there is no hierarchy of systems but fluid interactions which spiral along the chrono's dimension. The cultural microsystems are ever evolving as culture shifts, and in turn they impact and influence each other.

'Proximal processes' refers to the interactions one has within their environment, which to be effective must happen regularly and over a long period of time. Where I believe the impact of technology on a person's development enters the EST model is within Bronfenbrenner's (1999, p.6) description of proximal processes as "not limited to interpersonal interaction; they can also involve interaction with objects and symbols". Here, the "object" could refer to technology (laptops or mobile devices) as they also require "attention, exploration, manipulation, elaboration, and imagination". It is important to explicitly show how I am interpreting technology to fit within EST for this dissertation as Bronfenbrenner (1979) himself viewed each system as arising from a setting, which he defined as "a place where people can readily engage in face-to-face interaction". However, the chronosystem of 1979 is vastly different from today, there were no mobile devices or video conferencing platforms for Bronfenbrenner to consider when he defined systems as having to be "face-to-face". For this reason, due to the absence of face-to-face interactions over the past year it must be acknowledged the vital importance technology has played in maintaining many microsystem interactions which facilitate proximal processing.

EST provides a flexible and adaptive framework for understanding individuals' complex lives (Renn & Arnold, 2003; McLinden, 2017). As this dissertation is focusing on the lived experience of students during a global pandemic it was paramount to have a framework which accommodates for the varied and unique experiences these students are having. Furthermore, as students will no longer have the shared culture of being on-campus together the EST adaptation from Vélez-Agosto, et al. (2017) allows for a diverse range of cultures which will impact their ecology. EST was used in the data analysis to model the participants ecology allowing for a picture of their worlds to be built, allowing me to then demonstrate how both ERL and the new laptop impacted their ecology and the proximal processes within it.

2.8. Conclusion

This literature review has examined the origins of the 'digital divide' and how the early binary ideas underpinning this metaphor have continued to permeate through the literature for many years. Examining this concept through demographics is also popular within the literature, providing wide generalisations (Hargittai, 2002; Scheerder, et al., 2020). However, demographics are variables which change over time which is particularly true when combined with the rapidly evolving and changing landscape of technology. Increased availability of technology has caused a surge in online learning options, such as MOOCs and 1:1 education. While many thought this would bring about a more equitable educational system (Baturay, 2015) it has been shown that it may be having the opposite effect (Littenberg-Tobias and Reich, 2020; Hall at al., 2021). Without addressing the underlying needs of students, equal technological access is appearing to widen participation (Littenberg-Tobias and Reich, 2020)

and academic achievement gaps (Peterson & Scharber, 2017) by catering to those from overrepresented groups and to those with the skills to navigate and engage with these online spaces.

The student experience during ERL appears to be highly individual, contextual, and paradoxical (Rahiem, 2020), with conflicting opinions appearing both between and within student's accounts. Most noticeably ERL has changed the way students' study and interact. Overall, the picture painted by the literature shows that it is a much more isolated experience as students are less supported than in face-to-face learning (Shim & Lee, 2020). From an academic perspective this has worked well for self-directed students (Gonzalez et al., 2020), however it demonstrates the risk posed for those who do not have these self-efficacy skills. In addition, their experience has undoubtedly been affected by technology, which appears to hinder many students' ease of learning and interacting (Shim & Lee, 2020; Rahiem, 2020).

Despite the advancements of research within the digital divide literature, current policy has not caught up. Has the oversimplification provided by the term "digital divide", as warned by Gunkel (2003), resulted in oversimplified solutions in the policy which only address the first level digital divide? It is important to break down barriers to digital success as digital technology is no longer optional in today's society. As educators we have a duty to help people to not only become functioning members of society but allow people to achieve their own self-actualisation (Maslow, 1996). Through the lens of the digital divide, I wish to examine how free laptops have impacted the FE student learning experience during ERL and how they could be further supported in their learning journey. The SOLAS 2020-2024 strategy states there is a "need to understand the current digital experience of staff and learners within FET to make

effective plans for improvement" (SOLAS, 2020a, p. 58). To date no such research has been published so this is an identified gap which this research endeavours to address by answering the following two research questions:

1. How have free government provided laptops impacted the experience of FET students during ERL?
2. What barriers remain for these students?

Chapter Three: Methodology

3. Methodology

3.1. Introduction

This dissertation aims to capture the complex experience of studying remotely during a pandemic and examine how free laptops received by participants have integrated into their lives. The main aim of this research is to give voices to these students and the secondary aim is to identify any additional supports which could help future students should this situation ever arise again.

Firstly, I will explain the paradigmatic position upon which this research is based and how that strongly informs my phenomenological approach. Then I will discuss my theoretical framework, sample and participant selection process, data collection and analysis, how quality and rigor was ensured during the research process, and the relevant ethical considerations. Finally, I will examine my reflections on the process. In addition to justifying and defending my research design, this chapter captures my transition from natural scientist to social scientist, and the heavy methodological debates which accompanied this. Although it is my natural disposition is to be drawn towards the objective, observable truth, I was moved out of my comfort zone in order to best answer the research questions.

3.2. Paradigmatic positioning

My Chemistry background has shaped the lens which frames my world (Marman, 2016), it has not required me to contemplate the philosophical underpinnings of the natural science world. For my undergraduate thesis I did not sit to consider how the molecules experienced their world, or what were the ethical implications of using sulfuric acid without consent. The added complexity of the social sciences is nicely summarised by Schutz (1962) below.

> The world of nature as explored by the natural scientist does not 'mean' anything to molecules, atoms and electrons. But the observational field of the social scientist - social reality - has a specific meaning and relevance structure for the beings living, acting, and thinking within it.

Paradigms serve as the philosophical assumptions within which scientific experimentation and discovery exist. While they are accepted by most scientists, paradigms will eventually reach a 'crisis point' when science no longer fits these assumptions, this results in a total upheaval of the old paradigm for a new set of assumptions. Positivism as a paradigm was established in the 1800s as a response to religious ideologies which aimed to free people from superstition and ground people in empirical observation (Oreskes, 2019). Interpretivism was put forward as an opposing view to positivism which better explained the social world by arguing that reality is subjective rather than objective. The use of positivist paradigms in social research has been critiqued as providing a reductionist picture of the social world as it fails to acknowledge our "human agency and [our] capacity for critical self-reflection, the very denial of our humanity"

(Baškarada & Koronios, 2018, p.15). While I do not discredit the appropriateness of positivism for natural science, the process of refining and articulating my social science philosophical beliefs has been a transformative process (Mezirow, 1978) and provided the basis of the entire methodology designed to best serve the research questions.

3.2.1. Ontology

A relativist stance was adopted as I believe that reality is subjective depending on how an individual interprets their world through the bi-directional influence between social actors and their external factors (Scotland, 2012; Taylor & Medina, 2013). Interpretations can occur through social construction and internally based on the individual's existing schema and value systems. In contrast, realism asserts that there is one single and objective reality (Bryman, 2016; Taylor & Medina, 2013) which can only be understood through independent, measurable observations (Ryan, 2018). For example, a persons' COVID-19 PCR test result should be the same no matter which laboratory technician performed the test and the results do not require interpretation to be communicated. There is no connection between the sample and the technician, the sample is understood through the objective PCR test method.

Over the past year our worlds have been subject to the threat of COVID-19 and the implementation of government lockdowns, without choice students have had their colleges closed. How each student internalises and responds to this external force will be different and holds unique sets of emotions and interpretations. I believe that ERL has presented many complex challenges for students over the past year as the influence of their family and home

situations became entangled within their educational and social lives. Relativism allows me to delve into their complex and unique realities.

3.2.2. Epistemology

Subjectivism states that knowledge is constructed through the interpretations actors have with their environment (Scotland, 2012; Taylor & Medina, 2013), knowledge exists through the meaning we place on things. Positivist researchers adopt an objective epistemology which believes that knowledge is objectively independent and value-free (Scotland, 2012; Taylor & Medina, 2013). Scotland (2012) critiques scientists who believe that knowledge is value-free as "self-deluded" as we cannot remove the political, moral, and historical influences on research. I recognize that I may never be separate from my own biases and belief system and that this will have impacted how my data was gathered and interpreted (Ryan, 2018). Interpretative research is highly subjective, as the knowledge generated from this research is based on my interpretations of my participants' interpretations. Thus, it was imperative that I maintained a level of reflexivity to understand how my values and beliefs impacted this new knowledge (Taylor & Medina, 2013). Furthermore, while interpretivism may be better suited to social science research than positivism, its underpinnings introduce issues around quality and rigour (Angen, 2000) which make generalisation and replicability difficult.

Kvale states that "if you want to know how people understand their world and their life, why not talk with them?" (1996, p. 1). I believed the best way to understand the perspectives of my participants was through semi-structured interviewing which would allow me to understand

more deeply their personal experience. Although no language claims are made (Braun & Clarke, 2006), I paid attention to the language used while analysing the data. Not only does language describe their world, but it is actively involved in constructing their world (Langdridge & Butt, 2004) allowing me to identify themes related to the participants' unique lived experiences.

3.3. Phenomenology

Phenomenology is one of the main qualitative research approaches (Bryman, 2016) and was used in this study as it focuses on people's lived experience, thus is well suited to the research questions. The two main branches of phenomenology are transcendental phenomenology (TP) and hermeneutic phenomenology (HP) (Neubauer et al., 2019). Reviewing the ontological and epistemological stances of these two phenomenological branches (see Table 1) my philosophical assumptions aligned most closely with HP. While both TP and HP have strong similarities rooted in interpretivism, it is important to distinguish them as it has implications on the research design. Stemming from these philosophical differences, TP insists on researchers 'bracketing' themselves from their bias and beliefs in order to describe the phenomenon. Whereas HP recognises that the researcher cannot separate themselves from their 'lifeworld' and encourages active reflection throughout the research process to acknowledge any bias and subjectivity which may have been introduced. Furthermore, HP places heavier emphasis on the relationship between the individual's 'lifeworld' recognising that a person's experience of a phenomenon is entwined with their environment, history, and culture. HP in this way provides a richer, more in depth, interpretation when compared to the descriptions provided by TP (Neubauer et al., 2019). For the past year I have been both studying and

working from home due to the pandemic and do not believe I can 'bracket' off this experience. This heavily influenced how I designed my interview questions, which were both informed by the literature and my own experience. Further to this, the data analysis was a heavily immersive and iterative process, the structure provided by the participants ecology (Bronfenbrenner, 1979) allowed for the context through which meaning could be interpreted.

Table 1: Summary of differences in ontologies and epistemologies

	Transcendental phenomenology	**Hermeneutic phenomenology**	**Researcher's philosophical assumptions**
Ontology	Reality is the subjective internal consciousness of individual.	Reality is an interpretive process situated within an individual's 'lifeworld'.	Reality is subjective depending on how an individual interprets their world through a bi-directional influence between social actors and their external factors.
Epistemology	Knowledge must be free from researcher bias to accurately describe the phenomena.	Knowledge is not bias free, and phenomenon is understood by interpretive means.	Knowledge is constructed through the interpretations actors have with their environment.
Adopted from	Neubauer et al., 2019	Neubauer et al., 2019	Section 3.2 above

However, phenomenology remains unpopular, Neubauer et al. (2019) and Creswell (2003) point to the deeply philosophical roots of this approach appearing daunting to researchers while

others highlight its highly subjective nature, which is a common critique of qualitative approaches (Bryman, 2016).

3.4. The Sample

Purposive sampling was used for the selection of participants. Criteria for inclusion was to be an FE student who had received a free laptop from the government 'Digital Divide' funding during the academic year 2020/21, no other conditions were applied to gain the most representative cohort of laptop recipients. The participants were initially contacted via email by the principals of the colleges for GDPR reasons. A total of 174 students were sampled from two separate FE colleges, one within the DDLETB and another from the CDETB. Out of the total number of students contacted five students responded, all of whom were included in the study.

Table 2: Details of research participants

Participant	**Pseudonym**	**Age**	**Course Discipline**	**QQI Level**
1	Sophie	19	Community, Healthcare & Nursing	5
2	Clare	38	Craft, Design & Construction	5
3	Grace	19	Art & Design	5
4	Micheal	20	Arts, Business & Humanities	5
5	Joseph	60	Art & Design	5

Although there is no absolute rule for the number of participants to be included in a phenomenological study, the literature provides ranges from 1 - 30 (Cohen, Kahn & Steeves, 2000; Starks & Brown Trinidad, 2007). Qualitative phenomenological samples should prioritise depth over breath focusing on a smaller number of participants who can give detailed accounts of the phenomenon (Starks & Brown Trinidad, 2007). Bryman (2016) offers simple guidance that the broader the study, the larger the sample, and with the scope of this research being quite specific a sample of five is fitting. The participants represent many of the faces seen in FE; Sophie, Grace and Micheal have all come straight from secondary school and are wishing to use FE as a gateway to HE and employment. While Clare and Joseph have both been motivated to return to education for more personal, self-fulfilment reasons. All students availed of the free laptops voluntarily, due their previous laptops no longer functioning. Joseph stands out as he is diagnosed dyslexic but as his official diagnosis is 46 years old, he could not be provided with learning supports, which in turn influenced why he availed of the free laptop.

3.5. Data Collection Methods

Semi-structured interviews allow the researcher to delve into the perspectives of their participants and understand how they interpret their world (Qu & Dumay, 2011). Due to COVID-19 restrictions all interviews were carried out via Microsoft Teams which provided flexibility, convenience, and safety. Had there been no restrictions, focus groups could have been a useful data collection method as it could have encouraged more in-depth exploration of the collective experience (DiCicco-Bloom & Crabtree, 2006). However, it was decided this would be too difficult to conduct and manage online. Conducting semi-structured interviews online also presented challenges including network issues and environmental distractions as

participants had to attend to children and pets. This hindered the flow of the interview and ultimately, shortened some answers as participants were more distracted. Online interviews also made rapport between the participants and I more difficult as one cannot pick up on non-verbal communication and body language cues as easily (Novick, 2007; Dodds & Hess, 2020; Bryman 2016). A common critique of semi-structured interviews includes the time taken to conduct, transcribe and analyze individual interviews (Qu & Dumay, 2011) and the variance of answers which can come from individual interviews (Bryman 2016).

The questions asked during the interview were adapted from similar qualitative studies and the styles of questions followed that presented by Kvale (1996) to ensure I obtained the best from the conversation by guiding the directing the participants without pigeon-holing answers. Before conducting the interviews, a pilot interview was conducted with a person known to me, which was convenient during COVID-19 however introduced bias. The pilot interview allowed me to ensure both the questions were fit for purpose and the technology worked sufficiently which resulted in a change to the question schedule (see question schedule in Appendix 1). The questions were then slightly changed and adapted to fit each interview as I followed interesting leads the participants presented.

3.6. Data Analysis

The data generated from the semi-structured interviews was analysed using Braun & Clarkes (2006) Thematic Analysis (TA). Interpretative Phenomenological Analysis (IPA) was considered as I was using a phenomenological approach with interpretivist underpinnings. Spiers and Riley (2019) analysed one data set using both TA and IPA, which showed the benefit

of dual qualitative analysis. However, the authors claim that IPA offered a more in-depth analysis than TA and I believe that this can be attributed to the lenses used rather than the method itself. The authors used an explicit lens, rather than latent, for the TA analysis which would yield more semantic level themes. They then used IPA with a hermeneutic lens on a smaller sample size to gain depth. A fair comparison between two methods which used different lenses is not possible. Finally, as an inexperienced researcher IPA is largely undefined (Larkin, Watts & Clifton, 2006), this vagueness makes it daunting to embark on. Contrastingly, the method provided by Braun & Clarke (2006) is exceptionally well explained and easy to follow. Being provided a quality checklist which further helps to confirm that the TA has carried it out to a high standard. This instilled confidence that I could get the best out of my data and increased reliability as a defined method makes it more replicable.

The data analysis began while I listened back through the interviews, several times, as I corrected the transcriptions which has been transcribed using Otter.ai software. The transcripts were printed out and I began manually coding key extracts by highlighting them and making notes on emerging ideas and reflecting on my own experience. I then cut up the transcripts and began compiling the extracts into piles of codes. These young codes were then typed back into a Word document which allowed for easier editing. During this process the transcripts were revisited for suitability against the maturing codes and emerging themes. These immersive and reflexive iterations were informed by my hermeneutic phenomenological approach (Neubauer et al., 2019). Furthermore, EST was useful at this point to model the experiences pre- and post-ERL to understand the holistic changes that had happened to the participants' ecology. Finally, a thematic map was created which best represents the data which can be seen on the next page, Figure 1.

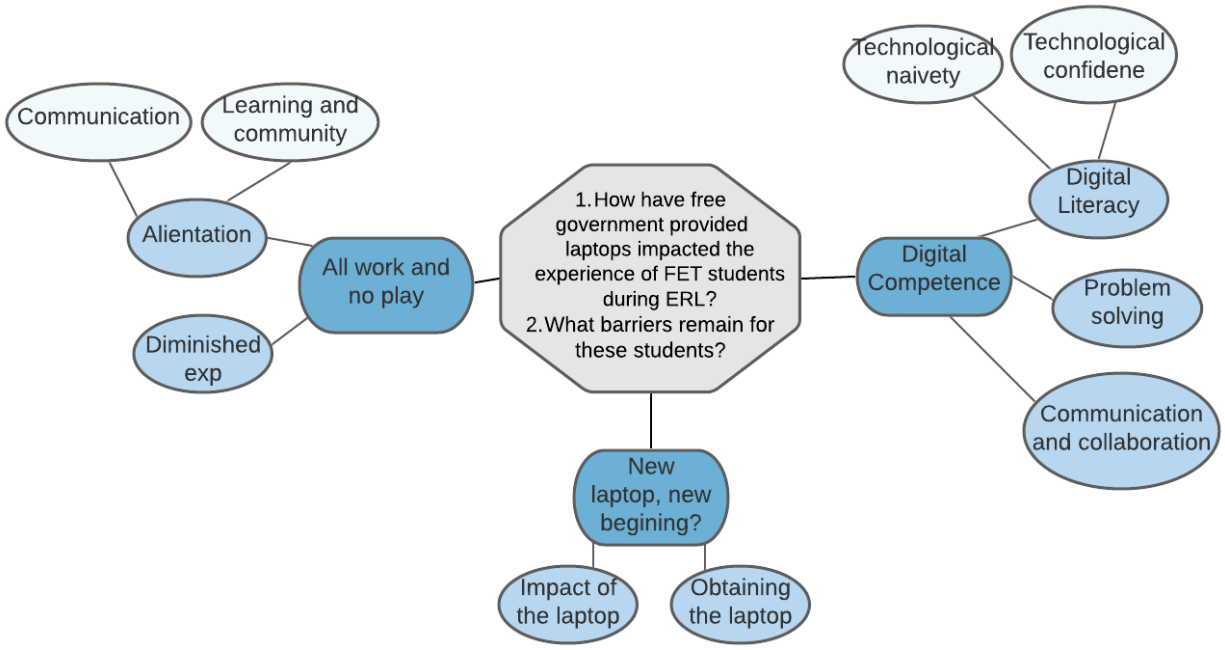

Figure 1: Thematic Map

3.7. Ethical Considerations

Qualitative research is more ethically laden than quantitative studies (Shaw, 2003) as you are dealing more closely with individuals rather than generalising across larger populations. Informed consent is the first ethical duty towards participants, which allows them to make informed choices about whether to be involved or not. The Plain Language Statement (see Appendix 2) was read by all participants, and the Informed Consent Form (see Appendix 3) was signed. During this process participants were made aware that participation was voluntary and were informed that they were free to withdraw from the study at any time without judgement and were reminded of this at the beginning of the interview also. No additional ethical considerations were generated from online interviews (Dodds & Hess, 2020). Assuring participants anonymity can be difficult (Gibson et al., 2013) particularly as a limited number of these laptops were distributed across the different ETBs, however it remained an ethical

priority to safeguard against non-maleficence. To ensure this, all participants were given pseudonyms and the colleges were not named. Originally, I had intended to name the course that each participant was on for context as some courses are quite practical in nature while others were a lot more suited to online delivery. However, upon consideration I felt this threatened to make participants identifiable, so the discipline of the course is stated instead.

The production of knowledge is inherently ethical (Chesters, 2012), knowledge produced from this dissertation is co-created between the participants and I, as I interpret their interpretations of the phenomenon being studied. The participants are viewed not as objects of knowledge but as knowledge producers (Chesters, 2012) and thus the experts of their own experience, which aligns with both my ontological and epistemological assumptions. Ethics goes beyond the ethical approval (Shaw, 2003) and with this in mind I have shown how ethical implications were considered throughout to establish ethical rigour (Ryan, Coughlan & Cronin, 2007) at each step.

3.8. Quality and Rigor

Before embarking on this research journey the lens through which I viewed research quality standards has been strictly positivist. These natural science quality standards of validity and reliability have had to be re-scaffolded into pillars of trustworthiness; credibility, transferability, dependability & confirmability. The positivist ontological and epistemological assumptions upon which validity and reliability are built do not align with that of my phenomenological research (Sousa, 2014; Crotty & Crotty, 1998), as a set of quality criteria

they have been designed within the positivist framework. Just as all components of the research design must be aligned with the paradigm, so too should the quality criteria. Otherwise, they are measuring and assessing different phenomena, making any quality checks ineffective.

Trustworthiness has been upheld during my research journey through maintaining an audit trail (Guba & Lincoln, 1994). The time taken to audit qualitative work is a noted critique, which Bryman (2016) states as being one of the reasons audit trails are never checked. Although my audit trail was never audited as part of this process, it served a secondary purpose of aiding my reflective practice (Koch, 2006) as I actively documented and reflected on the development of my ideas. A pilot interview was conducted with a person who was known to me. This allowed me to test out the technology to ensure no errors during the real interviews and to refine the questions (Majid, Othman, Mohamad, Lim & Yusof, 2017) as there was much repetition in the first draft of questions. Member checking of the transcripts was considered to ensure no misinterpretations were transcribed, however I felt this would add little value at that point and ran the risk of participants withdrawing data (Carlson, 2010) and with a small sample size (N=5) it was not a risk worthwhile. Furthermore, Birt, Scott, Cavers, Campbell and Walter (2016) argue the most beneficial point at which to involve participants is after interpretation to ensure the researchers interpretations are correct. Unfortunately, due to time limitations at that point in the research journey this option was not viable as the students had finished college. In addition, for the co-creation of knowledge in this way, participants would need to understand the theories and concepts informing the research question (Birt et al., 2016). Instead, critical conversations with peers, lecturers and my supervisor were used to safeguard the credibility of my research (Hastings, 2012). This debriefing allowed those with an understanding of the research to ensure my interpretations were true to the data and not solely a reflection of my biases (Treharne & Riggs, 2014). The highly contextual nature of my research project also

poses issues for replicability (Bryman, 2016) to address this limitation; rich, thick descriptions are used (Guba & Lincoln, 1994) to paint the clearest picture possible to readers. By making clear to readers the holistic picture of events it allows other researchers to understand if the findings could also apply to them, or indeed to understand how to adapt it to their setting.

3.9. Limitations

This study aimed to understand the lived experience of students in order to better design supports for their success. While I believe this was achieved, the phenomenological design makes replicability and generalisation difficult (Bryman, 2016), which in turn could make enacting wider policy change more difficult. While the subjectivity offered by interpretivism aligns with my paradigmatic beliefs and captures the individualistic nature of reality, it introduces quality issues. Moreover, the highly contextual nature of this research compounds the difficulties in replicating this research.

The second research question which seeks to investigate what barriers remain for the participants is quite large in its scope. With a one-time interview it is not possible to get a full overview of a persons' life and all the things that may be holding them back. As a researcher, you rely on what a participant decides to share. While the technological barriers they are experiencing are easier to capture, more personal barriers may not have come up and it would not be ethically correct to pry into a participant's personal life. As such, it must be acknowledged that my answer to this question captures only part of their lives. Finally, another limitation of this study was the difficulty in accessing literature on the Irish FE sector which resulted in much of the literature being based within a HE context.

3.10. Reflection

I chose this topic for three reasons, firstly, I am entering the teaching profession because I believe that education has the power to both change peoples' lives and to create a more equal society. Instances such as ERL highlight inequalities already present and further compound them. The seed from which this dissertation grew was from one wishing to understand the unequal impacts ERL has had within the FE sector. Secondly, I have always had a keen interest in technology. Studying computer science during my undergraduate degree opened the world of possibilities technology had to offer but also showed me how complex and exclusionary this world can be. This experience spurred a passion within me for digital literacy and making technology accessible for all. Reviewing the literature and hearing first-hand how technology has been adapted by FE students has been both interesting and rewarding and will inform my future practice. Finally, I have been experiencing ERL since the pandemic first started last March. Having spent much time considering how my own experience has been altered, I was curious to explore its effects from the FE student perspective. Personally, I have felt my enjoyment has declined since moving online last year as I miss the in-class discussions and the social aspect of getting a coffee and chatting with my classmates. In addition, I have also been working remotely since last March and this has also been challenging in different ways. Although I have well established relationships with colleagues and am confident in what my role requires, I have felt communication has been much more difficult resulting in feeling unsupported. This insight into being a student studying from home I believe has helped to guide my research design, connect to the literature, and analyse my data.

Transcribing the interviews as I went gave me the opportunity to listen back and reflect on my performance. Coupled with the pilot interview conducted, this allowed me to reflect on how questions were being perceived and how effective they were in initiating a rich discussion. After almost every interview I made slight adjustments. One of the major improvements which came from this practice was realizing; less is more. As the interviews were not in person, I was conscious that we were missing non-verbal communication. To make up for this, I felt it was appropriate to verbally reassure participants during their answers, however this led to me hindering the flow of their dialogue. Only through listening back over the interviews was this realized, once I stopped this and allowed the silence to linger the answers from participants became much deeper (Kvale, 1999). Embracing my own experience during the data analysis has helped me to understand the deeper meanings behind participants' comments allowing latent themes to blossom. While I do acknowledge that this introduces bias into my interpretations, as discussed previously I do not believe I can “bracket” my experience. Both this reflection and keeping a reflective journal has allowed me to stay present in my bias and ensure that I do not drown out any voices.

Chapter Four: Findings and Discussion

4. Findings and Discussion

4.1. Introduction

This chapter first outlines the broad experiences of the participants, demonstrating how they are similar or different. Then, I will set out the various themes I have identified from the interview transcripts. I wanted to explore the participants' lived experience during ERL, understanding how technology fits within it, and how their new laptops have impacted this experience.

4.2. Thematic Analysis

The following themes were identified as from the interview transcripts:

- All work and no play
- New laptop, new beginning?
- Digital competency

4.2.1. Theme One: All work and no play

This theme describes the ERL experience of the students; starting broadly with the newfound changes within ERL before narrowing down into feelings of alienation and how this has impacted their experience. This is the largest of the three themes as it attempts to describe the participants ecology (Bronfenbrenner, 1979) and the essence of their experience, allowing later themes to focus on the influence of technology within it. Overall, there is a sense of loss from the students, that their experience has been boiled down to the bare minimum. There has been little to no social life and their learning has also changed and intensified. This theme will be discussed under the following sub-themes; diminished experience and alienation. The diminished experience subtheme will give an overall view of the essence of their experience which will set up the subtheme of alienation where I will delve into the impact alienation has had on their learning.

- **Sub theme: Diminished experience**

This sub theme paints a picture of how the participants' learning, learning identities and social lives have changed. And how there is added unique complexities faced by the participants due to COVID-19 and ERL. In this new learning environment, there is a lack of enjoyment and enthusiasm for the course; “It’s not the real college experience I'm getting. I mean, yeah, I'm just getting through it” (Micheal), “I know we need to do it, but it is definitely not the same experience” (Clare).

There is a sense of ‘going through the motions’ just to get through the course, rather than actually enjoying the process. Clare describes how moving online made the course seem “pointless” as she struggled to motivate herself in this new environment. A lack of social interaction is noted as Micheal goes on to say; “I'm grateful for the experience but I'm sort of disappointed I didn't get the full experience”. To get this “full experience” there needs to be a social element for students. Academic isolation, feelings of being cut off from the school community, negatively impacts on student motivation (Erichsen & Bolliger, 2011). Feelings of isolation are observed in similar studies which examine the experience of students during ERL (Chhetri, 2020; Shim & Lee, 2020). On the other hand, this lack of social interaction has led some students to become more focused on their learning. With some students reporting that they are getting more work done and learning more. “My attendance has actually been kind of better this year than it would have been if I was hanging out with my friends” (Sophie). “And you tend to learn actually more and you work a bit harder. Ehh, is that a good thing or a bad thing? It's good. But it's kind of shadowed by the fact that you also miss the human interaction” (Joseph).

While Joseph and Sophie acknowledge the educational benefit a lack of friends offers, it still does not appear to be the preferred option. The effect of lockdowns on academic performance remains contradictory within the literature (Shim & Lee, 2020; Chhetri, 2020). Although increased student performance during ERL was observed in Gonzalez et al.’s (2020) study, these students were third year university students who would be experienced learners with self-directed learning (SDL) abilities. Students with SDL abilities tend to survive better in less instructor supported learning environments, such as ERL. This suits Clare who has a master’s in Arts and recognises herself as an “advanced learner” who is quite “quite content to work away on [her] own and figure it out”. Not all students have these SDL skills, Grace who has

come straight from secondary school says she finds it hard to direct her learning through the worksheets her teachers administer.

> …it's been challenging. Because a lot of the, we have to put a lot more work in on our own to get stuff done because we don't have as much class time with the teachers … they used to be about three to four hours each per class, and now it's, sometimes it's only about 20 to 30 minutes. (Grace)

These findings also align with learner identity (Kolb & Kolb, 2009) as both participants' views of their learning ability are feeding into their success. Clare feels rooted in her identity as a confident and well-able learner, who views "not [having] a teacher there to call on every time you get stuck" as a positive thing for her learning. Unlike Grace who has had her learner identity negatively impacted by ERL as she does not believe her learning is strong enough without the support of the teachers. She attributes most of her success this year to the leaning which happened in class; "most of my improvement came from the in class part of the year".

> …it's harder…especially for someone like me. I have a harder time like learning things from like worksheets than if someone was actually teaching it to us in the classroom. (Grace)

Paradoxically this stripped-down experience has not simplified the student experience, but in fact added complexity which has "just been challenge after challenge" (Clare). Compounding

the frustration surrounding ERL students are now faced with new challenges including ICT issues and additional responsibilities from families which are not as prevalent pre-pandemic.

> Having the schools closed has definitely been demanding as you are having to fit your study around childcare... My husband in fact works shift work so it's a very demanding schedule to try and get some time for the course. You know the kids need to be fed constantly, entertained and hear positive reassurance. Like it's a lot of pressure to help everyone in the house keep a positive mental state when things are just so so busy. (Clare)

Clare is feeling the stress of being a mother to two young children during this time, without the support of extended family and childcare services, much of the responsibility is falling to her. While women traditionally do more caregiving activities in the home, this has been heightened during COVID-19 as the additional childcare needs have unequally been taken over by women (Anderson, 2021) which will act as a hindrance for student success. Technology is also hindering some students, while it has played a vital role in the success of ERL, it has added levels of complexity to the students experience both through communication styles and a lack of skills. Micheal describes below how arduous group projects have become since using video conferencing platforms:

> ...it adds a step to everything. So instead of meeting in a room, you'd have to do a Zoom call, you'd have to share screen, you'd have to email something...so that just adds another step to everything, every process. Yeah, just complicates it I suppose. (Micheal)

The added steps Micheal describes also inherently require the skills to be able to execute them. The lack of these skills has left Joseph feeling "frustrated" as he had to do an "awful lot of searching to gather all the information" that was required for assignments. Digital skills, alienation, and communication will be explored in more detail separately in the coming sections, but their mention here is relevant to show the overall compounding effects they have on the student experience. Students who lack enjoyment or have low levels of satisfaction are less likely to complete online courses (Herbert, 2006), thus understanding the holistic experience of the student is paramount to improving it.

- **Sub theme: Alienation**

Alienation as defined by Bronfenbrenner (1986) manifests as a lack of belonging and feeling cut off from family, friends, or school. This phenomenon can lead to social and academic withdrawal (Schultz & Rubel, 2018) and lower rates of persistence among online learners (Xu & Jaggers, 2013). Outside the virtual classroom, the COVID-19 pandemic has compounded feelings of alienation through social distancing and people staying in their homes during lockdown (Zhu, Zhang, Zhou, Li & Yang, 2021). It is important to recognise the contextual difference of these findings in comparison to much of what is in the literature which was published pre-pandemic. Within these findings there are strong feelings of social and academic isolation during ERL, students do not have the same social support and structure as they have had before. Clare, Grace & Joseph were in college during the first semester and not for the second semester. This gave them the contrasting experience of spending time with their peers to establish friendships before moving online. Unlike Sophie and Micheal who spent almost

the entirety of the year online, expect for practical assessments. Most of the students miss the little things, such as getting coffees. “You feel disjointed from the other people that you would usually be with… you don't really appreciate the simple thing of having a cup of coffee and a bit of craic” (Joseph).

Grace speaks to the difficulty of trying to connect online and she was not “able to make any brand-new friends” once the course went remote, which led to her feeling isolated and unsupported. She states, “I'm the only person I know that, at least in my circle that, or in this house that does this kind of field”. Friends and peers are not just nice to have, they provide emotional support and guidance which helps to increase student persistence (Wells, 2008), navigating this world alone leads to feelings of academic isolation (Erichsen & Bolliger, 2011). Others were able to make friends, both in person and online:

> …only due to the fact that we were in the college up until Christmas we had a lot of time to bond and get to know each other. We got to know the teachers as real people, not just faces on a screen. Had we not had that time together I’m not sure how it would have progressed. But actually, that being said, as we were split into two groups there was a whole other group of people I only knew online, and we still bonded. Just over the ridiculousness of the situation and how crazy everything is. (Clare)

Clare differentiates between the friendships she made over the past year. While she did still make friends online it was over a shared common experience. This points to the culture of the group; they were able to establish a norm of what to talk about which led to social bonding

(Rovai & Wighting, 2005). A sense of normlessness can contribute to feelings of alienation. Clare also speaks about getting to know the teacher has “real people not just faces on a screen” which shows the level of disconnect between Clare and her teachers when the interaction was online. Only that she spent time with them in person during the first semester did they feel like “real people”. Micheal also speaks to the lack of human interaction affecting his engagement.

> …lectures on Zoom or teams, it's just, it's not the same really because, I don’t know, I think it's the fact when you’re not in a room with someone, it's a lot easier to zone out, and they're not making eye contact, so it's a lot easier to not to get distracted. (Micheal)

Mann (2005) attributes alienation to a failure of communication, which is echoed by Shim & Lee (2020) who attribute feelings of isolation and a poor sense of belonging to inadequate communication. There is a noted difference in the communication between online and face-to-face delivery, for example Sophie feels she has “missed a lot of information because it's been online”. There appears to be a lack of uniformity within the colleges communication methods with each teacher approaching it differently. It has made students feel out of the loop because when students are in the college, within their learning community, they are naturally exposed to information. Whereas, in this online world students are required to search for the information and then decipher what their teachers are telling them.

> Because you had maybe eight teachers, and you all have different methods of communication. I think it was five or six ways, like personal email, teams, emails, all different ways they can contact you… So you have to do an awful lot of searching to

> gather all the information .... But if you were with people in the college having a cup of coffee, they would say "Oh, don't forget Joe Bloggs wants by Friday". So I did slip up, I managed to do them all, but I found that a little bit stressful. (Joseph)

Sophie expands on this “challenging” online communication:

> I have found it quite challenging at times because you do feel quite isolated. And similarly, you know, you don't have anyone to really ask for help or clarity on things, it is a lot harder to kind of put your hand up through a screen, whereas in class, you can just kind of shout out an answer much easier. (Sophie)

Sophie & Joseph are feeling isolated and unsupported in this new online world. Both contrast back to how they would ask for help in face-to-face delivery by relying on physical cues and peers. Sophie being unable to put her hand up and ask for help shows this new online communication is hindering her learning process and stopping her from actively engaging in the class. This inability to ask a question in class could also be attributed to a fear of not conforming to the community norms further alienating her (Mann, 2005). The communication difficulties experienced by these participants are aligned with other students learning during ERL (Shim & Lee, 2020; Chhetri, 2020; Meeter et al., 2020). Although participants in Shim & Lee (2020) have contradictory reports of some students preferring the communication online.

Learning is not simply the accumulation of knowledge, learning is socially constructed through interpretations with one's environment (Vygotsky, 1978). It is a process embedded within a

knowledge community which is navigated by learners. Learning theories have evolved from the transmission style of teaching which has been critiqued as alienating students as they are disconnected from the work they are doing (Radford, 2016). More recently classrooms have been flipped to be more student-centred, adopting social constructivist theories (Vygotsky, 1978; Dewey, 1986) which favour group work and peer interaction. In this more progressive style of teaching the student is actively involved in their learning. It appears during ERL educators have been forced to adopt a more transmission style of communication and teaching. Sophie and Grace hint towards this transmission style of teaching as they just "watch the teachers" through the screen. Sophie describes her lectures as "boring when it's just PowerPoints" and desires more interaction and involvement. Even when teachers attempt to use breakout rooms to foster peer-learning, there is a lack of support from peers themselves: "You go into breakout rooms, and people will be on mute, they won't have their camera on, they wouldn't be in the room." (Micheal).

It has been shown that alienation is inversely related to classroom community (Rovai & Wighting, 2005). Having a social presence involves interaction and interpersonal relationships is the basis for a social community (Stodel, Thompson & MacDonald, 2006). Discussed above are the experiences of students who struggle to form a belonging to a community, however Joseph experiences a strong sense of community despite being online.

> [It's] just a fabulous community of people who enrich people's lives is how I would look at it. It's quite a cocooned environment, which is fantastic. And now I've come from a world that was more a war front of being self-employed. And having to do all

> the aspects of the pie to be self-employed. So, I have found this like an oasis of calm, you know. (Joseph)

With varied life experience behind him, Joseph appreciates the support and artistic freedom afforded to him in this course. He feels a very strong sense of belonging within this community. Joseph may feel some sense of alienation from society itself and within this educational environment he finally feels accepted.

> I mean society is kind of odd when it comes to art and crafts. They don't, they don't value it. But when you're in an environment like that, where you're surrounded by artists, and you're being taught by artists. You realise that you're actually quite sane, but you're not actually you're just it's, they appreciate it whereas society doesn't. So, it is really comforting from that point of view. So, it is a very empowering experience. (Joseph)

Having a community of like-minded people to connect with is a motivating factor for students in online education (Cai & Zhu, 2012), although the effect of community on motivation remains mixed within the literature (Moller et al., 2005). Despite the participants having varied experiences of community, those who felt a sense of belonging and support provided by their peers appeared to have higher motivation and enjoyment. Echoing back to Mann (2005) the root cause of issues surrounding alienation and community could be addressed through communication and opening dialogue.

4.2.2. Theme Two: New Laptop, New Beginning?

This theme explores the process by which the students obtained their new laptop detailing the difficulty some students had in comparison to others. This theme will be broken down into the following two sub-themes; obtaining the new laptop and the impact of the new laptop. Obtaining the laptop looks at why these students needed the laptop to begin with and their experience of obtaining a new one. The impact of the laptop explores how the laptop met their needs and how it thus affected their learning experience.

- **Sub theme: Obtaining the laptop**

All the students required a new laptop as their old laptops were faulty. The students describe the difficulties they had with their old laptops which ranged from broken cameras, slow operating speeds to being completely redundant. All students were emailed by their college administration about free government funded laptops, advising if they needed one anyone could avail. However, this criterion to obtain the laptops did not seem clear to students as most waited until their teachers personally told them to apply for one. As Sophie's laptop was still partially functioning, she dismissed her needs to get one until a teacher told her that she should. Similarly, Clare also was told by their teachers "about these free laptops so [she] put [her] name down and got one pretty quickly". While Sophie and Clare were experiencing technical difficulties, which were alleviated by obtaining the new laptop, Joseph was struggling with dyslexia on top of technological problems. He contacted the college for learning supports, however as his dyslexia diagnosis was over 45 years old, and he did not have the Dyslexia Report, he was not eligible for supports.

> I was diagnosed as dyslexic when I was 14, but I didn't have that piece of paper it was going back too far. And then I was told that I'd have to pay 500 or 600 euro to get a [new] test. (Joseph)

Not only is a new test costly, but the waiting list for a test can also take months. As dyslexia is not a learning difficulty which goes away over time (Snowling, Hulme & Nation, 2020) this is an unfair limitation placed on students who need help. Joseph then turned to the laptop scheme for help based on his dyslexia but was told this was not the criteria to avail of a new laptop. Only for a teacher witnessing his technological struggles was he finally given a laptop.

> I'm not sure what the criteria is to be eligible for it but I was told I wasn't eligible for it because I'm dyslexic …I was then on teams, one of the teachers was very frustrated talking to me, because we'd have to, I'd have to use two laptops, and go left and right and sharing documents and then have to go back to the other computer. And it became quite tedious in the meetings so he said, he said, politely come in, and I will give you a computer, so that's how I got the computer. (Joseph)

These stories show the unnecessary confusion over the process for obtaining new laptops. Recommendations for improvements to this process will be covered in Chapter Five.

- **Sub theme: Impact of new laptop:**

Once the laptops were obtained the students had a varied response to them, for most the new laptop meets expectation and fulfils their needs. However, for Clare and Joseph the stress continues after getting the new laptop due to unfulfilled needs. Joseph had additional needs with the new laptop and required speech to text software. Similarly, Clare required CAD software for her course, but her new laptop did not have it and it took some time for the ETB to provide the licence. She highlights the time pressure that she is under with her two children at home which compounds feelings of stress and the loss of time due to slow responses from administration.

> But when I went in to get it, it didn't have the software I needed. I was already falling behind and just trying to remember everything the teachers were saying in the online classes so when I got the software I would hopefully be able to do it ok. Eventually the ETB gave us access to a free [CAD] licence but to be honest I just thought it was too little too late. I had lost so much valuable productive time, like I have such short windows of time to get all this done. (Clare)

Once the laptops were modified to the needs of the students the experience became much more enjoyable and the benefits were obvious. They are perceived as a "big help" (Grace) as students can now access new software and functionality they did not have before. The main benefit being that the new laptops brought a sense of ease to their experience. Some of the students were using their mobile phones to complete college work and while this still allows you to participate it does not have the same functionality that a laptop has. Simple tasks which were

once difficult to complete on their phones are now much easier. Grace and Sophie appear more engaged and motivated as their basic requirements are met, becoming more focused and engaged by turning on their cameras.

> I feel like I could focus more with a laptop than say before that, I think I only had my phone to do stuff on like type but it is really difficult to type on Microsoft Word with the phone. So, having the laptop is a lot easier. (Grace)

> But I'm so glad I did get the new one because it's made such a difference and it just makes things easier I think, yeah definitely easier. Like I can join Teams because I was joining on my phone before sometimes which isn't the same and plus you actually have a camera now so it definitely easier. (Sophie)

All of the students comment on the fact that they now have a functioning camera on their new laptop, which relates to the theme of alienation. Students are now better able to turn on their cameras and be seen by their classmates. This is a profound improvement to the student well-being that they can feel more involved in the community. Joseph speaks to the improvement he felt in relation to this once he received his new laptop with a functioning camera: "the other benefit was it was very comforting to be on the Teams meetings, where you interact with people and it was actually quite good fun". Issues with WiFi and broadband were not mentioned by any participant in this study, which contrasts with the literature (Nguyen et al., 2021; Ramachandran & Rodriguez, 2020; Shim & Lee, 2020). This may be due to the students being in Dublin where broadband connections are stronger than more rural areas. The extracts above show the positive emotions associated with the laptops once the necessary supports had been

provided. However, the benefit these laptops have on their learning will depend on their skills level. Those who have low digital skills could be slowed down by simple digital challenges which could result in them falling behind (Peterson & Scharber, 2017). As discussed in the Chapter Two, providing hardware is not enough to bridge the digital divide, training and skills related supports are also needed (Hall et al., 2021; Kennedy et al., 2016).

4.2.3. Theme Three: Digital Competency

In this theme we move beyond the first level of the digital divide, which deals with hardware issues, to the second level digital divide, where I discuss how the participants' digital skills and digital competencies affected their use and application of their laptops. Here competency encompasses "skill levels from basic visual recognition and manual skills to more critical, evaluative and conceptual approaches, and also includes attitudes and awarenesses" (Martin & Grudziecki, 2006, p. 255). It is observed that those with a better skill set are confident in their abilities and have more explorative use for their laptops. While those with a lower skill set are lacking confidence, have less curiosity about their laptop and have some naivety around technology. Informed by the DigComp 2.1 Framework (Carretero et al., 2017), the findings will be discussed under the sub-themes of; digital literacy, communication and collaboration, and problem solving. Concluding remarks will outline how students' skills could be better developed to empower them through increased confidence and use.

- **Sub theme: Digital Literacy**

Digital literacy is the foundation for this theme, being empowered in this area allows for better digital use in the remaining sub-themes (Martin & Grudziecki, 2006). Students who struggle in this area experience a lot of negative emotions, such as stress, frustration, and self-doubt. Those with low digital literacy skills are struggling with basic functions such as navigating sources, refining down and managing data. The extracts below show how Sophie and Joseph's low digital skills are affecting their learning experience. It slows them down, limits what they can do and stirs up negative emotions.

> The online resources are very difficult to navigate. And obviously I can't go into a physical library so it's very difficult to, to find resources and find things so I'm very limited in that sense as well. (Sophie)

> …trying to find what you have to do… suddenly you get a bit frazzled when you're, maybe 20 minutes just trying to find what the hell they want, you know. So that was certainly a bit of a stumbling block for me. (Joseph)

Associated with poor digital skills are misconceptions towards technology. Many of the students here attribute difficulties with their new laptop to be the fault of the hardware, when in fact it is misunderstandings in their knowledge. Critically engaging with technology mitigates risks associated with technological naivety, such as hacking and bullying (McBride, 2018). Both Sophie and Joseph are unable to convert files to PDFs in the same way as their old laptops, which they believe to be a gap in their laptop's functionality. Moreover, Sophie finds

frustration in which format to submit her assignments, this is a simple misunderstanding which could be resolved through clarification by the teacher. Many of us familiar with technology unintentionally skip steps which we have become so accustomed to when explaining how to do things on a computer. Knowing the format an assignment and how to convert between them is a basic thing students should be shown.

> The only annoying thing is I can't get the thing that converts things to PDF but you can submit things, like assignments, as word documents anyway so from that point of view its ok. (Sophie)

> And my new laptop doesn't have the same PDF option. So the computers were great but it just wasn't all knitted together. (Joseph)

Grace mentions how the only fault of her new laptop is that she is still unable to download Zoom software which wasn't available on the App Store, when Zoom can in fact be downloaded directly from their website. Again, this is a simple misunderstanding which could have been resolved with some support and guidance.

> I wasn't able to get Zoom downloaded on the laptop. Because it wasn't available on the App Store on the laptop for some reason even though it's, It's available on most other app stores (Grace)

For these students, low digital skills are limiting their digital use. Being unable to resolve these issues for themselves means they are unable to get the most out of their new laptops. Digital literacy is a multi-layered competency in which people must have the basic skills before building towards higher-order skills (Martin & Grudziecki, 2006). Thus, their abilities to navigate and search for information is going to dictate their problem-solving abilities. The same students who demonstrate levels of naivety also show a lack of confidence in their digital abilities. Describing themselves as “not very confident” (Sophie) or “not that experienced with computers” (Grace). Being confident in your abilities is paramount to expanding one’s own skill set (Ramirez-Montoya, Mena & Rodríguez-Arroyo, 2017) and having a low self-esteem affects your learning identity and creates negative emotions towards oneself, “that can be a little bit tedious, and I can feel like a fool sometimes because you think "I should be able to do this"” (Joseph).

On the other hand, those with confidence in their technological abilities also demonstrated better use of their new laptops as they were better equipped to explore the laptops capabilities. As Micheal discusses below he feels a deep connection to his laptop which he feels confident to explore by learning and expanding his knowledge around. Moreover, his ability to help others shows an advanced skill set (Carretero et al., 2017).

> [I’m] very confident… I’m not a I’m not an expert but, yeah, I know the basics I always help people with their laptops and I always try to be learning, be learning more about it. (Micheal)

Self-perception associated with one's digital skills is an important determinant for how digitally competent an individual will be (Ramirez-Montoya et al., 2017). Similar to the learning identities discussed above, those with a positive self-perception will have more of a growth mindset (Dweck, 2006). This will enable them to have the motivation to keep trying when they have failed and subsequently improve their performance.

- **Sub-theme: Problem solving**

Problem solving skills were evident in the data, with participants detailing how they adapted the technology to their needs. Some participants were further able to troubleshoot and solve problems encountered.

> [I] was excited to get the laptop and I was excited to use it. But then it's also a case of trying to learn how to use it and how to use it effectively. Yeah, so like, just your typing speed up and getting the best programmes that help you (Micheal)

As discussed above, students with low digital literacy skills showed an inability to solve problems or to adapt their laptop to their needs. Micheal clearly shows that getting the laptop is just the first step, in order to become a successful user you must know "how to use it effectively". For this he found programs which could help him improve his typing skills and a mind map program which he downloaded to help him study as he is a "visual learner". Clare and Joseph also show problem solving abilities through the ability to "just figure it out" (Clare) and "learn by doing" (Joseph). The importance of basic digital literacy and a sense of

confidence in one's abilities is paramount here to support this 'trial and error' type of learning required to troubleshoot (Dweck, 2006).

> If there's an issue that I can't figure out, you can just very easily go onto YouTube, ask the question, and then you realise - "Oh my god that it's how you do it" and then you just do it". (Joseph)

> I had never used CAD before so that was a totally new skill set for me. It took me ages to get used to it but I know everyone who is new just has to feel their way around until they figure it out. In many ways it was better to be doing that remotely and not have a teacher there to call on every time you get stuck because it forced you to figure it out yourself. (Clare)

Joseph shows contradictory skills levels, as these skills are being self-reported this can introduce bias which tends to be positively skewed (Aesaert, Voogt, Kuiper & van Braak, 2017).

- **Sub-theme: Communication and collaboration**

Throughout this chapter, the crucial role technology has played in communication has become evident. Here, I will discuss how students are using technologies to collaborate; socially and educationally. Under the theme of alienation, participants discussed the important impact video conferencing platforms (such as Teams and Zoom) have had on their experience. It is however

the intention of this sub-theme to frame their communication activity within their competency level. Showing that those with more advanced digital skills are better able to communicate and collaborate, which will lessen feelings of alienation and improve their overall experience. When asked what the biggest help to him this year has been Micheal choose the Teams platform which allowed him to communicate and collaborate easier:

> Microsoft Teams have been a massive help. For I know we've done classes on that but even just group projects, because you can put out of all your ideas, all of your work into one place and that's a centralised place so it's, it's easy to access. And then even meeting people, it's, it's sort of like a one stop hub for all of your college work rather than go into different, like, going from one website to another to another, so it just makes everything a more condensed and easier to access. (Micheal)

While Micheal could interact, share and collaborate online with relative ease. Contrastingly, Joseph found Teams "frustrating" as he had "to do an awful lot of searching to gather all the information" on this platform as all the teachers stored the information slightly different to one another, which also shows how the teachers were each adapting to the online world themselves. As discussed above, Joseph's digital skills are hindering his ability to collaborate online. Throughout this theme the participants have demonstrated how their digital skills and competencies have determined their use and impacted their self-efficacy. It is clear that supports to build digital skills and transferable competencies are required to empower students to become better computer users.

4.3. Answering the Research Questions

The themes discussed above detail the participants' experience during ERL, the process of obtaining their new laptops and how these laptops were used and integrated into their lives. Which gives context and understanding to their experience. I now wish to directly address the research questions.

- Research question one: How have free government provided laptops impacted the experience of FET students during ERL?

To answer this question, it was necessary to first understand their experience of ERL from the participants perspective. Then to determine the significance of technology within this experience, in order to finally understand how the laptop fit into it all. The participants report ERL has been a more challenging experience than face-to-face, for various reasons. It has become a world with less human interaction and more intensified learning which requires new self-directed skills. They are presented with new challenges due to the pandemic such as increased demands of childcare and being unable to see friends and family for support. The biggest loss for the participants is the social aspect which, coupled with challenging communication has led to feelings of isolation and alienation.

Technology is central to the success within this world; it acts as the medium between the students and their teachers and friends. Although communication through this medium is more difficult than face-to-face, without it, students would have no way to communicate at all. The

added struggles and negative emotions when technology fails are evident through the participants accounts before they get their new laptops. When juxtaposed against the sense of ease provided by the laptops shows the importance of functioning technology within ERL. Even the students who had difficulty in obtaining the laptops, and getting them adapted to their specific needs, appreciate their laptops. For these reasons, I believe the laptop had an overall positive impact on their experience as it improved their ability to study and engage with their online community. However, the process by which they obtained the laptops could have been improved.

- Research question two: What barriers remain for these students?

This question was posed as I anticipated that not all students' needs would have been addressed and wished to identify what further support could be provided. Although the laptops have undoubtedly improved the student experience, it has not addressed all issues.

Five barriers have been identified, although three of them have been overcome this year they are included as they could recur. Firstly, digital literacy remains a barrier for most students. The digital competency theme demonstrates the significance of becoming a digitally competent person, students with low digital skills are negatively impacted through lower digital self-esteem and getting less use out of their laptops. Support systems needs to be put in place to build basic skills for students which will enable them to become more proficient users. Not only to help their education but equip them with transferable skills they can use in further education, employment or wider life. Secondly, communication has come up as a barrier in

many forms throughout this chapter. Teachers do not have standard or uniform channels of communication and the forms of communication, with both teachers and peers, are more challenging than face-to-face which contributes to feelings of alienation. Childcare is also a noted barrier which has the potential to be ongoing. Although only one participant cited this as a temporary barrier due to childcare being closed because of lockdowns, it is included here as it is a cited barrier in the wider literature (Wright, 2013). Clare describes how this impacted her negatively by cutting down her available study time, addressing this appropriately requires more equitable policy making (Wright, 2013) in which colleges could help by providing more flexibility to students with such responsibility outside the classroom. The process of obtaining the laptop was another barrier, which could be an issue should this ever arise again. Many of the participants describe the confusion around how to get a laptop and the criteria for application. Furthermore, the additional software requirements were difficult to get and should be better embedded into the process with adequate IT support. This will be discussed further in the recommendations in Chapter Five.

Chapter Five: Conclusion

5. Conclusion

The purpose of this dissertation was to explore the experience of FE students during ERL who have received laptops as part of 'Digital Divide' government funding. Capturing how technology fitted into this experience to demonstrate the impact these laptops had for the participants. Moreover, this research examined challenges faced by the participants during this year and identified barriers. As our societies and classrooms become more digitised and the need for support changes, we must "understand the current digital experience of staff and learners within FET to make effective plans for improvement" (SOLAS, 2020a, p. 58). Upon review of the current digital policies there appears to be a disconnect between what has been written and what is needed to address digital equality issues. This research has attempted to fill the gap from the FE student perspective with the aim of better designing supports.

Firstly, a picture of the student's experience was captured, as the context and global nature of their experience allows for a better understanding of their needs. The quality of their experience has lessened over the past year as it has been reduced to the bare minimum. The reduction in quality was especially felt by the students on practical courses who had the most important pieces of their education taken away from them, rendering the course "pointless" (Grace) and negatively impacting motivation and perseverance. All students lost the social aspect of the course which is what gives education its vibrancy: "you really sort of grow off the stuff you learn outside the class" (Micheal). However, the silver lining of this academic isolation was an increased level of focus felt by some students. Attendance was better, as was the level of

learning due to less distractions. The teaching had reverted to a more transmission style where students were not actively involved and felt less supported than in face-to-face. Moreover, due to the less supported nature of the course it meant that many students' learning identities were impacted during ERL (Kolb & Kolb, 2009). Those with positive learning identity felt secure and confident in their learning abilities to persevere and figure things out. Whereas those with a more perceived fixed mindset (Dweck, 2006; Kolb & Kolb, 2009) struggled to adapt to this environment where stronger self-efficacy skills were needed. Within this dataset, participants with higher levels of education had better learning identities than those with lower levels of attainment. This highlights the importance in empowering students with the skills to become self-directed and have a growth mindset, rather than simply the transmission of technical knowledge. Outside the classroom, students had additional challenges of childminding which impacted their learning. This added stress and cut down on time available to dedicate to the course.

Outside of their academics, students were missing human interaction which left them feeling isolated and unsupported. Some participants had the opportunity to make friends when they were temporarily in the college during the first semester, however the majority reported the inability to make friends and connections online. Connections which we made in person gave the students a better sense of belonging and meaning to their educational experience when things moved online. Alienation is inversely related to classroom community (Rovai & Wighting, 2005) and communication is key in creating an effective online community environment (Mann, 2005). Communication in this digital environment is complicated for students as they battle against new processes and channels of communication. It is not clear how each teacher communicates, with different teachers storing information in different places, even when students find where this information is stored there is difficulty in deciphering what

is being said. Furthermore, between each other students find communication confusing and arduous as digital communication "adds a step to everything" (Micheal). Low digital skills negatively impacted participant's ability to communicate and collaborate online compounding feelings of frustration and alienation. The norms of the digital community plays an important role in facilitating communication and a sense of belonging (Mann, 2005). For students who made friends online there was a culture of bonding over the pandemic and the "ridiculousness of the situation" (Grace). Establishing norms can be difficult in online communities because when an individual makes a contribution there is a sense of anonymity in which they cannot 'read the room' to understand if their contribution has been well received by the community, particularly when people have cameras off, or when posting messages in a chat forum. This can prevent students from participating (Mann, 2005), which is seen when participants from this sample refrain from speaking up and asking for clarification on things they would have during face-to-face delivery. Despite the difficulties in communication and socialising online, one student found commonality within his group of like-minded people, which added to a sense of belonging and increased motivation (Cai & Zhu, 2012).

The next objective was to examine how technology fit into their overall experience as detailed above. While technology has been vital in successful ERL, digital inequality has impeded the success of ERL (Reynolds & Chu, 2020). Similar studies examining student experience of ERL report technological issues such as too many platforms being used (Rahiem, 2020; Ramachandran & Rodriguez, 2020), lagging audio (Shim & Lee, 2020) and network instability (Nguyen et al., 2021; Ramachandran & Rodriguez, 2020; Shim & Lee, 2020). Contrastingly, network instability issues were not found to be a problem for participants in this research. All participants in this study requested a new laptop as their original one was broken. Their broken laptops caused the participants stress and impeded their learning as they were using mobile

phones to join classes and type assignments on. The process of obtaining a new laptop appears to have been unclear for students, emails were sent from the college's administration to all students in the college informing them of the availability of these laptops. However, it was individual teachers who encouraged students during class to apply for the laptops that made them go forward. For some there may have been a lack of awareness of their technological needs or not "deserving" (Sophie) of a new laptop, while others did not appear to read the email. Joseph needed speech to text software so turned to this laptop scheme for help as he was unable to receive traditional learning supports due to an outdated dyslexia diagnosis. All participants demonstrated a clear need for new, functioning technology, although some participants required additional supporting software which was not easily accommodated and further added to feelings of stress during already difficult times. Once barriers surrounding access are overcome, the benefits become apparent. Students were afforded a better sense of ease with their new laptops which allowed them to become engaged as they had cameras to turn on during class and Microsoft Word software to facilitate the completion of assignments. Students also attribute the laptops to increasing their motivation. It is indisputable at this point to deny the importance technology has played for these participants, without which they would have been shut out from their digital world. However, technology requires skills to use and navigate and it is one's skills and competencies which determines their engagement with technology. Therefore, it is their skills and competencies which also determines the quality of the ERL learning experience. From the findings it is evident that participants with low digital skills have had their experience negatively impacted. As digital skills are built incrementally, lacking basic skills will hinder those without them (Martin & Grudziecki, 2006) while those with digital skills have the abilities to further enhance theirs. Participants with low digital skills are limited in how they can communicate which adds to the negative feelings of isolation and alienation discussed above. In addition, their problem-solving abilities are lower.

Contrastingly, those with stronger digital skills show more advanced problem-solving skills. They can identify their needs, adapt the technology to their needs and also troubleshoot any issues as they arise. Problem solving abilities require a growth mindset (Dweck, 2006) as participants may not know the answer but have the confidence in their basic abilities to solve issues independently.

The findings demonstrate the importance of access and skills for effective technological use, the need for effective student-centred pedagogies to engage online students and the need for creating a community of learning environment. Moreover, these findings are not intended to be a criticism of how school administration or teachers have managed during this situation. ERL is by definition an emergency response for learning, which is required to allow education to continue despite a crisis (Hodges et al, 2020; Shisley, 2020) allowing students to continue progressing. Under this guise it has done exactly what is required of it. Finally, this research has brought about a critical reflection of my future practice as an educator and helped me to understand my own educational values and beliefs.

5.1.Recommendations

To improve the online experience starting with pedogeological design, teacher support and training should be provided to allow educators to upskill. A lack of training is cited as biggest reason for failures in 1:1 teaching (Hall et al., 2021; Kennedy et al., 2016; Paredes-Labra et al., 2017; Peterson & Scharber, 2017) and is vital in designing educational content which will widen participation (Littenberg-Tobias and Reich, 2020). Teachers should also be given free

access to software which will enable them to make interactive and engaging content. Improving communication could also improve the sense of community and inclusion. Many participants of this study felt unsupported by teachers and peers, in addition to feeling that they were missing information due to asynchronous communication methods. The use of virtual classrooms as virtual support centres has been proven effective in making distance learning students feel more connected and supported by staff and peers (Goldrick & O'Higgins Norman, 2012) as they favour synchronous over asynchronous communication. In addition, the inconsistency of approach to communication may suggest a lack of collaboration between the teachers within the colleges. By working together to develop a policy around communication it would lessen the stress on students. Further to this, teachers could collaboratively reflect on their experiences of communicating with students online to drive continuous improvement (Lofthouse, & Thomas, 2017).

The process by which students gained access to their laptops was fraught with confusion as it was not clear if they were eligible until they spoke to a teacher. A college wide email from the administration may seem impersonal and was missed by some of the students. Perhaps having a more teacher-led selection process to guide the students from an earlier stage would have worked better than an email. Although I also recognise the added responsibility on teachers, particularly this year, may not have been possible. Moreover, this hesitancy to apply for a new laptop could also be attributed to a misunderstanding of the participants own technological needs. In this case teacher guidance is also important to understanding and identifying their needs (Redecker, 2017). A further recommendation for ETBs and SOLAS, which could lessen the load on teachers, is the inclusion of dedicated IT Departments in FE colleges much like private companies have. Having a specialised service for staff and students to avail of for

technological issues and support is a much more effective use of time and money than having untrained and overworked staff attempting to fix technical problems.

Finally, all areas of the digital divide need to be addressed from a policy level. The review in Chapter Two reveals that there is a disconnect between what has been written into policy and the complexity of the situation in the literature. The findings of this research add to that body of literature which demonstrates the multifaceted nature of the issue and highlights the impact it has on student success and enjoyment. The first level of the digital divide is being addressed in policy (SOLAS, 2020a) and practice through improved infrastructure and process improvements outlined above. The second level digital divide needs to be addressed through better training. No training was provided for students when receiving their laptops and no such supports appeared at their disposal during their time in college. This is highlighted as a gap in the most recent literacy policy from SOLAS (SOLAS, 2020b) however as stated previously when and how this is happening in practice is not made clear and will be too late for the participants of this study. A practical way for educators to increase their student's digital literacy could include incorporating these skills into their classroom (Press, Arumugam & Ashford-Rowe, 2019). The Finish education system teaches critical thinking skills from a young age enabling their population to critically engage online (Horn & Veermans, 2019). Again, supporting students in such a way requires adequate teacher training. Finally, to address the third level of the digital divide requires an understanding of the outcomes for people wishing to engage (Helsper, 2016). Arguably it makes sense to understand the desired outcomes to then decide what skills the person would need to achieve this to create a more meaningful experience. Based on a similar model to how educational Learning Outcomes (LO's) inform pedagogical design. Teaching people skills which do not align with what they

want to achieve technologically could prove pointless, particularly with adult learners (Knowles, 1978).

5.2.Further Research

This qualitative phenomenological research design has shown how researchers can understand, beyond the demographics, what students are experiencing and where the gaps are. However, this study examines the experience of a small number of students from only two ETBs, which also does not represent the nationwide cohort of FE students whose experiences could be different to those from Dublin. I would recommend further phenomenological studies to be conducted in the various ETBs across Ireland to gain a more representative understanding for local students, allowing for more specialised supports to be designed.

To accurately address the digital divide within educational settings it should also be studied from the teacher perspective. As detailed in the EU Digital Competence Framework for Educators (Redecker, 2017) there is a requirement in the modern age for educators to be digitally competent to empower their students. This dissertation focuses on the student perspective, examining how the pandemic impacted students by exacerbating inequalities, but the same effects are felt by staff. This is a gap in the literature (Willems, 2019) which needs attention in order to affect meaningful change.

5.3.Conclusion

This research has added to the existing body of literature on the digital divide; however, its uniqueness comes from its methodology and context. Qualitative research on the digital divide is lacking, with quantitative methodologies being more prevalent (van Dijk, 2006). Moreover, Further Education in Ireland is an underreported area within the literature. This research gives an in-depth exploration into the lives of an underrepresented cohort of students to better understand their needs. This type of research is necessary if we are to better design supports, both for learning and technology, and more inclusive online learning experiences for students.

This piece of work has been a transformative milestone along my learning journey which has broadened my way of thinking. The philosophical shift from a natural to a social scientist, as discussed in Chapter Three, has opened my eyes to the differences in how we each experience the world. My natural science education has moulded me into a logical problem solver, which fits the natural world order. While my social science education has now expanded my logical black and white thinking, to be colourfully critical and encompassing of wider perspectives. This change in thinking coupled with a better understanding of the student experience will carry forward into my future practice. Prior to this experience I would have considered there to be one preferred method to teach a topic, but I now know to come well prepared with an arsenal of different methods to teach the different needs of the students in front of me.

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APPENDICES

Appendix 1 – Interview Question Schedule

#	Question	Justification	Adapted from
General			
1	Can you please tell me the story of how you got here and why you chose to study this course in College X? - Course: - Any practical work/assessment: - Age:	Understand background info on; previous education, age/stage of life, caring duties etc	Farrell et al., 2020 – Irish study focusing on the student online experience
2	How has the pandemic impacted you this year?	Trying to keep it open to get a sense of whether it is overall negative or positive. Again, follow anything relevant.	
3	Is there anything which has really helped you during this time? (Prompt: Can be person or thing, doesn't have to be college related)	May open up something interesting. They may say the laptop, the teachers, friends they have made, etc	Farrell et al., 2020 – Irish study focusing on the student online experience
4	And anything which has really <u>not</u> helped you during this time? / what has been your biggest challenge?	May open up something interesting. Could be the pandemic, studying online, lack of interest in the course, personal issues (health, bereavement), etc	Farrell et al., 2020 – Irish study focusing on the student online experience
ERL			
5	Have you enjoyed studying at home? Why / why not?	May not need this as Q4 may cover it. But good to capture positives and negatives of the pandemic and studying at home.	Farrell et al., 2020 – Irish study focusing on the student online experience
6	Did you feel engaged with your online classes this year? - How could they have been more engaging? - What were you missing?	Perceived engagement is important for their academic achievement. Will most likely mention motivation here too.	Ewing & Cooper, 2020 – Australian study on student, teacher and parent perspectives of ERL and technology

7	Can you tell me a bit about the social aspect of college this year?		Farrell et al., 2020 – Irish study focusing on the student online experience
Laptop access			
8	How has your new laptop impacted your experience? Has it lived up to your expectations?	General question again to get an overall sense of its impact which will guide further questions.	Farrell et al., 2020 – Irish study focusing on the student online experience
9	How confident are you in your computer skills?	Direct question to establish skill level.	Ewing & Cooper, 2020 – Australian study on student, teacher and parent perspectives of ERL and technology
10	Do you think your computer skills have improved this year?	Direct question to enquire if the laptop has helped them improve their skills and confidence.	Ewing & Cooper, 2020 – Australian study on student, teacher and parent perspectives of ERL and technology
11	Were there any challenges you still faced after you got the laptop?	Aiming to relate any challenges directly to research question 2.	
12	Do you think you would have benefited from any additional supports? (Prompt: this could be technological, academic, personal, etc)	Direct question on how they were supported and any recommendations they may have	
General			
13	How do you feel now that you're near the end of your course?	Open question, no expectations or preconceived ideas of what they will say	Farrell et al., 2020 – Irish study focusing on the student online experience
14	Is there anything else you'd like to add? (Prompt: Anything to add to the description of your year)	General catch all in case they have something they wish to expand on or add	

Appendix 2 – Plain Language Statement

Plain Language Statement

I. Introduction to the Research Study

The working title for this Research Study is 'How laptop access has impacted the student learning experience during emergency remote learning due to COVID-19'. It is being undertaken at the Centre for Education and Lifelong Learning at National College of Ireland by Leah Dunne (x19100957@student.ncirl.ie).

II. Details of what involvement in the Research Study will require

Involvement in the Research Study will entail participation in an interview with the researcher. The interview will take approximately 20 minutes. It will take place either online using the web-conferencing platform Teams or via phone. An audio recording of the interview will be made using a digital dictaphone.

III. Potential risks to participants from involvement in the Research Study

It is not envisaged that participants will encounter any risk arising from involvement in the Research Study greater than that encountered in everyday life.

IV. Benefits (direct or indirect) to participants from involvement in the Research Study

Participants may benefit directly from the opportunity to reflect on their experiences of how technology has impacted their learning. The study aims to advance knowledge and understanding of remote learning and the digital divide from the Further Education student perspective. This knowledge can inform future policy and practice regarding student supports which may benefit future Further Education students. Key findings from this research project will be communicated to participants by email.

V. Advice as to arrangements to be made to protect confidentiality of data, including that confidentiality of information provided is subject to legal limitations

Every effort will be made to respect participants' anonymity. The data collected will be analysed by the researcher alone. Participants' actual names will not be included in audio recordings, file names or written transcripts. Participants will be identified by number (e.g. Participant, 1, 2, 3, etc.) on audio recordings and written transcripts. In the final dissertation write up the participants will be given pseudonyms. Any identifying information that may be disclosed during the audio recordings will be de-identified in the written transcription. The host institution will also not be named.

Interview recordings will be separately stored from transcripts using a secure password-protected folder on the researcher's personal password-protected laptop only accessible

by the researcher. All data is collected and stored in compliance with GDPR regulations. The Data Protection Officer at the National College of Ireland is Niamh Scannell and may be contacted at niamh.scannell@ncirl.ie.

VI. Advice as to whether or not data is to be destroyed after a minimum period

It is planned that the data collected from interviews will be stored for no more than five years and securely destroyed, in accordance with NCI policy.

VII. Statement that involvement in the Research Study is voluntary

Involvement in the Research Study is entirely voluntary, and participants may withdraw from it at any point without any penalty.

VIII. Any other relevant information

All participants in the study will be Further Education students who received laptops as part of the 'Digital Divide' government funding scheme**.**

If participants have concerns about this study and wish to contact an independent person,
please contact:
National College of Ireland Research Ethics Committee EthicsSubCommittee@ncirl.ie

Appendix 3 - Informed Consent Form

Participant Informed Consent Form

I.Research Study Title

The study in which you are being invited to participate has the working title: 'How laptop access has impacted the student learning experience during emergency remote learning due to COVID-19'. It is being undertaken at the Centre for Education and Lifelong Learning at National College of Ireland by Leah Dunne (x19100957@student.ncirl.ie).

II. Purpose of the research

The study aims to advance knowledge and understanding of the remote learning and the digital divide from the student perspective to inform future policy and practice regarding support provided to students. This research will examine how government funded laptops have impacted students' learning, from their perspective, during emergency remote learning due to COVID-19 to identify helpful components and perceived challenges.

III. Confirmation of particular requirements as highlighted in the Plain Language Statement

As stated in the Plain Language Statement, participants in this research will be asked to participate in an online or phone interview, which the researcher will request to record (audio only).

IV. Participant – please complete the following (Circle or highlight 'Yes' or 'No' for each question below)

- Are you over the age of 18? Yes/No
    - If No, has a Guardian/Parent signed the consent form? Yes/No
- Have you read the Plain Language Statement Yes/No
- Do you understand the information provided? Yes/No
- Have you had an opportunity to ask questions and discuss this study? Yes/No
- Have you received satisfactory answers to all your questions? Yes/No
- Do you agree to have your interview audiotaped? Yes/No
- Do you agree to having anonymised quotations from your interview being used in the study report? Yes/No

V. Voluntary Participation

Participants' involvement in this study is totally voluntary. As a participant you may withdraw from the Research Study at any point. There will be no penalty for withdrawing before all stages of the Research Study have been completed.

VI. Arrangements to protect confidentiality of data

Every effort will be made to respect participants' anonymity. The data collected will be analysed by the principal researcher alone. Participants' actual names will be protected and fake names will be used if direct references are required. Interview recordings and transcripts will be held by the researchers and stored in a password-protected folder on the researcher's personal laptop.

VII. Signature

I have read and understood the information in this form. My questions and concerns have been answered by the researchers, and I have a copy of this consent form. Therefore, I consent to take part in this research project.

Participants Signature:

Name in Block Capitals:

Date:

Participants Guardian/Parent Signature (if applicable):

Name in Block Capitals:

Date: