'THE DIGCOMP DEFICIT'

A Qualitative Exploration into the Experiences and Perceptions around Digital Competence in Ireland's 'second-chance' Adult & Community Education Sector

Mark Kelly

Master of Arts in Learning & Teaching

National College of Ireland

2019

Submission of Thesis and Dissertation

National College of Ireland

Research Students Declaration Form

(Thesis/Author Declaration Form)

Name: **Mark Kelly** _____

Student Number: **16145356** _____

Degree for which thesis is submitted: **Masters in Arts of Learning and Teaching**

Material submitted for award

(a) I declare that the work has been composed by myself.

(b) I declare that all verbatim extracts contained in the thesis have been distinguished by quotation marks and the sources of information specifically acknowledged.

(c) My thesis will be included in electronic format in the College Institutional Repository TRAP (thesis reports and projects)

(d) **Either** *I declare that no material contained in the thesis has been used in any other submission for an academic award.

Or *~~I declare that the following material contained in the thesis formed part of a submission for the award of~~

_____

(State the award and the awarding body and list the material below)

Signature of research student: Mark Kelly

Date: 11th September 2019

Abstract

Today digital competence is recognised as a crucial twenty-first-century skill. The European Framework for Digital Competence (called DigComp) provides a frame of reference to support the development of European citizens' digital competences. It can also support the development of learning and training materials related to digital competency.

Only 48% of Irish people possess basic digital skills, meaning there is an urgent need to address the digital skills divide across Irish society.

The overall aim of this study is to contribute to a better understanding of digital competence in Ireland's "second-chance" adult and community education sector.

This research draws from literature to define the term 'digital competence', discusses how DigComp, the European Digital Competence Framework has been developed and ratified as a tool to improve digital competence, explores the impacts of a lack of digital competence on a person's employability and life-chances in the twenty-first-century, and discusses digital competency vs digital literacy and media skills. It also situates the need for empirical data to better understand Irish community educators' current experiences and perceptions around digital competency.

A qualitative study within the interpretive paradigm, this research used semi-structured interviews, conducted one-to-one with six highly experienced community education practitioners from around Ireland. Convenience sampling was used to identify the community educators. The interviews were recorded, transcribed and coded by iteratively-reducing the data into coded themes against the research objectives.

The study finds there is a lack of awareness about DigComp across the participants and there are also wide variances regarding what it means to be digitally competent. The study also reveals many of the educators are not confident in their own digital competence and that the majority of the learners they work with are lacking digital competence.

The consequences of not tackling this digital deficit is a deepening of the Digital Divide in Ireland, increasing social exclusion over the medium and long term. We are missing an opportunity to tackle social ills such as isolation & loneliness and we are currently looking at a situation in which digital illiteracy will rise as a new super-literacy challenge.

Table of figures

Abbreviations

AONTAS	Ireland's National Adult Learning Organisation
CDP	Community Development Project
CEFA	Community Education Facilitators Association
CEFR	Common European Framework of Reference for Languages
DEG	Digital-era Governance
DESI	Digital Economy & Skills Index
DG	Directorate General
DigComp	European Digital Competence Framework
EQF	European Qualifications Framework
EU	European Union
FRC	Family Resource Centre
GDPR	General Data Protection Regulation
ICT	Information Computer Technology
IT	Information Technology
NCI	National College of Ireland
NFQ	National Framework of Qualifications
OECD	Organisation for Economic Cooperation & Development
SDG	Sustainable Development Goals
SOLAS	State Organisation with responsibility for funding, planning and co-ordinating Further Education and Training (FET) in Ireland
UK	United Kingdom

Chapter 1

Introduction

1.1 Background

This chapter sets out the background to the research. In doing so it describes the significance of digital competence in life and work today, why digital competence is a growing concern, explains Industry 4.0 and the changes to knowledge acquisition today. It also relates these phenomena to vulnerable groups and the Community Education sector in Ireland.

It also describes the aims and objectives of DigComp (European Framework for Digital Competence) and sets out the focus of this research, the overall aim and objectives of the research as well as the value of the research.

1.2 The significance of digital competence in life and work today

The digital age has heralded a shift in "human engagement and sociality" (Purdy, 2017, p. 318) with the result that human's need to constantly adapt to digital developments by learning to adopt new skills in order to allow them to participate successfully in today's society.

While many are aware of a digital divide in terms of infrastructural barriers in Ireland which are situated in problems with the plans to roll out Internet access as proposed in the National Broadband Plan (What is the National Broadband Plan, 2019), there remains a digital divide as relates to more than just access to internet infrastructure. Elderly people, low skilled workers and citizens, people with disabilities, literacy issues and people who don't possess competencies on the European Digital Competence Framework (DigComp) are also being impacted by a digital-competence divide. This is becoming "an increasingly prevalent challenge in a technologically-driven society" (Dixit, Datta, Bhatia, & Noll, 2019, p. 79). This is taking place to such an extent that digital illiteracy (or incompetence) and the digital divide it creates is now "a socioeconomic challenge for governments across the world" (Dixit, Datta, Bhatia, & Noll, 2019, p. 79).

No matter one's age or background, we live in an increasingly digitised age, where it is more and more necessary to possess the capability to engage with digital technology. Digital competency is increasingly important as digital innovations continue to mold and shape our daily lives in regard to work, learning, social interactions and, even active citizenship and social

inclusion. Bridging the digital divide in terms of digital competence is important, and I would argue, critical for a person being able to actively participate in society today whether for work, learning or life. The Internet has opened up fields of knowledge and learning opportunities in ways that were inconceivable to previous generations, but this is especially valid when it comes to improving access, inclusion, improving participation and increasing social mobility.

1.3 Digital Competence: a growing concern

Digital competency is of growing concern to the European Union and to Ireland today. According to the Digital Economy and Society Index 2018, Country Report Ireland, "only 48% of [Irish] individuals have at least basic digital skills" (DESI, 2018, p. 5). The figure is similar at European level as 43% of the EU population have insufficient levels of digital skills, 35% of the EU labour force have no basic digital skills, 13% have never been online and 29% are "not confident they can identify disinformation" (DESI, 2018, p. 7). These are often older citizens, less educated young people, lower-income families and migrants meaning "that digital exclusion risks are particularly high for people from these groups" (DESI, 2018, p. 6).

The 2018 report also found that Ireland's basic digital skills are at one of the lowest levels in the entire European Union. The country report also found that Ireland fell significantly behind other EU countries with regard to the number of people 'actively using the internet' in 2018.

We now live in a dynamic time when all the old rules around employment and training are changing in response to technological developments. How we learn, interact and engage with regards to work and learning environments are also changing. Back in January 2016, the World Economic Forum reported that we are "at the beginning of a Fourth Industrial Revolution" which will they warned was going to "lay the foundation for a revolution more comprehensive and all-encompassing than anything we have ever seen" (World Economic Forum, 2016, p. v). This new paradigm meant "major challenges requiring proactive adaptation by corporations, governments and individuals" to begin preparing and mitigating against "fundamental transformation" as whole industries adjust to this new world order.

Entire sectors are threatened by digital dislocation and most types of jobs will either change, be lost through innovation or "grow rapidly" in sectors where some see "limitless new opportunities". Either way, "existing jobs" would change and the skill sets required to do them

would be coming next (World Economic Forum, 2016, p. vi). This was such a paradigm shift that the World Economic Forum recommended creating a new measurement "skills stability" in order to quantify the level of "skills disruption" within an "occupation, a job family or an entire industry" (World Economic Forum, 2016, p. v). There have been media reports about significant sectoral recruitment challenges based on talent shortages in Ireland (Murray, 2018), and this was a pattern the WEF said was "already evident in the results and set to get worse over the next five years" or by 2021. And that was before Brexit.

The position of the World Economic Forum then was that in order to prevent "a worst-case scenario", government, business, and individuals would need to prepare and respond to this situation. A future in which technological change meets talent shortages may result in the potential for mass displacement and unemployment as well as an increase in inequality. This can only be addressed by the "reskilling and upskilling of today's workers" (World Economic Forum, 2016, p. v). The World Economic Forum takes the position that this scenario is not about preparing, at a generational level, by reforming the primary or secondary level education systems of nations, Instead it requires 're-training' existing workforces, people taking a 'proactive approach' to their lifelong learning and governments crafting a supportive environment, both "rapidly and creatively," to assist these organisational and individual efforts (World Economic Forum, 2016, p. v). "Weathering the current technological revolution by waiting for the next generation's workforce to become better prepared" is not an option. Displacement of the traditional industry jobs as a result of the '4th industrial revolution' is having a big impact on jobs now and for the future. This means we need new skills to keep connected and included.

Some notable statistics include "65% of children" entering the school system in 2016 will have jobs that don't currently exist (World Economic Forum, 2016). Considering that now many so-called millennials are working in jobs that didn't exist ten years ago, we live in a rapidly advancing employment environment. It is therefore imperative that employment skills service providers and community educators in that learning and teaching space possess the ability "to anticipate and prepare for future skills requirements, job content and the aggregate effect on employment" (World Economic Forum, 2016, p. v).

1.4 Industry 4.0

It's not just the World Economic Forum saying jobs we haven't even "conjured or imagined as yet" will come to the fore (Baldassari & Roux, 2017, p. 21). The advent of 'Drones', the taxi industry adopting technology and bringing in new roles such as 'rideshare managers', 'App developers', 'social media community organisers', 'sustainability commitment development (SDC) managers', along with increasing Automatization using Machine Learning, Artificial Intelligence and innovations such as Quantum Computing and Big Data are redefining the world of work. In particular, it's changing how we innovate in fields as diverse as "engineering, medical science, and geopolitics" (Inside Big Data, 2018); all of which are key developments emanating from living during 'Industry 4.0', which is "changing our living and employment paradigm forever" (Baldassari & Roux, 2017, p. 21) .

1.5 Changes to knowledge acquisition

Van Den Berg describes a "misalignment between what is taught (...) versus what is required" (Van Den Berg, 2018, p. 330) in a digital world. "Changes to knowledge acquisition" (Van Den Berg, 2018, p. 330) are required to address the misalignment and help prepare students for an "uncertain, complex and ambiguous world" and allow them the chance to practice their digital skills. For those currently distant or marginalised from digital developments and impacted by a digital divide, whether it is because of issues with infrastructure, skills or the attitude/perception of digital… people experiencing a 'digital deficit' may be classed as digitally disadvantaged. Without supports, they will find themselves more displaced and in a deficit from life, work and learning. The outcome will mean they are even more (digitally) disadvantaged and even more marginalised.

That said, the acquisition of digital competence also offers a fresh chance for those previously presumed to be too educationally marginalised or affected by limitations imposed by class-attributed access to learning and development. Returning to education or circumnavigating prohibitively expensive educational access which "inhibit opportunities and divide people" (Dixit, Datta, Bhatia, & Noll, 2019, p. 81) has never been more accessible thanks to the Internet.

1.6 Vulnerable Groups & Community Education in Ireland

In spite of technological advances, such as smartphones, and supposed universal access to the World Wide Web, there are many cohorts of individuals, groups, and classes of people who are not able to avail of these innovations and opportunities. It has been identified that there are serious challenges encountered by learners from vulnerable groups seeking to engage with Further Education and Training. According to SOLAS, the Irish government agency responsible for the sector, these groups include the under 25's, the long-term unemployed, people with disabilities, and members of migrant communities (SOLAS, 2017, p. 1). The Digital Divide is real in their cases and initiatives such as DigComp and the development of a digital competency framework are still potentially years away from them being able to benefit from (Dixit, Datta, Bhatia, & Noll, 2019, p. 79).

For many of these learners, their learning journey is long and for many the road to acquiring qualifications even at Levels Three and Four on the National / European Qualifications Framework (NFQ / EQF) 'is a distant possibility and one that requires significant investment in their literacy, numeracy, and digital skills' (Mallows, 2018, p. 13). This is happening at a time when "students need to develop a sense of self in order to be adaptable, which requires a curriculum that is future proof" (Van Den Berg, 2018, p. 330). They will need all the support and help they can get. Those lacking digital skills and most at risk of digital exclusion are also most likely to be participating in community education, such that the sector becomes a significant site for developing digital competence.

Community education "enables people to become more agentic in their own lives, and to bring about change in their worlds" (Connolly, 2003) and therefore it's perfectly placed to renew its role at the frontline of a rapidly changing social environment and support its learners experiencing the Digital Divide. Described as a 'second chance education' in Ireland (Fitzsimons, 2016, p. 78), community education has defined itself a role in addressing the educational needs of disadvantaged groups in Irish society (AONTAS, 2010, p. 45). Disadvantaged and marginalised learners include those without formal educational qualifications such as early school leavers and others considered vulnerable by the Irish education system. Fitzsimons argues that Ireland's school system disproportionately benefits some citizens over others, and this is compensated for by providing a second chance at

education, mainly accessed through community-based education providers and generally located within communities considered educationally disadvantaged.

The Community Education Facilitators Association (CEFA) describes these providers as offering a stepping stone to learner-centred, individualised supports for individuals, their families and, their communities at a local level as well as providing pathways back into education or the workforce. (CEFA, 2011, p. Foreword). That is, of course, dependent on whether there is within the sector the necessary digital competence to do so. If Ireland's community educators are to continue serving at the frontline of addressing the immediate educational needs of disadvantaged groups in Irish society (AONTAS, 2010, p. 45), then they themselves need to also be digitally confident and digitally competent. But this is set against a scenario in which community education in Ireland has suffered funding cuts of 33% since 2008 (Kyle, 2018, p. 50) causing significant decline in employment levels in the sector, along with the closure of State agencies and funding bodies such as the Combat Poverty Agency "since the imposition of harsh austerity measures" (Kyle, 2018, p. 50). The sector has never recovered its funding or State supports for its critical role as a vital strand of educational intervention in providing people with a second-chance to reengage with the education system.

1.7 DigComp, the European Framework for Digital Competence

Digital competency is a 21st Century skill which needs to be acquired by all citizens, to ensure their active inclusion in society and the economy (Ferrari, A, 2013, p. 2). Even half a decade ago, digital competence was identified as a key competence that is transversal and an enabler, allowing people to acquire other key competencies (e.g. language, mathematics, learning to learn, cultural awareness). It provides a general frame of reference to support the development of digital competences in Europe. Developed as a tool to improve European citizens' digital competencies, it can also support the development of learning and training materials. There is a separate DigCompEdu framework for educators and a DigCompOrg framework for educational organisations. According to the European Union's Joint Research Centre, DigComp also helps in the design of instruments for assessing the development of citizens' competence, support career guidance and assist citizens to understand how to seek a promotion at work and understand the skills they need to enter the workforce or when applying for jobs.

1.8 Research Focus

I hope this research will contribute to a better understanding of digital competence in Ireland's adult and community education sector and its capacity to support Ireland's most disadvantaged learners in a digitised-society.

DigComp has been devised to provide a framework for this digital competence spectrum. I have explored whether or not DigComp is currently being used in community education, whether it's of practical use to educators, and if it is providing the support envisaged by its developers.

In short, is DigComp doing what Europe intends to do and support the 48% of European citizens and 52% of Irish people who lack basic digital skills to improve their digital competencies?

1.9 Overall Research Aim

The study aims to contribute to a better understanding of digital competence in Ireland's adult and community education sector.

It looks at the experiences and perceptions of community educators about their own and their learner's current digital competence, profiles the learners with whom the community educator works, investigates the perceived value of the DigComp framework to the community educators as well as exploring the barriers facing educators and learners in achieving digital competence in their setting.

1.10 Research Objectives

The objectives of this research are to:

a) *Verify* whether DigComp is being used by the community educators
b) *Establish* if the educators consider themselves digitally competent
c) *Classify* the types of learners they work with
d) *Discover* if they consider their learners to be digitally competent
e) *Understand* any issues or barriers to digital competency for them, their learners or their setting
f) *Synthesize* these findings with the literature review to reach a conclusion and unearth any implications

1.11 Value of Research

This research is important for a number of reasons. By contributing to a better understanding about digital competence in Ireland's adult and community education sector, this research will provide empirical data to start a conversation about how effectively Europe is connecting DigComp with Ireland's community educators and skills trainers to address the gaps in their own and, their learners, digital competence.

As yet, I have found no other evidence of any research into Ireland's community educators' current digital competence, their knowledge about DigComp or the European Union's work in developing this digital competency framework.

This research shows that the majority of community educators interviewed in this study are not familiar with DigComp, and thereby are not sufficiently informed about what digital competencies and skills they should be focusing on in order to teach the digital proficiencies as set out by the DigComp Framework.

The study also reveals that some community educators are not confident that they have the required digital skills for life, work, and learning in our digitised society,

I contend that there was a gap in research and there exists an issue regarding the digital competency of our community education sector, which is critical to address the needs of Ireland's most marginalised citizens in the digital 21st century.

1.12 Summary

This chapter set out the background to the research and described the significance of digital competence in life and work today, why digital competence is a growing concern, explained what Industry 4.0 is and the changes to knowledge acquisition today.

It related this to vulnerable groups and the Community Education sector in Ireland as well as the aims and objectives of DigComp, the European Framework for Digital Competence.

It also set out the focus of the research, the overall aim, and objectives of the research as well as the value of the research.

1.12 The layout of the Dissertation

Chapter 2 - Literature Review

The chapter looks to set the context for the research by defining the term 'digital competence', discusses DigComp as a guideline and model for digital competency in society and education. It also explores some impacts of a lack of digital competence, discusses adult learning's broader social purpose, reviews descriptions around digital competency, highlights the need for the digital professional development of educators. It situates the need for empirical data on Ireland's community educator's experiences and perceptions around digital competency.

Chapter 3 - Research Question

This section sets out the core research questions.

Chapter 4 - Methods

This chapter recaps on the aim of the research, the objectives of what the research set out to explore, explains how participants were identified and selected, and why the research strategy was adopted. It will discuss the process of the data analysis as well as any limitations or problems encountered. It also includes how the issues of Validity and Reliability have been dealt with and address ethical considerations.

Chapter 5 - Results

This section presents the results of the qualitative data analysis.

Chapter 6 - Discussion

This chapter discusses the synthesis of the findings from the qualitative interviews against the Literature Review findings.

Chapter 7 - Future Perspectives

Concluding the study, this section comments on the research work and indicates directions that future investigations might take. Opportunities and limitations of generalizing the results are discussed.

References

Chapter 2

Literature Review

2. Literature Review

2.1 Overview of the Chapter

The chapter looks to set the context for the research by defining the term ‘digital competence’, discusses DigComp, Europe’s Digital Competence Framework and details its development as a guideline and model for digital competence and its role in education. It also explores some impacts of a lack of digital competence in the twenty-first-century, looks at adult learning’s broader social purpose, discusses descriptions around digital competency, the need for professional development for educators and situates the need for empirical data on Irish community educator’s current experiences and perceptions around digital competency.

These themes are significant to this study as it sets out what is meant by the term ‘digital competence’, highlights the impacts to people of not being digitally competent, puts the value of digital competency in context and, relates the literature to an Irish setting.

2.2 Introduction

As discussed in the Background, we are living in a digital age and as such, people need to have digital literacy skills. By defining the term ‘digital competence’, this review will situate the current thinking regarding what it means to be digitally competent.

In discussing DigComp, Europe’s Digital Competence Framework, the review will demonstrate how the framework has been developed and what were the intentions behind it. By exploring the impacts of a lack of digital skills in the twenty-first-century, this literature review is important to this research because it places the results in a wider context and shows the value of a strong connection between DigComp at a supranational level and at local levels in Ireland. DigComp has been designed as a “guideline and model for digital competency”, this review shows the value of aligning this with the professional development of an educator’s digital competence.

This literature review will also connect the importance of digital competence in life, learning, and work. It will point to the need for empirical data on Irish community educator's current experiences and perceptions around digital competency because they work with unemployed, people returning to education, people with literacy challenges and the migrant community; in short, key cohorts experiencing disadvantage who face an additional disadvantage deficit if they are not digitally competent.

2.3 Defining 'digital competence'

This literature review will not delve into the different ways in which digital competency or digital literacy has been researched, conceptualised and tested around the world. This work, one could suggest, has been done extensively by the European Union since the beginning of this decade. Instead, it will acknowledge and detail the efforts the European Union has gone to in order to design, develop, test and gain agreement across the member states to agree and adopt DigComp as the common framework to understand the knowledge, skills, and attitude required to be digitally competent today.

Over the past decade, we have seen academics, governments, educators and many others work towards defining what it is to be digitally competent and what skills are required for life in the 21st century. In 2010, the European Commission put forward 'Europe 2020' – a 10-year strategy for 'smart, sustainable, and inclusive growth' (Balula, 2016, p. 1) with a strong emphasis being placed on the promotion of "internet access and take-up by all European citizens, especially through actions in support of digital literacy and accessibility".

Digital competence is "a universal and basic need for all citizens for working, living and learning in the knowledge society" (Punie, Ferrari, & Brecko, 2014, p. 4). In Europe, it is considered by many member states as being "of great strategic significance in both public and private lives of citizens (EU Skills Panorama, 2012 (2014, p. 4)). It has been described as "an essential requirement for life" and "a survival skill" back in 2004 (Punie, Ferrari, & Brecko, 2014, p. 4).

Ferrari's work on DigComp for the European Commission set out to "create consensus at European level about the components of Digital Competence" (Ferrari, A, 2013, p. 6). The work has been widely documented and cited by academics and researchers working in the area

of digital skills in education over the past decade. DigComp was designed as an "umbrella or meta-framework" where all other digital skills frameworks, projects, curriculum or awards "can find themselves" (Punie, Ferrari, & Brecko, 2014, p. 7). In this regard, as a meta-framework, I feel DigComp has been successful.

2.4 Developing DigComp as a framework and model for digital competency

Development began at the start of 2011 and continued until December 2012. It included "conceptual mapping, case study analysis, online consultation, expert workshops and, stakeholder communications" (Punie, Ferrari, & Brecko, 2014, p. 7). It involved over 150 stakeholders across Europe who participated in the building or shaping of the framework contained in the "final output" (Punie, Ferrari, & Brecko, 2014, p. 7) over the past few years and included the field of education. Around 10 different conferences and seminars were presented with DigComp during its development, with feedback collected from attendees. The "building blocks" of the framework were built on academic literature, policy materials, existing frameworks and, the opinions of "experts in the field" (Punie, Ferrari, & Brecko, 2014, p. 7).

The structure of the DigComp framework was developed from an existing ICT competency framework, the 'eCompetence framework for ICT professionals' which "received extensive stakeholder support" (Punie, Ferrari, & Brecko, 2014, p. 7). This use of an existing structural framework assisted DigComp reviewers and stakeholders to "cross-check one against the other" (Punie, Ferrari, & Brecko, 2014, p. 7). A language framework was also exploited in the development of DigComp, the 'Common European Framework of Reference for Languages (CEFR)'. This can be seen in what was the original DigComp, which was based on three proficiency levels, Basic, Intermediate and Advanced. According to the Puni et al, CEFR's influence can also be seen in the language and terminology used in the proficiency levels in DigComp. The Common European Framework of Reference for Languages was designed to allow for a learner to self-assess their proficiency in a language. This self-assessment tool is supported by an "extensive toolkit that sets the standards for the learning outcomes of foreign languages" (Punie, Ferrari, & Brecko, 2014, p. 7).

The development of the DigComp framework was initiated on behalf of European DG Education and Culture, with the aim of contributing to "the better understanding and

development of digital competence in Europe" (Punie, Ferrari, & Brecko, 2014, p. 3). It had been accepted by Europe that digital competence was now one of the "eight key competences for lifelong learning and is essential for participation in our increasingly digitised society" (Punie, Ferrari, & Brecko, 2014, p. 3). In order to achieve this, it was deemed necessary to "understand and define" what it is to be digitally competent and what that set of knowledge, skills, and attitude consists of.

The European Framework for Digital Competence (DigComp) has also been described, by the authors, as a "scientifically sound framework" (Carretero, Vuorikari, & Punie, 2017, p. 1). Ferrari's work has been credited with developing a definition of digital competence as having the "knowledge, awareness and attitudes towards the values of ICT along with owning the ability to deal with the latest technologies and digital information where users are entitled to create, to manipulate, to design, and to self-actualize" (Ahmed & Al Khateeb, 2017, p. 38). In their 2017 study, Ahmed et al (2017) discuss how Ferrari's definition of digital competence is connected to "cognitive-thinking strategies" which utilise "digital information and achieving tasks in digital environments". They further postulate that digital competence also indicates the "meaningful participation in the emerging knowledge society of the twenty-first century" (Ahmed & Al Khateeb, 2017, p. 38).

As far back as the mid-'90s, innovations in Information & Computer Technology (ICT) were bringing improvements and enhancements to the business world and life in general. It was also an epoch which was to produce new challenges in "everyday life" that were not perhaps considered, and "education is one of the fields where this can be observed" (Silverstone & Haddon, 1996 cited by (Punie, Ferrari, & Brecko, 2014, p. 3).

2.5 Digital competency vs digital literacy vs media literacy

Defining digital competency is not simple. Ahmed *et al* say that "no common globally-agreed definition exists" for digital competence (Ahmed & Al Khateeb, 2017, p. 39). They define it as involving skills which "exceed searching for information online" and includes "more demanding services and advanced expertise such as problem-solving, sharing and collaborating with peers" (Ahmed & Al Khateeb, 2017, p. 40).

The UK has in 2019 announced its version of a digital competency framework, the 'National Standards for Essential Digital Skills' (Department for Education , 2019). The standards developed in the UK are mainly aimed for use by awarding organisations in developing "new essential digital skills qualifications" and are available for 'first teaching' from August 2020. The framework does not mention digital competence whatsoever. It does describe a frame comprising five skills areas (*using devices and handling information, creating and editing, communicating, transactions and being safe and responsible online*) which could be argued is similar to the DigComp framework's five areas of competency. These national standards also inform the "development of new subject content" for 'digital Functional Skills' qualifications, available for 'first teaching' from 2021 (Department for Education , 2019, p. 4).

The OECD situates digital literacy as the first in a set of 'General Learning Outcomes that Support Global Learning'. The definition of Digital literacy is described by the OECD as "knowledge of technology and its responsible use for creating content and communicating locally and globally" and sets out the basic components of digital literacy as being "information literacy and digital communication skills" (Tiven, 2018, p. 8).

Other European literature describes digital literacy is "a mixture of technical support alongside cognitive, emotional and social skills" (Aviram, 2006). Ahmed *et al* say that digital literacy also refers to how technologies "assist users and play a number of important roles in their daily life, including social interaction" (Ahmed & Al Khateeb, 2017, p. 40).

In the United States, the word competence is used. There digital literacy and media literacy are often being considered together as they share several common elements: "both digital literacy and media literacy involve competence in varied means of communication, and both digital literacy and media literacy involve the use of technology", whether that's 'high-tech', i.e. computers or 'low-tech', i.e. printed materials, in some form. (Dalton, 2017, p. 22). According to the American Library Association, digital literacy is "the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills" (Dalton, 2017, p. 22). And, according to the National Association for Media Literacy Education, media literacy is "the ability to encode and decode the symbols transmitted via media and the ability to synthesize, analyse and produce mediated messages" (Dalton, 2017).

Again, while these various descriptions share similarities with the DigComp framework there are differing viewpoints. Digital safety was not mentioned in the American definitions.

2.6 DigComp and education

DigComp also provides a general frame of reference to support the development of both educator and citizen-specific digital competencies across all member states in Europe. DigCompEdu is a variation of the framework and is directed towards supporting educators at all levels of education; from early childhood to higher and adult education, including general and vocational education and training, special needs education, and non-formal learning contexts. This framework aims to detail how digital technologies can be used to enhance and innovate education and training.

DigComp itself is "a tool to improve citizens' digital competence" (Carretero, Vuorikari, & Punie, 2017, p. 1) but it also supports the development of learning and training materials. It can also aid in the design of instruments for assessing people's digital competence, support career guidance and assist people looking to gain a promotion or to understand what skills they should when entering the workforce or applying for jobs.

In the 2017 version of DigComp (2.1), there are now eight proficiency levels for each competency (Carretero, Vuorikari, & Punie, 2017, p. 12). This version has expanded the original three proficiency levels to "a more fine-grained eight-level description" and provides examples to assist stakeholders with the implementation of DigComp. Learning outcomes have been defined using action verbs, following Bloom's taxonomy and the structure and vocabulary have "been inspired" by the European Qualification Framework (EQF).

(*See following tables 1.1 and 1.2 for further information*)

Fig 1.1.

DigComp 2.1 European Digital Competency Framework: Competencies.

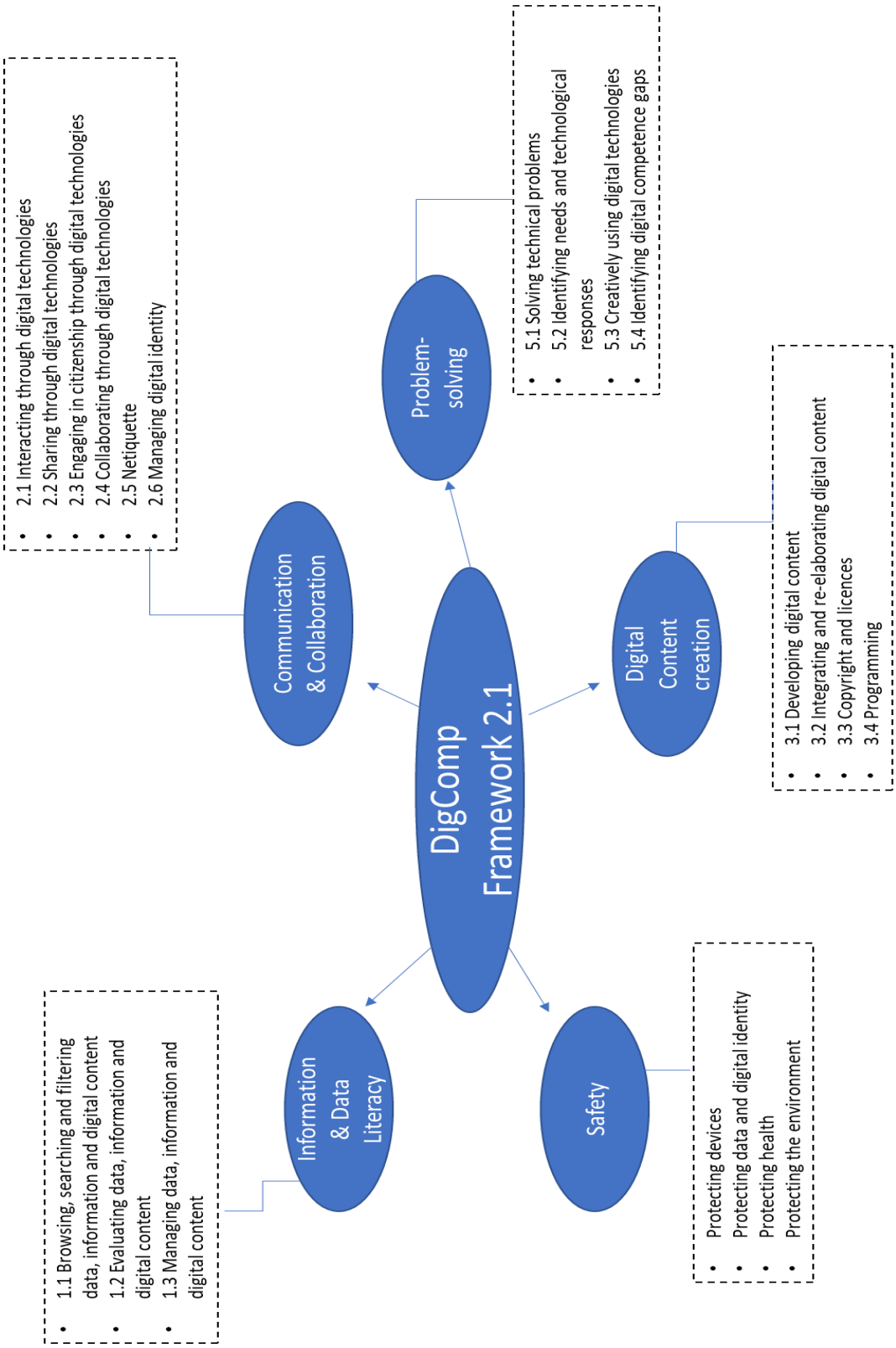


Fig 1.2. DigComp 2.1 European Digital Competency Framework:

Proficiency Levels and Cognitive Domains.

Levels in DigComp 1.0	**Levels in DigComp 2.1**	**Complexity of tasks**	**Autonomy**	**Cognitive domain**
Foundation	1	*Simple tasks*	With guidance	***Remembering***
	2	*Simple tasks*	Autonomy and with guidance where needed	***Remembering***
Intermediate	3	*Well-defined and routine tasks, and straightforward problems*	On my own	***Understanding***
	4	*Tasks, and well-defined and non-routine problems*	Independent and according to my needs	***Understanding***
Advanced	5	*Different tasks and problems*	Guiding others	***Applying***
	6	*Most appropriate tasks*	Able to adapt to others in a complex context	***Evaluating***
Highly specialised	7	*Resolve complex problems with limited solutions*	Integrate to contribute to the professional practice and to guide others	***Creating***
	8	*Resolve complex problems with many interacting factors*	Propose new ideas and processes to the field	***Creating***

2.7 Cohorts impacted by a lack of digital competency

Increasingly it is being understood that having a lack of digital skills can have a profound effect on a person's employability as well as on their general life-chances (Publications Office of the European Union, 2016, p. 3). The European Union has stated that those who are most at risk of having their life-chances impacted by a lack of digital skills are often "older citizens, less educated young people, lower-income families and migrants" (Ferrari, A, 2013). Many of these groups of people, if they are unemployed, looking to return to education or improve their skills will engage with Ireland's community education sector.

In 2010, the European Commission warned against the "inadequate digital literacy levels of both the younger and the older" (Punie, Ferrari, & Brecko, 2014, p. 4). Salajan describes a "clash of generations" (Salajan, 2009, p. 450) when it comes to bridging the Digital Divide. This is points to a potential inconsistency in the assumption that 'Digital Natives' are simply born more adept than 'Digital Immigrants' (Prensky, 2001, pp. 1-2) at acquiring and adopting digital competency. That's not to say the literature is incorrect - it was 2001 - but it may need a refinement of the label to address a possibly inaccurate perception. Salajan talks about how younger people (millennials) are generally perceived or viewed as "more progressive-minded and enthusiastic toward digital technologies (…) than their older peers" (Salajan, 2009, p. 450). The EU also encourages member states to look to providing interventions to address any so-called Digital Immigrants resigning themselves to being left behind and diminishing their ability to actively participate in the digitised society.

As discussed, digital technology is necessary to fully participate in society. Older adults in particular need access and training otherwise they will be "shut out from society, worsening an already worrisome trend of isolation and loneliness among the elderly" (Fields, 2019). An example of this, from the United States, is described as people managing the transition from "balancing a checkbook to dealing with online banking" (Geisinger, 2016, p. 246). One generation adopts it and the other struggles or resists entirely. We hear this anecdotally and in media reports in Ireland, where Irish banks are moving towards automation over human, face-to-face, services (White, 2018) and this is causing concern for elderly customers. Age Action reported that older people have contacted the advocacy organisation to complain of "feeling pressured" to do their banking online creating "barriers for many older people (…) to carry out their day-to-day business online (…), this can prevent them from accessing financial services

or lead to an older person handing control of their personal finances over to an IT literate friend or relative" (Age Action, 2018).

Jessica Fields, a researcher in the United States working directly with isolated older adults to provide low-cost internet, tablets, and digital training through the Tech Allies program, writing on the TechCrunch website for Older Americans Month, reported that in the United States:

> "one-third of adults ages 65 and older say they've never used the internet, (…) half don't have internet access at home. Of those who do use the internet, nearly half say they need someone else's help to set up or use a new digital device. Even in San Francisco – the home of technology giants like Twitter, Facebook, and Google – 40% of older adults do not have basic digital literacy skills, and of those, more than half do not use the internet at all". (Fields, 2019)

We also need to consider how parents are coping with keeping abreast of digital developments as (hopefully) gatekeepers of their children's ability to access to appropriate/inappropriate content for their age group as well as protecting them from cyberbullying (Education & Training Boards, 2013).

Other issues identified in the literature points to people who live on "the margins of digital access" (Smythe, 2018, p. 198)). Huang *et al* say we need to do more to understand the situation facing digital parenting in disadvantaged families "which haven't gained enough scholarly attention" (Huang, Chen, & Straubhaar, 2018, p. 1187). Huang found that of particular risk of being distant from digital competence proficiency in a "fluid time of digital developments and innovation" are single mothers. "Single motherhood and home Internet access significantly accounted for low–socioeconomic status parents' digital parenting self-efficacy" (Huang, Chen, & Straubhaar, 2018, p. 1186). Antipoverty groups argue that the promise of "greater and easier access" to government services "do not accrue to those living on the margins of digital society" (Smythe, 2018, p. 198): i.e. those who most rely on government services. This cohort has been found to have "tenuous access to digital technologies and to the skills and time required to navigate complex systems" (Smythe, 2018, p. 198). There is a social risk as a result of the "automation of inequality" (Smythe, 2018, p. 198) where the benefits offered by access to digital technologies for improving lives are in danger of being eradicated by barriers to digital competency.

2.8 Adult learning's broader social purpose

Educational equality is now a key requirement for achieving Lifelong Learning (Ahmed & Al Khateeb, 2017, p. 39) which is a key Sustainable Development Goal (SDG) objective of the United Nations. Published in 2015, the SDG's aims to address global challenges such as poverty, inequality, climate, environmental degradation, prosperity, and peace and justice with a target of achieving each Goal by 2030 (United Nations, 2015).

Recently AONTAS, Ireland's adult learning organisation, reported that "adult learning has a broader social purpose and thus has much to contribute to the implementation of the SDGs", (AONTAS, 2018, p. 2) describing four pillars which the sector can help to address, in particular, the United Nations' fourth SDG goal (4.7):

"Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all"

It could be said that this global ambition builds on the European Union's supranational objective of achieving digital competence as an element of lifelong learning for its citizens using DigComp:

"SDG 4.7 requires that by 2030, all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development" (AONTAS, 2018, p. 2).

AONTAS says "learning to be, learning to do, learning to know and learning to live together" is a fundamental part of adult learning in Ireland (AONTAS, 2018).

Lifelong learning and digital competency are key strategic issues of our times to address inequality, changing employment patterns and life chances of marginalised people. It has been identified at global-policy level, that vocational training has an effect on the productivity of a country, and that it improves competitiveness and increases participation.

We are likely to see a deepening in the digitisation of society because of the increasing globalisation of our world. But those who are currently distant from the developments in the 'knowledge society' now – I would argue - are at risk of adding to their current state of

disadvantage and marginalisation by not having the necessary digital skills for the 21st century. They will, in essence, add a digital deficit to their current state of disadvantage.

2.9 Professional development for educators

The twenty-first century has created a lot of new employment and citizenship prospects as well as new pedagogies in education which demand being addressed (Niu & Niemi, 2019). Teaching is going through "the greatest pedagogical shift in a thousand years" (Clarke, 2012) and the role and practice of a teacher have changed (Niu & Niemi, 2019). Clarke's view is that the past decade has been revolutionary, and teaching has evolved more in ten years than in a millennium (Clarke, 2012). He argues that it's empirically true that technology is shaping education, saying "It does. It's only a matter of degree. You can ignore it. But resistance is futile". In the context of this global technological change, traditional teaching activities are coming under intense pressure from the rapid development of digital technologies (Tusiime, Johannesen, & Gudmundsdottir, 2019, p. 133).

Studies have reported that "the effective use of digital technology in teaching requires teachers to develop knowledge of technology" (including digital hardware and software), a new form of "pedagogy", curriculum development and content curation and how to digitally connect these (Tusiime, Johannesen, & Gudmundsdottir, 2019, p. 133). van Dijk (2005) describes digital competence as requiring "a set of operational, informational and strategic skills" (Tusiime, Johannesen, & Gudmundsdottir, 2019, p. 134) and how mastering the skills and professional knowledge-related to digital competence and ICT literacy has "become necessary for teachers" (Ahmed & Al Khateeb, 2017, p. 46).

Nowadays because of technology, rather than the traditional 'didactic' delivery, or even as a consequence of Freire's resistance to the 'banking' approach to education where learning is delivered by an expert to learners (Freire, 1970, p. 2), the twenty-first-century teacher is now required to be "interactive with the students" (Niu & Niemi, 2019) which has resulted in a complete "contextual change of learning" (Niu & Niemi, 2019). Teachers have moved from being the so-called 'sage-on-the-stage' to a so-called 'meddlers-in-the-middle' (Niu & Niemi, 2019) with teachers reframed in this new learning context as "knowledge brokers".

At the end of 2009, we arrived at "the onset of the economic crisis" (Punie, Ferrari, & Brecko, 2014, p. 262). Many people across Europe found themselves having to re-engage with formal learning in order to return to work and navigate this economic period. This was also experienced by those leaving secondary and third-level education at the time. This changed the dynamic at the time and caused people to either stay in education longer delaying gaining work experience or leaving education to get work experience. Across Europe, young people at the time had to "choose between studying to develop themselves professionally or gaining work experience directly" (Martínez-Cerdá & Torrent-Sellens, 2017, p. 262). Martínez-Cerdá and Torrent-Sellenargues have recently argued for a need to research the factors that "influence the employability of citizens throughout different periods and economic cycles, and their links with new possibilities of e-learning in the context of lifelong learning" (Martínez-Cerdá & Torrent-Sellens, 2017, p. 262).

At the same time, the economic crisis impacted both the nature of employability of people and the provision of what, back in the 19th-century, was termed "really useful knowledge" (Brown, 2010, p. 504). Brown also says the economic downturn has changed adult education's purposes and the knowledge that it needs to impart. I would agree with this in that what is nowadays considered to be "really useful knowledge" in the 21st-century must include the ability to be digitally competent.

We are now emerging from the economic crisis into a time of change where "new technologies and their associated processes are changing current and future jobs" (Martínez-Cerdá & Torrent-Sellens, 2017, p. 263). This, they argue, is having a direct impact on requirements around adult education provision due to the "necessary stimulation that less educated people need to be enrolled in training". Vocational training is important and Martínez-Cerdá et al have also linked the impact that "vocational training has on the productivity of countries" with the opportunities presented by technology-enhanced learning in the adult education sector citing the "importance of e-learning for vocational education and training" (Martínez-Cerdá & Torrent-Sellens, 2017, p. 262).

2.10 The need for Lifelong Learning

Research by Martínez-Cerdá et al suggests that people who have done so-called "lifelong e-learning activities" are more likely "to have an employment contract, especially if they do not have a university degree" (Martínez-Cerdá & Torrent-Sellens, 2017, p. 280). This has implications for vocational and adult education and shows the value of community education being technology-enhanced to support the unemployed. While the need for lifelong learning "has been promoted and gradually developed over the past decade" (Martínez-Cerdá & Torrent-Sellens, 2017, p. 263); lifelong learning is now being accepted in policy circles as being crucial to negotiating life and work for populations in this century.

Ireland's lifelong learning statistics are not impressive. In 2018 it stood at just 7%. The EU has set a target of "15% of adults in Lifelong Learning by 2020", but Ireland has less ambitious goals with a target of 15% by 2025 (AONTAS, 2018). But it is a vital approach, "as a way for reflexive activation in transition between work and education" which helps people at the very least "to gain respect, dignity, and self-esteem" (Martínez-Cerdá & Torrent-Sellens, 2017, p. 263).

Our education systems are working hard to catch-up but suffer from "outdated curricula from the last century" (Geisinger, 2016, p. 246), time is of the essence. This is especially necessary when you consider that digital sociologists are now making the case that "a password-driven control society is well underway" (Smythe, 2018, p. 201).

Margetts and Dunleavy (Margetts H, 2013) talk about how we are living in a time of *digital-era governance* (DEG), where the delivery of government services has been transformed by the Internet and automated technologies so that now "zero-touch" technologies are replacing human intermediaries in key government services (Smythe, 2018, p. 198). Considering that the cohort of people most at risk of digital disadvantage are those most likely to need to engage with government services this is a burgeoning issue. This digital-era governance will require "new literacies, new pedagogies, and new implications for adult education research and practice" (Smythe, 2018, p. 197). These people are also groups which Ireland's community education sector would traditionally engage with as 'hard-to-reach' and disengaged from other parts of the educational system.

SOLAS, Ireland's Further Education and Training Authority published a strategy in 2016 setting out its vision and plan to support educators in getting digital ready (SOLAS & ETBI, 2016, p. 15). This strategy is described as building on 'Doing More with Digital' (Department of Communications, Energy and Natural Resources, 2013), Ireland's first digital strategy. As well as stressing the value of "building digital capacity" in Ireland, the strategy presents education and eLearning as one of four priority areas for development. It also explains that: digital strategies for schools and for higher education have been published "over the past two years" (Department of Communications, Energy and Natural Resources, 2013, p. 15). This strategy does not mention or reference community education providers. In an increasingly technology-enhanced learning and teaching environment which needs to adapt and operate within a digital-era of governance / funding and at a time of new literacies and pedagogies, we are in a time when the use of technology "depends on teachers' technical competence and confidence" (Ahmed & Al Khateeb, 2017, p. 46). I have argued here that those at greatest risk of Digital Divide are those hardest-to-reach or most distant or marginalised and this cohort has been and are historically best served by adult and community education providers in local communities across Ireland.

As AONTAS has said, adult education can help address the United Nation's Sustainable Development Goal (4.7) to address inequality in education. We have also looked at how there are certain groups, many who fall outside of mainstream education, such as the elderly, single parents and people who live on 'the margins of digital access' who are most at risk of being left behind. If we are to effectively drive these new literacies along with new pedagogies to deliver them in adult learning practice, it is teachers who are "the agents of change and play a key role in changing learners' educational practices" (Smythe, 2018, p. 197).

2.11 Justifying the need for empirical data on the digital competence of community educators

The literature review has made a case for how community education has historically been ideally placed to reach the hard-to-reach and marginalised in society and provide localised education solutions to address local needs. This research has found that are a wide range of factors which impact on the capacity to enhance our digital competency including:

- age
- educational attainment
- socio-economic status
- access to a computer
- ability to access ICT infrastructure generally
- regular, local availability of Internet (Broadband or Wi-Fi)
- the ability to afford technology and digital devices
- possessing technical skills
- a motivation to learn

These are all learning barriers and factors which conspire against someone when trying to attain digital competency. It is imperative that our adult and community education sector is up to the task of addressing the challenges and barriers facing 52% of Ireland's adult population in attaining basic digital competencies.

To my knowledge, there has been no research into digital competence in Ireland's community education sector. Therefore, I suggest there exists a solid justification to investigate and explore this subject in the context of the aim of the research; to contribute to a greater understanding of digital competence in community education in Ireland.

2.12 Summary

This literature review has defined digital competency and highlighted how DigComp, and how the framework for developing and understanding digital competence in Europe has been developed and ratified as a tool to improve digital competence.

It has also shown how a lack of digital skills can have a profound effect on a person's employability and life-chances in general. It explained adult learning's broader social purpose and the relationship between marginalised, disadvantaged people, who need a second chance at learning.

It also showed how mastering the skills and professional knowledge-related to digital competence and ICT literacy has become necessary for teachers and reminded about the need for lifelong learning.

It also justified the need for this research.

Chapter 3

Research Question

3.1 Research Question

The research question evolved during the course of the development of the research project. It was distilled into a direct and distinct question to shape and guide all of the research aims and objectives, the direction of the literature review and the approach to sampling, data collection, and data analysis using thematic and axial coding.

It ensured that 'Digital Competence' was the key focus, to begin with. This was vital as the European DigComp Framework is a meta-framework that has been developed to shape what it means to be digitally competent now and in the future. It has been adopted as a pan-European framework to address a lack of digital skills in Europe. It was important to use '*Digital Competence*' in the framing of the question in order to anchor and base the qualitative inquiry around the use of this phrase rather than 'digital skills', 'digital literacy' or 'media literacy'. Also, as it is embedded in the actual name of the framework as it comprises a derivative of digital competence in its title (i.e. relates to web resources, online networks, communities of practice, etc), it was important to understand if it's recognisable by the educators participating in the study.

Research question:

What are community educators' perceptions and experiences of digital competence?

Subsidiary questions included:

- What does 'digital competence' mean to community educators?
- Do they perceive themselves and their learners to be digitally competent?
- What are the barriers and enablers they perceive to achieving digital competence?
- How valuable is the DigComp framework for them?

Chapter 4

Methods

Chapter 4 Research Methods

4.1 Overview of the Chapter

The research question for this study was: '***What are community educators' perceptions and experiences of digital competence?***'. This chapter outlines the methodological underpinnings to the research, justifies the approach taken to answer that question. It discusses the framework for data analysis, shows how the findings were analysed, quality considerations and the inherent limitations of the research. It also addresses the ethical considerations for this study.

4.2 Research aims and objectives

The aim of this study is to contribute to a better understanding of digital competence in Ireland's adult and community education sector. It looks at the experiences and perceptions of community educators about their own and their learner's current digital competence, profiles the learners with whom the community educator works, investigates the perceived value of the DigComp framework to the community educators as well as explore the educator's understanding of the Digital Divide and what, if any, any impact this is having in their educational setting.

4.3 Research Methodology

When it comes to understanding how digital competence is understood in the community education sector, I believe it's a real-world phenomenon. Therefore, I took a Post-Positivist methodological approach with a Subjectivist viewpoint that fits with this research aim because it assumes reality as being "individually constructed; [as] there are as many realities as individuals" (Scotland, 2012, p. 12). It also takes the view that the social world can only be understood "from the standpoint of individuals who are participating in it". The Interpretive epistemological paradigm is directed at "understanding phenomenon from an individual's

perspective" (Scotland, 2012, p. 11) and a lack of digital competence in a digitised society could be considered a real-world phenomenon (Ferrari, A, 2013). Interpretivist research also supports a study "that uncovers inside perspectives or real meanings of social phenomena from its study participants" and this has been described as producing "good social knowledge" (Wahyuni, 2012, p. 71). As a result, I feel the Interpretivist paradigm is the appropriate frame from which to satisfy the aim of the research and contribute to a better understanding of digital competence in Ireland's adult and community education sector.

4.4 Research strategy

The objectives of this research were to:

a) *Verify* whether DigComp is being used by the community educators
b) *Classify* the types of learners they work with
c) *Establish* if the educators consider themselves digitally competent
d) *Discover* if they consider their learners to be digitally competent
e) *Understand* any issues or barriers to digital competency for them, their learners or their setting
f) *Synthesis* of these findings with the literature review to reach a conclusion and unearth any implications

The research strategy for this qualitative research was to produce a synthesized 'literature and data analysis' to provide a better understanding of digital competence in Ireland's adult and community education sector.

The strategic tactics used to yield the insights and the individual perspectives of the community educators to satisfy the research objectives were:

- *Shape* the nature of the research question to support the research aim and objectives
- *Engage* with the literature to provide a robust basis for comparing and contrasting against the data
- *Conduct* six semi-structured interviews by phone in order to target different types of practitioners in different settings and locations around Ireland

- Use a thematic analysis of the participant's contributions from the transcribed interview data to *produce rich data* for interpretation and
- *Syntheses* the literature with the participant's perspectives to reach conclusions and implications

4.5 Sampling approach

The sampling approach taken was a 'purposive sampling' technique - also called 'judgment sampling', or 'nonprobability sampling' (Etikan, Musa, & Alkassim, 2016, p. 1). As a researcher, I decided what needs to be known to satisfy the research aims and objectives and set out to find suitable people by virtue of knowledge or experience who are willing to provide the information. This purposive sampling approach is used in qualitative research to source and "select the information-rich cases for the most proper utilisation of available resources" as this involves "identification and selection of individuals or groups of individuals that are proficient and well-informed with a phenomenon of interest". (Etikan, Musa, & Alkassim, 2016, p. 2). The sample size of my qualitative research project was six participants, drawn from across the community education sector in Ireland.

The suitability of the participants as well as considering their level of experience was also based on achieving a regional spread across Ireland i.e. not just Dublin. I wanted to ensure a mix of community education providers from different parts of the country and in different community-based settings such as Family Resource Centres (FRCs), Community Development Projects (CDPs), Further Education (ETB) colleges, and unemployment/disability services. A shortlist was drawn from a range of experienced (senior-level) adult and community education-based representatives. The age range of the participants was from 30 plus years.

The process of connecting and inviting the participants to take part started with an email that was issued to each of them from my National College of Ireland student email account (to ensure alignment with GDPR, Data Protection, etc). The email, from an unknown (to them) email address, introduced myself and set the context by explaining the reason I am contacting them and briefly reminding them of how we have professionally interacted and engaged with each other in the community education sector in the recent past (2018/2019).

The email invited them to participate in this research on a confidential basis and provided a Plain Language Statement and Letter of Consent. Samples of these documents, setting out the details described, are included in Appendices (A & B).

4.6 Data collection

It is my view that the best way to understand 'the inside perspectives' and collect 'good social knowledge' (Wahyuni, 2012) is by communicating directly with involved the practitioners at "the organisational coal-face in order to better understand the current state of real-world practices" (Wahyuni, 2012, p. 73).

Options for qualitative research data collection in this study included "open-ended interviews, focus groups, open-ended questionnaires, open-ended observations, think-aloud protocol, and role-playing" (Scotland, 2012, p. 11). Interviews generally, and semi-structured interviews, in particular, are commonly used in qualitative and interpretive research as Flick (2009) says "interviewees' viewpoints are better expressed in an openly designed interview than in a standardized interview or questionnaire" (Al Balushi, 2018, p. 726).

I choose to do one-to-one interviews as I felt they were more personal and, would allow for greater expression of personal viewpoints and insights during the interview. I felt that a focus group would dampen the exchange as participants would feel the need to self-censor their views as they work together in a relatively small sector. I would expect less constrained responses and a more relaxed interaction in a one-to-one interview set-up.

Kvale and Brinkman (2009) explain the purpose of semi-structured interviews is to "understand themes of the lived daily world from the subjects' own perspectives" (Al Balushi, 2018, p. 726), adding that the interviewer interprets the meaning of what themes can be derived from their collective contributions. This is precisely what I set out to do. "Online interviewing is increasingly used nowadays as a data collection method by social scientists" (Harrell & Bradley, 2009, p. 6). I agree with Harrell & Bradley that interviews are essentially one-on-one discussions between an interviewer and an individual, meant to "gather information on a specific set of topics". They also offer that interviews can be "conducted in person or over the phone" and "differ from surveys by the level of structure placed on the interaction" (Harrell & Bradley, 2009, p. 6). In order to achieve a regional spread of participants, I felt that telephone

interviews were the best approach. Mann & Stewart (2000) describe “a distinct advantage” with online/telephone interviewing being the “wide geographical access”; people from “all over the globe” can be researched - if they have the necessary devices to enable access (Al Balushi, 2018, p. 726). All of the interviewees were happy to participate over a phone line. I would suggest it made the process more accessible, less intrusive and therefore more confidential and private.

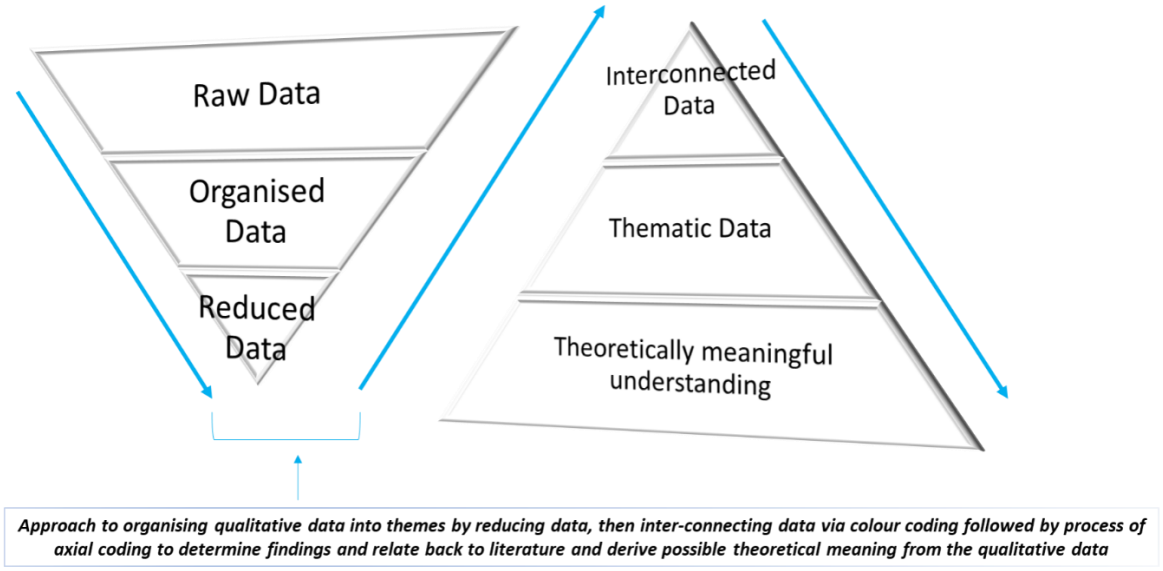
The interview session was conducted over the phone at a time of their choosing in June 2019 and they could decide to do it in a location of their choice to allow for maximum confidentiality and privacy. They were informed that the interview would take approximately 30 minutes and was “an informal, semi-structured interview but they should treat it as a chat”. All participants were advised the interviews were being recorded using audio equipment and all consented. This was the chosen data collection approach taken to undertake the research aim and objective of this study.

The data collection process did not encounter any difficulties.

4.7 Approach to Data analysis

Thematic analysis is the process of identifying patterns or themes within qualitative data (Braun & Clarke, 2006). This framework for data analysis requires mining the data corpus or raw data (from the interview transcripts) and extracting it into categories to support the aims and objectives of the research (O'Leary, 2017, p. 329). Then by mining the data for patterns and aligning all interconnected patterns of data into thematic sub-sections. This allows the researcher to analyse the data inductively and aids in reaching a ‘meaningful understanding’.

Fig. 1.3 Process of inductive qualitative data analysis



Graphic based on (O'Leary, 2017, p. 331).

Qualitative data analysis "demands cycles of iterative analysis through a process of 'reducing' and 'ongoing rich engagement'" (O'Leary, 2017, p. 331) with the data. The data needs to be iteratively mined from the interview transcripts (raw data) and organised into data streams which are then reduced. The initial research question, aims, and objectives are used continuously as a lens through which ongoing the analysis is then reduced, deduced and findings and conclusions are arrived at (O'Leary, 2017, p. 329).

Therefore, the process of reflective qualitative data analysis required following this process:

a) Organise the raw data by transcription
b) Review the interview transcriptions against the audio recordings to confirm and ensure accuracy of detail
c) Evaluate the data to prepare to code the data
d) Determine thematic headings as part of a coding process
e) Separate the data into the coded sections
f) Review and reflect on the data derived from the interviews
g) Ensure confidentiality by screening and scrubbing any and all identifying factors making sure they are removed, and all data/materials are securely stored on an encrypted server (NCI)

h) Reflect on findings and begin to interpret meanings
i) Synthesize research findings against literature and theory
j) Draw conclusions and propose future prospective

This process of "mining data" and its resulting analysis can be achieved by "overlapping" data in an inductive analysis (O'Leary, 2017, p. 325). This process allows the researcher to shift from possessing "raw data" to deriving a "meaningful understanding" (O'Leary, 2017, p. 329) of the newly acquired, insight-rich qualitative data but this also demands a "tangled and creative process of uncovering and discovering themes".

In order to avoid a 'tangled creative process', I used a process based on Bree & Gallagher's 'Thematic Analysis using Microsoft Excel' (Bree & Gallagher, 2016, p. 2812). The interviews were transcribed, and the method used to conduct the analysis was 'Thematic Analysis using Microsoft Excel' to code and interpret data. An inductive approach was then used to move towards consolidating the data iteratively to make meaning from the information. The process required extensive time spent becoming "very familiar with the data" (Bree & Gallagher, 2016, p. 2812). The data was edited to correct transcription inaccuracies and to get close to the data. This required reviewing three hours of audio across the six transcriptions to correct for inaccuracies and address the colloquial misinterpretation. There were over 30,000 words generated from the six interviews. Following this review and edit, the de-identified data was then further reduced by consolidating key elements, thoughts, and quotes before removing all superfluous material generated by the general interview dialogue. This reduction then allowed for an initial interpretation of the data to be broadly themed around four perspectives which align with the Literature Review.

These are:

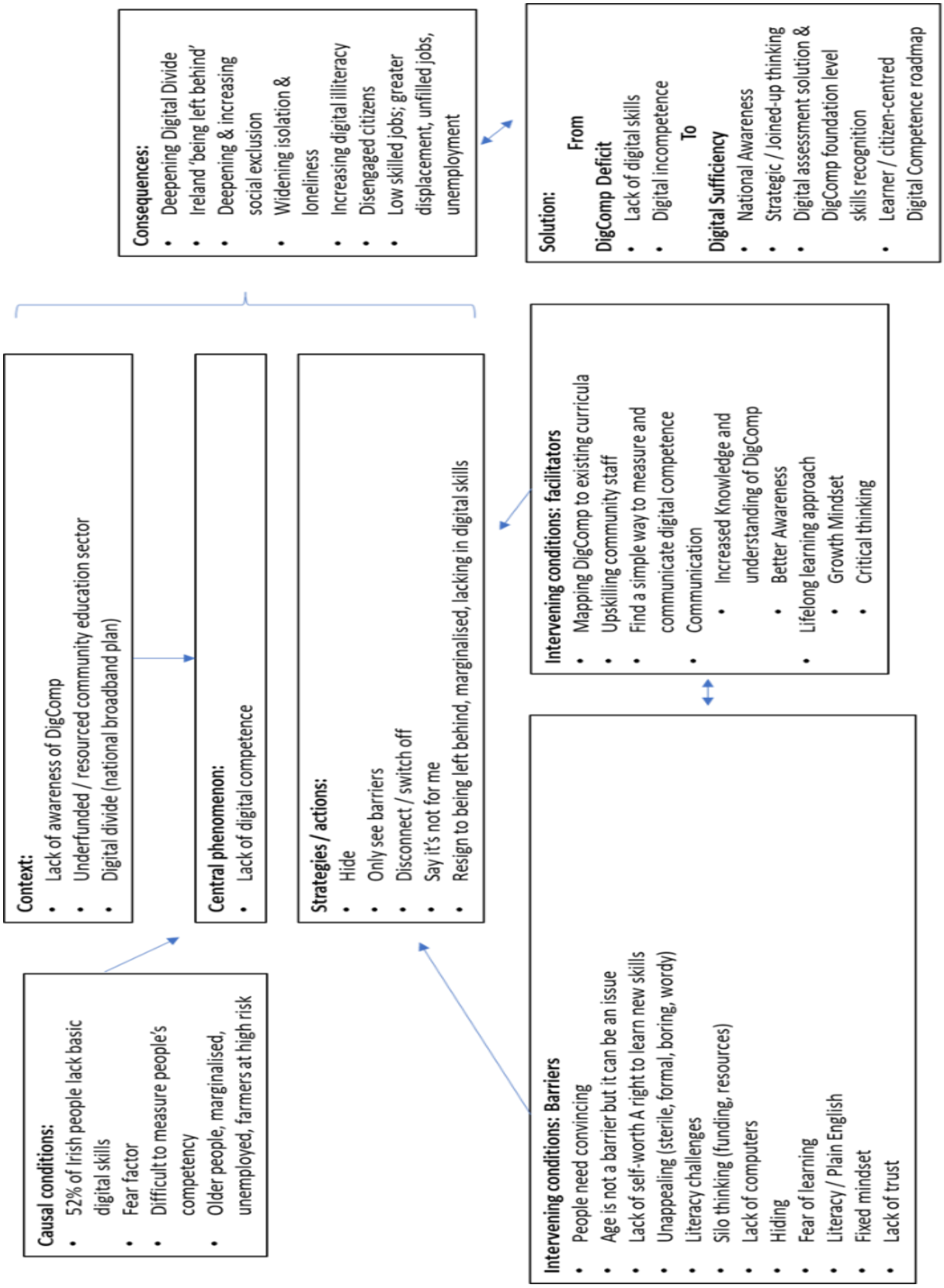
- *Conceptualising* Digital Competence;
- *Appraising* the Value of Digital Competence,
- *Responding* to DigComp, The European Framework for Digital Competence and
- *Barriers and Enablers* to Achieving Digital Competency

Then, using Microsoft Excel as the tool to deepen the subtraction of data by a coding process, Excel worksheets were developed using tables designed by Bree et al (Bree & Gallagher, 2016) who formulated a template for distilling and allocating key data points by colour coding each

data point. Each data point was reviewed and grouped using any commonality between them in order to create a set of sub-themes. The extrapolation of the color-coded data into sub-themes allowed for further consolidation of the data into set themes per the four perspectives. Each data point was then reduced or consolidated to reduce the data and ensure no duplication of data within the overarching themes. The concentration of the data at this point further assisted in the "reporting and subsequent final analysis" (Bree & Gallagher, 2016, p. 2814) and development of the results. These themes and perspectives were then reflected on and further synthesized and distilled into around five core elements per the theme (some created more, but these were further distilled in the reporting process).

This results in the data being coded and themed without fitting into a "pre-determined coding frame" (Bree & Gallagher, 2016, p. 2814). Therefore, the data can be reported as being collected and analysed during the inductive evaluation process rather than using any "analytic preconceptions" (Bree & Gallagher, 2016, p. 2814). There was a mix of both semantic and latent theming of the data. Initially semantic, or surface meaning, (Bree & Gallagher, 2016) of the data was used to interpret the themes. Once patterns had been identified, and following reflection an additional layer of interpretation of the data and findings, I used an axial coding process to further distill the data and explore the relationship between the categories.

Fig. 1.4 Axial coding of the data to explore the relationship between the data



4.8 Quality Considerations

Credibility: The credibility (internal validity) of this research can be accounted for by the researcher if the study produces "rich evidence and offers credible and justifiable accounts" (Scotland, 2012, p. 12). I suggest that this is achieved by the fact that the semi-structured interviews were conducted in a confidential and anonymous way, and the audio recordings fully transcribed by an objective and independent third-party service provider. The resulting, justifiable, data was then reduced and used as the basis for analysis and thematic interpretation. Credibility is also achieved as a result of the detail provided in the Results chapter which provides rich evidence and thick descriptions. The credibility of the study is further supported by having used 'different data sources'. The data sources were six different practitioners from differing educational settings, in different parts of the country, with different types of learners and have differing viewpoints on what constitutes digital competence to them and the cohort of learners in their setting.

Transferability: The transferability of the study (external validity) has been achieved if the research can be "made use of by someone in another situation" (Scotland, 2012, p. 12). I would offer that the credibility factor itself would allow for practitioners in other settings in Ireland to use the findings to support their knowledge and comprehension of digital competence and what it might mean to their learners. I also believe that the study would also be able to be transferred to "a different study within or across jurisdiction" (Wahyuni, 2012, p. 77). It could, for example, be used at a national or European level to show some of the barriers to digital competence in Ireland. It would also be of great value if this took place.

Dependability: I also suggest a similar project using the same methods but conducted in different community education settings means the study could be replicated. Reliability satisfies the Dependability imperative, and according to Scotland this is achieved if the "research process and findings can be replicated" (Scotland, 2012, p. 12). Here I suggest that supplying the research question, the description of the research methods, the data collection details, the step-by-step description of the Thematic data analysis, the areas for questions used in conducting the interviews as well as the example of the coding would allow this research to be replicated elsewhere. That is not to say that the results would be the same.

4.9 Limitations and potential problems

This study is based within a Post-Positivist, Interpretivist research paradigm, and this views the participants as being multifaceted: “their social systems are complex, their morals and values and where they come from are complex” (O'Leary, 2017, p. 7). The challenge for a researcher, therefore, is to work towards doing the research whilst remaining conscious of this complexity. In qualitative research, it must be acknowledged that participants “have limited control and are vulnerable to researchers imposing their own subjective interpretations upon them”. Subjectivism sees reality as differing from person to person, with the result that knowledge has the “trait of being culturally derived and historically situated” (Scotland, 2012, p. 12). Therefore, the research participants may not reach the same interpretations as I have from their contributions (Scotland, 2012).

Non-purposive sampling has been used so this approach cannot be deemed as representative of the population (Etikan, Musa, & Alkassim, 2016).

It is also acknowledged that because this data involves subjective individual constructions, the conclusions may not be judged useful to policymakers because the results are “highly contextualized qualitative data, and interpretations” (Al Balushi, 2018, p. 726). Analyses are interpretations (Scotland, 2012, p. 12) and my aim was to produce a meaningful understanding which contributes to a better understanding of digital competence in Ireland’s adult and community education sector.

It is also acknowledged that telephone interviews can be challenging for researchers because visual and non-verbal cues (facial expressions, gestures, body language) which can help to contextualize the interview in a face-to-face scenario are lost (Al Balushi, 2018, p. 726). I do not feel that this impacted the Results or Conclusions as I got very close to both the audio recordings and the data corpus and took notes during the interview sessions which I didn’t deem useful to the analysis process.

4.10 Ethical Considerations

This research adheres to the Universal Guiding Ethical Principles in Social Research (Hickey, 2018) and has at all times respected the Autonomy, Free and informed consent (Information, Voluntariness, and Comprehension) of the participants. All were invited remotely and given the opportunity to decline to participate without any further discussion or contact in relation to it. Veracity, Privacy and Confidentiality, Harms and Benefits were all described in detail in the Plain Language Statement and Informed Consent form.

As described in these documents, no harm or risk was foreseen but at all times, the researcher took all possible steps to Minimising Harm (Non-maleficence) & Maximising Benefit (Beneficence) to safeguard and protect the participants from risks.

It was required to follow the institutional ethics procedures to gain approval from the Research Ethics Committee at the National College of Ireland. The institution's Research Ethics approval was necessary before any data could be gathered. At all times the researcher needed to ensure the "integrity in the production of knowledge and to ensure that the mental, emotional and physical welfare of participants was protected" (O'Leary, 2017, p. 123). A Research Ethics Form was completed and submitted for approval. Ethics approval was granted.

Emails were issued to each participant from my NCI student account (to ensure alignment with GDPR, Data Protection, etc) introducing myself, explaining the reason I was getting in touch and reminding them of how we have engaged with each other in the recent past.

Qualitative data collected through interviews and focus group discussion constitute Personal Data under data protection legislation. All correspondence and consent forms were emailed to the NCI email address and stored securely on the NCI student One Drive which is password protected. These will be deleted in line with NCI data protection retention and protection protocols. Hard copy materials will be shredded and destroyed immediately once the dissertation is submitted in hard copy format. No hard copy information is identifiable or traceable and all audio files were immediately saved from the audio recording device onto my NCI One Drive, which required a password. The audio was transcribed using a reputable, professional online transcription service called Rev.com. No identifiable data (names, nicknames, organisational details, addresses, etc) were used throughout the recording as each participant was given a code i.e. Interviewee A, etc. All data analysis, therefore, was also

unidentifiable or traceable during the coding process. I secured verbal consent to use audio recording and only non-identifiable data (false name etc) is included in the recording. The use of audio recording and consent was detailed and recorded in the 'Plain Language Statement', 'invitation to participate' email and 'formal consent form'.

4.11 Summary

This chapter outlined the methodological underpinnings to the research, explained the approach taken to answer the research question, described the framework for data analysis, detailed how the findings were analysed as well as explaining the actions taken to ensuring quality was achieved and any limitations of the research. It also addressed the ethical considerations for this study.

Chapter 5

Results

Results

5.1 Results Introduction

The research methods in this qualitative research used semi-structured interviews with six community education practitioners to gain an understanding of their experience and perspectives on digital competence in their setting. Thematic analysis was used to identify patterns or themes by mining the data and aligning all interconnected data to create themes for inductive analysis using axial coding.

This chapter will indicate the type of community education specialisms the research participants work in, it summarises the learning cohort the participants are working with as well as describing the qualitative interview findings under four thematic areas (i) how they conceptualise being digitally competent, (ii) the value they place on it, (iii) how they responded to DigComp and (iv) the barriers and enablers they report to achieving digital competence.

The Research Participants

The participants in the research are community educators working in a variety of community-based organisations in locations around Ireland. They cover a variety of specialties in community education provision which include Lifelong Education Coordinators, Community Employment (Education and Training) Coordinators, Further Education & Training Coordinators and Disability & Employment Job Coaches.

The learning cohorts they work with

The type of learners the participants are working with includes a range of learners, the majority of whom are disadvantaged. They are unemployed or job seekers starting out on that journey to work, marginalised people, educationally at a disadvantage, disadvantaged women, early school leavers or adults returning to learning who have “fallen away from education”, people with literacy difficulties and/or confidence issues, migrants and foreign nationals, people with

illness, injury or disability or are coming back to work after a long period of time away due to illness, they are 'low-level' learners with literacy issues and all are between 18-60 years old.

The interpretation of this data has been broadly separated around four perspectives;

- *Conceptualising* Digital Competence;
- *Appraising* the Value of Digital Competence,
- *Responding* to DigComp, The European Framework for Digital Competence and
- *Barriers and Enablers* to Achieving Digital Competency

5.2 Results: Conceptualising Digital Competence

As has been described in the literature, digital competence has been broadly defined as "the confident, critical and creative use of ICT to achieve goals related to work, employability, learning, leisure, inclusion and/or participation in society" (Ferrari, A, 2013, p. 2). The EU has adopted five digital 'competence areas' to make up the DigComp European digital competency framework. These include a person's ability to *communicate or collaborate* using digital tools, being able to *create or manipulate* digital materials, *problem-solve* digitally, to be *safe* and secure online as well as possess *information and data literacy*.

In this study, digital competency was generally conceptualised in a limited way by most of the participants. In the main, the participant's conceptualised digital competence as being able to either access, engage or perform "every-day" digital tasks. These tasks included using a computer, an app on a smartphone, being able to navigate around apps and platforms to conduct "personal business as well as other business". Digital competence was also associated with being able to use ticket machines and travel cards. When they were conceptualising what it means to be digitally competent, no one mentioned the creation, manipulation and design aspects of digital competency. Only one participant provided a broader conceptualisation which included the *safety* element.

Mindset, or having 'the right attitude', towards technology also emerged as a theme. One participant felt it was about people being "happy" and not having a "fear factor" in relation to technology. While one participant expressed absolute confidence in their own digital competence, on the other side of the scale another said simply: "I'm not digitally competent". Another felt it was not possible to define digital competency as "technology is moving too

fast". While another had the view that digital competency is "difficult to measure" and therefore couldn't describe it. Another took a more fluid view in that they manage to "get by" and learn what they need as they go along. Additionally, one participant, who has engaged in a blended-learning course, had never heard of the term 'digital competence' before.

5.3 Results: Appraising the Value of Digital Competence

Overall, this study has found that the community educators interviewed all pronounced the majority of their learners to be 'not digitally competent'. According to one, learners are "reflective of the general landscape, in that they are not digitally competent". Or not as digitally competent "as would be desirable".

One felt their learners "don't want to know" and that there's 'a glaze' that comes over them when the benefits or need for digital competence nowadays is discussed or introduced to learners. A learner's digital competence was also described as a "surprise" in that while they may espouse a capability to use smartphones or social media, "people can fool you".

It was acknowledged that people generally don't have digital competence and the result is they are being excluded from accessing democratic entitlements, citizenship information, and social services. It was also felt there is a disconnect between the perspectives of government (nationally and locally) regarding its citizen's digital competency and the reality of the situation for many marginalised or socially-excluded people.

The disconnect in digital competency skills is the 'new normal' in terms of the literacy issues educators are now dealing with, according to one participant. They are currently supporting people who are "in deficit" digitally which is a (digital) literacy issue. This deficit was regarded to be on a par with the literacy "difficulties of 15 years ago" which still persists in sections of Ireland. People are "hiding" their lack of general reading, writing or numeracy skills and there is now a cohort who are also hiding because they lack the requisite digital competencies for a 21st century Ireland.

52% of Irish people in 2018 lacked basic digital skills (DESI, 2018, p. 7) and these educators acknowledged that "digital incompetence" is now a key challenge that must sit alongside general reading and writing literacy and numeracy interventions.

Generational factors do come into the equation regarding digital competency. But the reality is that this is not a result of an 'ageist' stereotype of the situation. The assumption that younger people are "automatically digitally competent" because they're young and "comfortable with technology", is according to one participant, often not the case. This stereotype could also be

related to the acknowledgment by one participant that people can "fool you" (see Results chapter).

Young people can and, in many cases, are able to use certain aspects of digital but generally it was felt by the participants that young people do lack digital competency. One participant described teaching young people "without formal schooling" who can use their "mobile and latest apps" but their contemporaries in the class who don't have digital skills were defined as in even "greater deficit".

Participants also talked about how valuable it would be to upskill the older generations in Ireland as our population now aging. "Seniors find digitalisation extraordinarily difficult," said one, and "older people need to be able to do their banking online and other things they used to be able to go into a shop to do" warned another. A participant, who previously worked in social care for the past decade, articulated how older people "can no longer pick up the phone and ring somebody" explaining how they need "to complete 47 tasks" before they can achieve their initial goal.

The misalignment between developing corporate, government and social services towards online provision is manifesting a deepening social exclusion of older people, but also in some cases younger people. Another participant suggested that a lot of work needed to be done "convincing people they have the right to learn new skills, no matter what age they at". In one educator's experience, "age is not an insurmountable barrier to gaining digital skills".

As well as the value of digital competence for our elderly population, the benefits of focusing on the farming community was also referred to by one participant who had a "worry" about this cohort. Without digital competency to manage their own business affairs online, according to one participant, farmers are handing over sensitive financial and business-related materials to other people because State agencies require online interactions, but the farmers feel that they are "not capable" of doing it.

It was felt that when appraising the value of digital competency, one needs to consider social aspects such as inclusion, active citizenship and, the capability of people to participate in twenty-first-century life, work, and learning. Some of the educators expressed being concerned and "worried" about their learners, and those lacking digital skills, having a capacity to actively participate in the digital-era society as fully active citizens.

Having a media literacy competence was also cited as being valuable. One participant pondered whether or not people are making "good decisions" regarding the information sources they are using. It was wondered whether this lack of media literacy was an outcome of having "low education standards" or a result of "uncritical" thinking. The view was the learners believe

everything that's "just flung out there" online. The participant described one learner "reposting content" [on social media] which created arguments in the local community. There's no "meaning-making" according to the participant.

Also, people having simple techniques to manage their personal digital safety - a key issue raised by several educators – would also be considered to be of value. "They can do everything on the phone, but they don't log off".

When added to the fact that other learners encounter difficulty "navigating the apps" and also with "the language" used on websites and apps as a literacy-related challenge, the value of a framework for achieving rounded digital competence becomes apparent.

Participants stated that they see the need for DigComp by saying it's "important" and a "useful" tool in particular "for use with young people" and "to see what skills they need". The rationale of having a framework was recognised by another saying unless there is some kind of digital skills framework "how do you know where you are at, where you are going, keeping you on the right path"?

The implications of having a digital competence framework were clear to one participant in particular. They advocated for its beneficial implications by saying their organisation will now review all of their curricula to "map onto" the DigComp framework so they to assess how they can "enhance the courses we are doing to make sure we're hitting the right competencies".

Other appraisals espousing a value in the DigComp framework were apropos the digital skills development of the organisation's staff.

The one participant who was familiar with DigComp before the interview explained how in 2017, the education team had used it to assess their own skills, saying "it served the purpose for which we wanted it at the time – to assess our skills and decide what training needs to put in place for staff". The rationale for this was staff in the organisation "could not be expected to deliver technology-based assessments" if they weren't digitally competent themselves. Another participant felt that DigComp will act as "a guide" for the people in their organisation because they lack the skill "to pass this on to service users" and it will help the organisation to "get ready".

There was no alignment between the educators in relation to their own views of their digital strengths and weaknesses. Communication and collaboration were mentioned by one as their strongest competency. Digital safety was mentioned by another as their "number two" strength, while another cited this as their weakest area of competence. While one felt digital content creation was their strength, another said it was their weakest competency area. Another participant felt that problem-solving was their weakest area while also saying that they

"wouldn't know where they would go" to upskill themselves. A further participant self-assessed saying "on a scale of one to 10, I'm probably a three myself".
Overall it was felt that the community education learners in general, and the educators themselves, may have certain competences on the DigComp framework areas of skills, but definitely not all five.

5.4 Results: Responding to DigComp, The European Framework for Digital Competence

Only one of the six participants were aware of and "familiar" with DigComp. Two had heard of DigComp recently "but wouldn't know anything about it" and the remaining three participants only learned of the European digital competency framework as a result of taking part in the research study. One participant was "ashamed to say, as an educator" that it hadn't come across their radar before. Another didn't realise "such a document existed or that there was a body dedicated to working on this". As a result of taking part in the research, one of the educators said that their comprehension around digital competency had developed and they learned that one can be "really good at one aspect of digital and very poor on another one" as well as observing that "I don't think anyone has it all".
Another participant felt that Ireland was lagging behind our European neighbours as DigComp isn't "as widely to the fore" in Ireland as it seems to be in other countries. Another now realised that DigComp is not just about Information Technology as originally assumed; "it's more than that. It's a framework and good resource". This was echoed by two other participants who said finding out about DigComp was "a big piece of learning" and that DigComp is "a fantastic framework to have". Prior to this, some participants had felt that digital competency was "difficult to assess" and "very hard to pinpoint".
While there was a very positive reaction to DigComp, there was also a range of criticisms about the framework from all of the participants. Reactions included criticisms about how DigComp is presented; its "not appealing", too "sterile" and "formal-looking", "it's a bit boring". The language used in DigComp was also criticised as being too formal and complex, not 'Plain English', "a bit wordy". This is an issue for some as "those words wouldn't suit the students we would have". Another observed that DigComp assumes a level of digital competency saying, "unless you're already fairly competent you're not going to use it". Simplification of the framework would go a long way to encouraging and supporting the adoption of the framework and its use in teaching practice. One participant made the argument that DigComp is "too complicated" saying "there are 48 pages [in DigComp 2.1] when I want to see two!

There are eight levels of competency? Are they all necessary?". One participant felt it would be necessary to justify to their learners the need for having skills across all five competency areas. Learners would need to comprehend why there are aspects of the framework that they should have, rather than simply need to have. A challenge was also identified for educators needing to show "here's what the tool can do for you" rather than "here's what the tool does". Another participant felt that even with the framework, the challenge remains about the identification and measurement of a person's digital competency. Their view was this is still not being solved by DigComp: "it's difficult to measure two people and decide what their competency is".

The framework alone is not solving the challenges faced by educators. Being able to identify and measure people on their digital competence would be a benefit. Having "an interactive, diagnostic tool to see where people are at" was felt could be "really useful". The participant likened it to how language skills are assessed against a European framework.

5.5 Results: Barriers and Enablers to Achieving Digital Competency

A fear factor was identified as a barrier to people improving their digital competency. One participant described how those most in need of upskilling won't engage because they're "afraid". The 'fear', according to one, is firstly around admitting they don't have the skills and secondly due to being "afraid to admit they need to learn". Fear of learning was mentioned by another participant who explained that some people overestimate the amount of learning required to acquire a new skill saying, "they think they need to do a Degree in order to learn something relatively small". Fear was also referenced in relation to older people who, according to one participant, "don't realise the power behind technology" because a lot of commentary around technology is "quite negative". Having a fear factor could be a sign of having a fixed mindset. Dweck's (Farnham Street Media, 2019) work has shown us "the power of our most basic beliefs", and whether this belief is 'conscious or subconscious', and that our capacity to be fixed or growth-oriented in our thinking strongly affects "what we want and whether we succeed in getting it." The participant's mindsets regarding digital competence could be described as traversing both a 'fixed mindset' or 'growth mindset'.

Other emotional barriers came into the equation as there is also a "mistrust" in online participation and engagement in disadvantaged communities in particular. One participant, in a Dublin inner-city community organisation, described learners and service users as having a 'mistrust' about using social media because it will create an unwanted exposure to other people

in the local community: “I’ll do that, and everyone will see it”. Also, some of the participants described learners feeling that they’re “not worthy” or too far behind everyone else to participate and a sense of embarrassment or “hiding” a lack of digital skills. Other participants described a “can’t-do” attitude and learners who can “only see barriers”. One educator talked about their own levels of digital confidence by saying, they know the computer “won’t self-combust” but other people can get very nervous.

Another major barrier to enabling digital competence in community education appears to be a silo mentality in the allocation of funding and provision of supports in some sections of local and national education provision. One participant described how an education board runs computer classes for “active retired” people in the mornings but unemployed learners, who are available to attend and need the skills to help their employment prospects, are not classified as "active retired" therefore they are not eligible to attend. The participant further explained a scenario where a computer course might be relevant to someone's employment training, so a case would be made for allowing them the time to attend. But if the course was to learn social media, they wouldn't be authorised the time as part of their training and development because "it's not work-related" and they'd have to “do it in their own time”.

A lack of funding, and how funding is allocated in some cases, is not supporting the development of digital competency. One participant in a rural area told about how a request for funding for computers in their employment training setting was declined as “it wouldn't be viable”. This was juxtaposed by the fact that a community centre in the town has “the only room wired for computers” but there are no computers. Another participant felt it would be more beneficial to allocate funding into advertising and promoting how digital skills will enhance people’s lives, otherwise, they felt, Ireland is going to “be [left] way behind”.

Another participant talked about a lack of joined-up thinking saying it's “ridiculous” that people are not being taught to type, describing it as a skill “as important as driving”. “People are using their thumb for texting and no matter how much they're online, they're still not able to touch type”.

Another expressed frustration that there is a digital divide in 2019. “It's not really good enough that we have this divide, it's creating exclusion. People are being prevented from accessing services they're entitled to because of a lack of skill”. Another talked about the impact technology can have on reducing loneliness and isolation and how digital competence is not being encouraged as a way of tackling this social ill.

In Ireland, a lot of broadcast airtime and print column inches have been allocated at the national level to discussions around the issues, benefits, and impacts of the rollout of the National

Broadband Plan. So, it comes as no surprise that this lack of broadband provision nationally is a barrier that is impacting people especially in rural areas and on the West coast. While unemployed, disadvantaged or marginalised learners often don't have computers or funds for Wi-Fi, it has been said that even if they do, there are areas that wouldn't have adequate Wi-Fi access. One participant described how their students who live outside of the town might have no access at all "if they live above or below a hill". Another spoke about how broadband issues are a challenge for people in the West of Ireland calling it a "socioeconomic situation" as people are leaving in order to find work simply because "they cannot get connected".

Educational inequality or disadvantage was also cited as a barrier by one participant who described being concerned about the impact of having digital disadvantage on top educational disadvantage, saying "you have a recipe for disaster". Another echoed this in relation to digital incompetence on top of literacy (reading, writing, and numeracy) difficulties describing the consequences as "awful".

While there was a range of themes identified as barriers to achieving digital competency, there were far fewer enablers suggested. Having a lifelong learning approach and growth mindset was seen as critical to enabling the development of digital competence. One participant said it required people "looking for new things and being open to ideas", another recommended that people must have the attitude to "keep practicing. You have to keep learning". While another said there is a need to promote lifelong learning to convince people that "they have the right to learn new skills, no matter what age they are at". The removal of barriers such as a lack of confidence, finance and access to a laptop was suggested by another saying, "it's amazing when you are working with people who have no barriers placed before them".

5.6 Summary

This chapter described the type of community education specialisms the research participants are working in, summarises the learning cohorts the participants are working with as well as describing the qualitative interview findings under four thematic areas (i) how they conceptualise being digitally competent, (ii) the value they place on it, (iii) how they responded to DigComp and (iv) the barriers and enablers they report to achieving digital competence.

Chapter 6

Discussion

Discussion

6.1 Overview of the Chapter

This chapter will synthesis the findings of the research with the literature in order to interpret and discuss the results of the research and how it has achieved the aims and objectives of the research.

6.2 Reflection

In order to discuss and interpret the findings of this research, I begin by reflecting on:

- my research aims and objectives
- and the question at the fore of this project.

The study aimed to contribute to a better understanding of digital competence in Ireland's adult and community education sector. The objectives of this research were to:

a) *Verify* whether DigComp is being used by the community educators
b) *Establish* if the educators consider themselves digitally competent
c) *Classify* the types of learners they work with
d) *Discover* if they consider their learners to be digitally competent
e) *Understand* any issues or barriers to digital competency for them, their learners or their setting
f) *Synthesize* these findings with the literature review to reach a conclusion and unearth any implications

The research question used to explore this and achieve the objectives was: ***What are community educators' perceptions and experiences of digital competence?*** The research has achieved the objective of verifying whether DigComp is being used by community educators.

6.3 Summary of findings and connections with literature

Only one in six of the participants had used DigComp and that individual learned of it back in 2017. It did, according to the interviewee, what the organisation wanted to do – assess the staff's skills and identify gaps for training and development but they have not used the DigComp framework since. Three of the participants had not heard of DigComp before participating and two had only heard of it in passing and didn't know much more than that. One educator said they felt "ashamed" that the framework had not impacted their consciousness but perhaps they can take solace from the fact that their contemporaries also didn't know "such a document existed, or that there was a body dedicated to working on this". This makes it evident there is a need for some form of a communication strategy to raise awareness and inform people about DigComp and the value and importance of digital competence. While positioned as a 'meta-framework', once the concept of DigComp was explained to the participants, it provoked a very positive reaction and immediate applications for their organisation and their professional practice including a review of current curricula for delivery and for their learners. It's worth remembering that, as described in the Literature Review, digital competence is considered by some as a '*survival skill*' and a 'universal and basic need for all citizens for working, living and learning in the knowledge society'.

Establishing if the educators consider themselves digitally competent was slightly less straightforward. There was a mix of responses regarding self-described levels of competence from "I would hope so" to "No, I'm not digitally competent". There was also a mix of responses to how one would conceptualise what digital competence is with only one providing an explanation comprising a broad range covering most of DigComp's five areas of competence, excluding Digital Safety. The lack of awareness about DigComp was illuminating. Only one understood what it was and how it could be used. As Clarke (2012) said teaching is going through the greatest pedagogic change in millennia. Ahmed et al (2017) described how it has become necessary for teachers to master the skills and professional knowledge related to digital competence and Niu et al (2019) reframed teachers as 'knowledge brokers' who now need to be interactive with students. Brown (2010) says that the economic crisis has changed both the nature of the employability sector as well as changing what was considered to be "really useful knowledge" in the past. As a result, the purpose of adult education and the knowledge it imparts has changed. AONTAS (2018) speaks of adult learning's "broader social purpose" and how it

can support the UN's Sustainable Development Goals, in particular, 'inclusive and equitable education' and 'lifelong learning opportunities for all'. Digital competence has a significant role to play in supporting that objective and achieving those SDG goals. The digital competence areas they felt either strongest or weakest in were unequal and in some cases the complete opposite. One felt digital content creation was their strongest and another felt it was their weakest. The DigComp framework would, I feel, help to achieve a standardisation of the skills and competences educators have.

The types of learners the community educators work with were successfully classified in this research. When collated together the cohorts provide an overview that builds a distinct picture. It's no surprise that it comprises a wide array of people but mainly they are marginalised, unemployed, returning to education, early school leavers, people with literacy issues and people who have disabilities, had or have an illness and people starting out on their employment journey.

As the Literature showed, this cohort of marginalised fall into the category of people whose lack of digital competence can have a "profound effect" on their employability or on their life chances in general (Ferrari, A, 2013). The upper age limit was identified as being 60 years old, so their learners do not include elderly or retired (active or otherwise). With increasing digitisation, this is a group which according to Age Action, the advocacy organisation points out, are having to hand over sensitive information to an 'IT-literate friend or relative' (Age Action, 2018). This is an important cohort to support digital competence as evidenced in the United States where one-third of adults over the age of 65 and older 'have never used the internet' and need someone's help to set up or use a new digital device (Fields, 2019). While single-parents weren't mentioned, they could fall under the disadvantaged women's description. This is another critical group, as highlighted in the Literature, who need digital competences as 'single motherhood' and home Internet access "significantly accounts for low-socioeconomic status parents' digital parenting self-efficacy" (Huang, Chen, & Straubhaar, 2018). These familial gatekeepers require a suitable level of digital skills to manage and protect their children from online threats and exposure to inappropriate content.

According to the data from the qualitative interviews, we discovered that the participants do not consider their learners to be digitally competent. Some described them as simply "not digitally competent" or "not as digitally competent as would be desirable". They described how their learners "don't want to know" and "a glaze" falling over their faces. Others said how

people can “fool you” regarding their digital competences, or lack thereof. While some assumed “automatic” digital competence in young people, the stereotype does not always stand up to scrutiny. Worry was expressed about farmers and seniors being vulnerable and having to hand over business and financial affairs to others as they weren’t capable of doing the online tasks required by Government and financial institutions. Uncritical media literacy and people making ‘good decisions’ around the information they see online were also expressed as a key concern. A disconnect between website and app developer’s user-experience and use of Plain English was also highlighted in particular for people with literacy issues.

It’s clear that there is a need to support these cohorts of people to enhance their digital competences. There is much work to be done about this, but it seems to me the task will be a lot more achievable with a meta-framework like DigComp as well as aligning our educational provision with the European standards.

The participants were very open in their contributions in relation to understanding barriers to achieving digital competency for them, their learners or their setting. Many of the insights, I feel, were very useful in gaining rich insights and thick descriptions of the reality about the intervening conditions creating barriers to supporting and achieving digital competence.

Some barriers or challenges are perhaps more achievable and less complicated than others. Addressing DigComp 2.1’s lack of appeal, for example, or how it’s presented, is achievable. As said, it was developed as a meta-framework from which to take the guidance and align along a framework to defining the digital skills, the description of the cognitive domain per level and what tasks can show competence and how they can be appraised – all of which is critical to moving forward to bridge the digital divide. It is, I think, possible to address barriers such as the framework being sterile, formal, boring, or wordy and the language used not being suitable for marginalised learners. It can be simplified, made more presentable, change the tone of voice, use Plain English, have a Universal Design and even made more engaging. But to me, it’s about understanding the framework first and then it’s up to teachers to have the confidence and comprehension to integrate the framework. We need to start with the educators and the community organisation’s first. Regarding literacy challenges / Plain English, there is more awareness and openness around these challenges in education than ever before. This I feel can also be mitigated by educators and community education service providers.

It’s reassuring to learn that it was felt that age is not a barrier but that said, it does appear to be a significant issue, both amongst young and more senior learners for different reasons. This

needs to be approached and handled both differently and equally, I would suggest. More challenging is the emotional barriers which were described as being a fear of learning, a lack of trust, that people need convincing, that people have a lack of self-worth, people are hiding because they are afraid to admit they need to learn or have literacy issues. I would suggest that for many of these emotional barriers, the community education sector is best placed to support and encourage learners with these barriers. The ethos of community education is to create a safe, open and encouraging space for the learner which places them and their needs at the centre of the process. Over the past forty years, community education has carved a niche out in second-chance education which is proficient in wrapping the supports around learners to address barriers such as these.

There is a growing understanding and comprehension around having a 'Fixed' mindset, thanks to the work of Carol Dweck (Claro, Paunesku, & Dweck, 2016). Perhaps we need not just to focus on digital competence but also the other necessary skills such as having a Growth Mindset, having Tenacity and Perseverance, Being Adaptable to Change, Problem-solving skills as well as Active Citizenship, etc and incorporate these into Lifelong Learning solutions along with Digital Competence.

Most difficult I think is addressing the barrier of 'Silo-thinking' (for funding, resources, etc.) at a national level. Shouldn't there be an alignment between the notion of providing employment or reskilling supports, education and skills training, lifelong learning, active retirement, personal development, digital competence, twenty-first-century upskilling and active citizenship for all people living in Ireland across their life stages? Surely this is imperative for any government with 52% of our population lacking basic digital skills. We need to seek solutions to the digital and lifelong learning challenges and barriers our population faces in 2020 and beyond.

We shouldn't have a lack of computers in places where there are a clear need, justifiable demands, and local social and economic imperatives. Our post-economic crash, 'second-chance', educators should all know about European-level interventions to address this skills gap like DigComp and DigCompEdu.

And I agree with the sentiments of one participant in this research, who said: "It's not really good enough that we have this [digital] divide, it's creating exclusion. People are being prevented from accessing services they're entitled to because of a lack of skill".

6.4 Summary

This chapter synthesized the results chapter with the literature in order to interpret and discuss the results of the research. It showed how qualitative data has achieved the aims and objectives of the research by detailing the findings against the individual research objectives.

Chapter 7

Future Perspectives

7.1 Future Perspectives

The aim of this study was to contribute to a better understanding of digital competence in Ireland's adult and community education sector.

It took a post-positivist, interpretive approach to understand the inside perspectives and collect meaningful social knowledge from community educators about their own and their learner's current digital competence.

To understand a situation at the organisational coal-face allows one to better understand the current state of real-world practices. I choose to do one-to-one interviews with the community educators as I felt they would be more personal and, would allow for greater expression of personal viewpoints and deliver richer insights during the interview.

In short, I wanted to understand the theme of digital competence from the lived daily world from the participants' own perspectives.

This research provided insights such as:

- Digital competency was generally conceptualised in a limited way by most of the participants.
- Mindset, or having the 'right attitude', towards technology was a key theme.
- The participants all pronounced their learners to be 'not digitally competent'.
- It was acknowledged that in their view, people were being excluded from accessing democratic entitlements, citizenship information, and social services.
- This disconnect in digital competency skills is now a "new normal" in terms of literacy issues.
- People are "hiding" that they lack the requisite digital competences.
- The assumption that younger people are automatically digitally competent is often not the case.
- There is an urgent social need to upskill our aging population digitally.
- Whilst corporate, State and social services are moving to online provision of regular services, this trend is manifesting in the social exclusion of vulnerable groups.
- People need to be convinced that they can - and have the right - to learn the skills they need in this digital-era landscape.

- The farming community is an example of a sector that requires immediate training, learning, and change of mindset supports.
- Critical media literacy is not only highly valuable but vital for social cohesion even at the most local of levels.
- People having simple techniques to manage their online safety is a key issue.
- There is a lack of awareness that there is a digital competence framework for citizens and educators.
- DigComp, as a meta-framework, is not accessible, not appealing, sterile, too formal, a bit boring, the language is inaccessible to the disadvantaged/marginalised. This can and should be addressed.
- Learners need to appreciate there is a range of areas to be considered fully competent across the DigComp spectrum, not just what they want to be able to do.
- There is a fear factor around technology and digital skills.
- Funding and provision of ICT supports are 'siloed' and not addressing the digital divide in useful or impactful ways for unemployed people in certain locations.
- Digital disadvantage combined with educational disadvantage is a "recipe for disaster" for some people.
- Having a 'lifelong learning' approach and 'growth mindset' was seen as a critical aspect in the uptake, adoption and further development of digital competence.
- DigComp, once understood, receives very positive reactions and immediate applications to practice.
- The educators had a mixed response to their own digital competence levels.
- There was a lack of awareness of DigComp across the participants.
- The lack of digital competence can have a profound effect on a person's employability and on their life chances in general.
- Age was not considered to be a barrier.
- Community education is well placed to support the most marginalised.

The research has verified that the DigComp framework was not being used by the majority of community educators interviewed. As it is the European standard, it would be useful if it could be supported across Ireland's community education sector.

It also established the majority of community educators do not consider themselves fully digitally competent and they have allowed us to understand the key barriers to digital competency for them, their learners or their setting.

- Upskilling of mid-career workers to have greater career resilience would be important.

This research has identified a DigComp deficit in Ireland which may be attributed to a lack of awareness about DigComp and the European Digital Competence Framework, which was developed in 2013. The study also shows there is a lack of both digital competence and digital confidence in our community education sector. This is thought-provoking especially when it comes to educators engaged with reskilling our most disadvantaged, marginalised and unemployed learners. Without this 'survival skill', the general life chances of this cohort are being placed at risk. It is imperative this situation is addressed adequately as a matter of urgency.

The consequences of not tackling this digital deficit is a deepening of the Digital Divide in Ireland and increasing social exclusion over the medium and long term.

- As a society, we are missing an opportunity to tackle social ills such as isolation & loneliness and are currently facing a situation in which digital illiteracy will rise as a new super-literacy challenge. Instead of supporting active digital citizenship we will see increasingly disengaged, and perhaps disenfranchised, citizens.
    - This is all in the face of low-skilled workers facing greater displacement or unemployment, in spite of a raft of unfilled digital jobs.

As described in the research limitations, non-purposive sampling has been used so this approach cannot be deemed as representative of the population. It is also acknowledged that because this data involves subjective individual constructions, the conclusions may not be judged useful to policymakers because the results are "highly contextualized qualitative data and interpretations".

Analyses are interpretations (Scotland, 2012, p. 12) and my aim was to produce a meaningful understanding which contributes to a better understanding of digital competence in Ireland's adult and community education sector.

It is also acknowledged that telephone interviews can be challenging for researchers because visual and non-verbal cues (facial expressions, gestures, body language) which can help to contextualize the interview in a face-to-face scenario are lost (Al Balushi, 2018, p. 726).

For any future studies, I would suggest that the role of community educators, local employment service coordinators and job coaches in addressing digital competence gaps in 'second chance' adults is important and worth further quantitative and qualitative investigation.

Consequently, I would recommend further follow-up study, using a mixed methodology approach involving both quantitative and qualitative methods.

A quantitative exploration could be to further understand the representative scale of the digital divide in Ireland's 'second chance' adult education system which would be highly beneficial as well as researchers taking a further, more expansive, qualitative investigation using face-to-face or focus groups to help understand the 'individually constructed' lived experience of those working with our most disadvantaged and marginalised learners in relation to digital competence.

This will help shape the narratives and stories of those working at the frontline of this strand of our educational provision. We also need to further understand the experiences of 'second chance' learners and adults in general who have a fear of or are marginalised from, being suitably digitally competent during this epoch of the 4th Industrial Revolution.

While there were indicators of individual and possible organisational behavioural change espoused by each individual practitioner - as a result of learning about DigComp as a framework to develop digital competence - it would be beneficial to explore if those changes are acted on and/or if there is a lasting impact on each practitioner's organisational culture moving forward.

The awareness that having a digital skills framework available for use in Irish community education being a new innovation would also be worth further investigation, especially as DigComp has been around since the middle of the decade.

On a final note, it is reassuring that every participant in this study came across as being sincerely open to the concept of using a digital skills framework to support their learning cohorts in developing their life skills and succeeding in a digitised society for work, life, and learning.

I wish them all well and thank them for their frankness and openness in relation to this topic.

After all, digital competence is not just a crucial twenty-first-century skill, it's a twenty-first-century survival skill.

‘A nation’s greatness is measured

by how it treats

its weakest members’

Mahatma Gandhi

Referencing

Referencing

Age Action. (2018). *Supporting Digital Literacy Among Older People Briefing Paper 5.* Dublin: Age Action. Retrieved June 15, 2019, from https://www.ageaction.ie/sites/default/files/attachments/briefing_paper_5_-_supporting_digital_literacy_among_older_people.pdf

Ahmed, A., & Al Khateeb, M. (2017). Measuring Digital Competence and ICT Literacy: An Exploratory Study of In-Service English Language Teachers in the Context of Saudi Arabia. *International Education Studies, 10*(12), 38-51. doi:doi:10.5539/ies.v10n12p38

Al Balushi, K. (2018, April). The Use of Online Semi-Structured Interviews in Interpretive Research. *International Journal of Science and Research*, 726-732. doi:10.21275/ART20181393

AONTAS. (2010). *Community Education: More Than Just A Course.* Dublin: AONTAS. Retrieved from https://www.aontas.com/assets/resources/AONTAS-Research/community_education_more_than_just_a_course.pdf

AONTAS. (2018). Lifelong Learning For All In Ireland. *Lifelong Learning for All 2018 Adult Learners' Festival week* (pp. 1-2). Dublin: AONTAS. Retrieved May 12, 2019, from https://www.aontas.com/assets/resources/Lifelong%20Learning/Life%20Long%20Learning%20for%20All%20-%20Intro.pdf

AONTAS. (2018, June 13th). Adult and Community Education as a tool to implementing the Sustainable Development Goals (SDGs). *Transformative Education for Global Citizenship – SDG 4.7 in Ireland in collaboration with AONTAS and the National Youth Council of Ireland* (pp. 1-6). Dublin: AONTAS. Retrieved July 11, 2019, from https://www.aontas.com/IDEA%20CONFERENCE%20NOR%20Website%20Final.pdf

Aviram, A. E.-A. (2006). Towards a Theory of Digital Literacy: Three Scenarios for the Next Steps. *European Journal of Open, Distance and E-Learning*, 1-11. Retrieved July 11, 2019, from http://www.eurodl.org/?article=223

Bach, A. W. (2018). Poverty, Literacy, and Social Transformation: An Interdisciplinary Exploration of the Digital Divide. *Journal of Media Literacy Education, 10*(1), 22 - 41.

Baldassari, P., & Roux, J. D. (2017). Industry 4.0: Preparing for the Future of Work. *People & Strategy, 40*(3), 20-23. Retrieved November 4, 2018, from https://www.bedicon.org/wp-content/uploads/2018/01/hr_topic4_source1.pdf

Balula, A. (2016, December 01 - 03). The use of DigComp in teaching and learning strategies – a roadmap towards inclusion. *Didactics and Technology in Education of Trainers (CIDTFF)*, 1-8. doi:http://dx.doi.org/10.1145/3019943.3019983

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. doi:http://dx.doi.org/10.1191/1478088706qp063oa

Bree , R., & Gallagher, G. (2016, 2811-2819). Using Microsoft Excel to code and thematically analyse qualitative data: a simple, cost-effective approach. *All Ireland Journal of Teaching and Learning in Higher Education (AISHE-J), 8*(2). Retrieved from http://ojs.aishe.org/index.php/aishe-j/article/view/[281]

Bronfenbrenner, U. (2005). Making human beings human: Bioecological perspectives on human development. (U. Bronfenbrenner, Ed.) *British Journal of Developmental Psychology* (23), 143-151. doi:10.1348/026151004X21134

Brown, T. (2010, November). Teaching adult education history in a time of uncertainty and hope. *Australian Journal of Adult Learning, 50*(3).

Carretero, S., Vuorikari, R., & Punie, Y. (2017). *DigComp 2.1.* Publications Office of the European Union. Luxembourg: Joint Research Centre (JRC) Science Hub. Retrieved September 9, 2018, from http://publications.jrc.ec.europa.eu/repository/bitstream/JRC106281/web-digcomp2.1pdf_(online).pdf

CEFA. (2011). *Community Education: Enhancing Learning, Fostering Empowerment and Contributing to Civic Society.* Dublin: Community Education Facilitators Association. Retrieved May 25, 2019, from http://www.cefa.ie/uploads/1/5/8/8/15883224/cefa_labour_market_activation_report_summary.pdf

Clarke, D. (2012, Apr 2). More pedagogic change in 10 years than last 1000 years. *Donald Clark at TEDxGlasgow*. Glasgow, Glasgow, Scotland: TedXGlasgow. Retrieved Nov 5, 2018, from https://youtu.be/dEJ_ATgrnnY

Claro, S., Paunesku, D., & Dweck, C. S. (2016, Aug). Mindset tempers effects of poverty on achievement. *Proceedings of the National Academy of Sciences, 113* (31), 8664-8668. doi:10.1073/pnas.1608207113

Connolly, B. (2003). Listening to the Voices. In AONTAS, *Journal of the Adult Learner* (pp. 9-19). Dublin: AONTAS. Retrieved from http://mural.maynoothuniversity.ie/1073/1/Pages_from_adult_learner_03.pdf

Dalton, E. (2017). Beyond Universal Design for Learning: Guiding Principles to Reduce Barriers to Digital & Media Literacy Competence. *Journal of Media Literacy Education, 9*(2), 17 – 29. doi:https://doi.org/10.23860/JMLE-2019-09-02-02

Department for Education . (2019). *National standards for essential digital skills.* London: Department for Education. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/796596/National_standards_for_essential_digital_skills.pdf

Department of Communications, Energy and Natural Resources. (2013). *Doing more with Digital National Digital Strategy for Ireland.* Department of Communications, Energy and Natural Resources. Dublin: Government of Ireland. Retrieved July 12, 2019, from https://www.dccae.gov.ie/en-ie/communications/publications/Documents/63/National%20Digital%20Strategy%20July%202013%20compressed.pdf

Department of Education & Skills. (2000). *Learning for Life: the White Paper on Adult Education.* Dublin: Government Stationary Office.

DESI. (2018). *Digital Economy & Society Index Country Report Ireland.* Eurostat. Brussels: Digital Economic & Society Index.

DESI. (2018). *Digital Economy and Society Index Report 2018 Human Capital.* Brussels: European Commission. Retrieved July 25, 2019, from http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=52247

Dixit, A., Datta, V., Bhatia, J., & Noll, S. (2019, January). Bridging the Digital Divide: Challenges in Opening the Digital World to the Elderly, Poor, and Digitally Illiterate. *IEEE Consumer Electronics Magazine, vol. 8*(no. 1), pp. 78-81. doi:10.1109/MCE.2018.2867985

Education & Training Boards. (2013, December). *Cyberbullying in Schools.* Retrieved July 12, 2019, from Teachers Union of Ireland: https://www.tui.ie/_fileupload/ETB%20Ireland%20Cyber%20bullying%20Guidelines.docx

Englander, M. (2019, November 15). General Knowledge Claims in Qualitative Research. *The Humanistic Psychologist, 47*(1), 1-14. doi:http://dx.doi.org/10.1037/hum0000107

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016, January). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, 1-4. doi:10.11648/j.ajtas.20160501.11

Farnham Street Media. (2019). *Carol Dweck: A Summary of The Two Mindsets And The Power of Believing That You Can Improve*. (S. Parrish, Editor, & Farnam Street Media Inc) Retrieved July 30, 2019, from Farnham Street: https://fs.blog/2015/03/carol-dweck-mindset/

Ferrari, A. (2013). *DIGCOMP: A Framework for Developing and Understanding Digital Competence in Europe.* Institute for Prospective Technological Studies , Publications Office of the European Union . Luxembourg: Joint Research Centre of the European Commission. doi:10.2788/52966

Fields, J. (2019, May 1). *We are leaving older adults out of the digital world*. Retrieved May 1, 2019, from TechCrunch: https://techcrunch.com/2019/05/05/we-are-leaving-older-adults-out-of-the-digital-world/

Fitzsimons, C. (2016). *Re-Kindling Community Education in Neoliberal times.* Maynooth University, Department of Adult and Community Education. Co. Kildare: PHD student.

Freire, P. (1970). *The "banking" concept of education.* (D. Bartholomae, & A. Petrosky, Eds.) Retrieved Jul 24, 2019, from www.everettsd.org: https://www.everettsd.org/cms/lib07/WA01920133/Centricity/Domain/947/BANKING%20CONCEPT%20OF%20ED.2.pdf

Geisinger, K. (2016). 21st Century Skills: What Are They and How Do We Assess Them? *Applied Measurement in Education, 29*(4), 245–249. Retrieved July 10, 2019, from http://dx.doi.org/10.1080/08957347.2016.1209207

Harrell, M. C., & Bradley, M. A. (2009). *Data Collection Methods Semi-Structured Interviews and Focus Groups.* RAND Corporation. Santa Monica: National Defense Research Institute. Retrieved from http://www.rand.org

Harvey, B. (2012). Downsizing the Community Sector: Changes in employment and services in voluntary and community sector Ireland 2008-2012. Dublin: Irish Congress of Trade Unions. Retrieved from https://www.ictu.ie/download/pdf/downsizingcommunitysector.pdf

Hickey, C. (2018). Research Ethics in Social Research. *Teaching Council Webinar.* Centre for Effective Services. Retrieved July 29, 2019, from https://www.teachingcouncil.ie/en/_fileupload/Research/Ethics-Webinar-Slides.pdf

Huang, G. L., Chen, X., & Straubhaar, J. W. (2018). Fall-Behind Parents? The Influential Factors on Digital Parenting Self-Efficacy in Disadvantaged Communities. *American Behavioral Scientist, 62*(9), 1186-1206. doi:10.1177/0002764218773820 journals.sagepub.com/home/abs

Inside Big Data. (2018, September 28). *How AI and Quantum Computers Could Bring Massive Change*. Retrieved from www.insidebigdata.com: https://insidebigdata.com/2018/09/28/ai-quantum-computers-bring-massive-change/

Kennedy, J. (2017, June 1). *Irish people cast shade on poor digital skills taught in schools*. Retrieved July 07, 2019, from Silicon Republic: https://www.siliconrepublic.com/careers/digital-skills-irish-schools

Kyle, S. (2018). Assessing the Health of Community Education: The Experience of Change from the Perspective of Community Education Practitioners. In *The Adult Learner, The Irish Journal of Adult and Community Education* (pp. 50-67). Dublin: AONTAS.

Maguire, M., & Delahunt, B. (2017). Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars. *All Ireland Journal of Teaching & Learning in Higher Education, 3*(Autumn), 3353-33514. Retrieved from http://ojs.aishe.org/index.php/aishe-j/article/view/335

Mallows, D. (2018). Adult learning, Upskilling Pathways, and the Adult Learner. In *The Irish Journal of Adult and Community Education, The Adult Learner 2018* (p. 13). Dublin: AONTAS.

Margetts H, D. P. (2013). The second wave of digital-era governance: a quasi-paradigm for government on the Web. *Philosophical Transactions of the Royal Society*, 1-17. doi:http://dx.doi.org/10.1098/rsta.2012.0382

Marr, B. (2018, August 13). *The 4th Industrial Revolution Is Here - Are You Ready?* Retrieved from www.forbes.com: https://www.forbes.com/sites/bernardmarr/2018/08/13/the-4th-industrial-revolution-is-here-are-you-ready/#47acf212628b

Martínez-Cerdá, J.-F., & Torrent-Sellens, J. (2017, September). Formal Lifelong E-Learning for Employability and Job Stability During Turbulent Times in Spain. *International Review of Research in Open and Distributed Learning, 18*(6), 262-288.

Murray, M. (2018, Dec 21). Huge skills shortages in a number of sectors. *The Irish Times*. Retrieved May 14, 2019, from https://www.irishtimes.com/special-reports/new-year-new-career/huge-skills-shortages-in-a-number-of-sectors-1.3727489

Niu, J., & Niemi, H. (2019). Teachers' Pedagogical Role as Mediators in Leading and Guiding Students' Learning in Digital Storytelling. *Media, Technology & Life-Long Learning, 15*(1), 1-24. Retrieved July 11, 2019, from http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,cookie,shib&db=ehh&AN=137260287&site=eds-live&scope=site&custid=ncirlib

OECD. (2001). *The Well-being of Nations: the Role of Human and Social Capital.* Paris: OECD.

O'Leary, Z. (2017). *The Essential Guide to Doing Your Research Project.* London: Sage Publications. Retrieved 2018, from https://study.sagepub.com/oleary3e

Prensky, M. (2001). Digital Natives, Digital Immigrants. *NCB University Press, 9*(5), 1-15. Retrieved July 30, 2019, from https://s3.amazonaws.com/academia.edu.documents/31169414/Digital_Natives_-_Digital_Immigrants.pdf?response-content-disposition=inline%3B%20filename%3DDigital_natives_digital_immigrants_part.pdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAIWOWYYG

Publications Office of the European Union. (2016, January 1). *The European Digital Competence Framework for Citizens.* doi:10.2767/00458

Punie, Y., Ferrari, A., & Brecko, B. (2014). DIGCOMP: a Framework for Developing and Understanding Digital Competence in Europe. *eLearning Papers*, 3-17. Retrieved 07 23, 2019, from www.openeducationeuropa.eu/en/elearning_papers

Purdy, S. (2017). Internet Use and Civic Engagement: A Structural Equation Approach. *Computers in Human Behaviour, 71*, 318-326.

Salajan, F. D. (2009). Is Generational Digital-Divide a Myth? A Comparison of Student and Faculty Attitudes Toward Digital Learning Technologies. *Journal of Basic and Applied Research International*, 450-458. Retrieved July 10, 2019, from https://www.researchgate.net/publication/293101081_Is_generational_digital-divide_a_myth_A_comparison_of_student_and_faculty_attitudes_toward_digital_learning_technologies

Scotland, J. (2012). Exploring the Philosophical Underpinnings of Research: Relating Ontology and Epistemology to the Methodology and Methods of the Scientific, Interpretive, and Critical Research Paradigms. *English Language Teaching*, 9-16. doi:10.5539/elt.v5n9p9

Smythe, S. (2018). Adult Learning in the Control Society: Digital Era Governance, Literacies of Control, and the Work of Adult Educators. *Adult Education Quarterly, 68*(3), 197 –214. doi:10.1177/0741713618766645

SOLAS & ETBI. (2016, March 25). *Strategy For Technology-Enhanced Learning in Further Education and Training 2016–2019.* Retrieved July 12, 2019, from www.solas.ie: www.solas.ie/SolasPdfLibrary/TEL_Strategy.pdf

SOLAS. (2017). *Barriers to Further Education and Training with Particular Reference to Long Term Unemployed Persons and Other Vulnerable Individuals.* Amarach Research. Dublin: SOLAS. Retrieved February 6, 2018, from http://www.solas.ie/SolasPdfLibrary/Barriers%20to%20FET%20Final%20June%202017.pdf

Thomas , J., & Harden, A. (2007). Methods for Research Synthesis Node. *Evidence for Policy and Practice Information and Co-ordinating (EPPI-)Centre, 10*(07), 1-19. doi:http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=188

Tiven, M. F. (2018). *Evaluating Global Digital Education:Student Outcomes Framework.* New York: Bloomberg Philanthropies and the Organisation for Economic Co-operation and Development. Retrieved July 11, 2019, from http://www.oecd.org/pisa/Evaluating-Global-Digital-Education-Student-Outcomes-Framework.pdf

Tusiime, W. E., Johannesen, M., & Gudmundsdottir, B. (2019). Developing teachers' digital competence: approaches for Art and Design teacher educators in Uganda. *International Journal of Education and Development using Information and Communication Technology (IJEDICT), 15*(1), 133-149. Retrieved July 14, 2019, from http://content.ebscohost.com/ContentServer.asp?T=P&P=AN&K=136489807&S=R&D=ehh&EbscoContent=dGJyMNHr7ESep7I4yOvqOLCmr1Gep7JSsq%2B4SraWxWXS&ContentCustomer=dGJyMOzZ54rq3%2BBT69fnhrnb4osA

United Nations. (2015, September 25). *About the Sustainable Development Goals.* Retrieved July 11, 2019, from Sustainable Development Goals United Nations: https://www.un.org/sustainabledevelopment/sustainable-development-goals/

Van Den Berg, C. (2018). 21st Century Learning: Changes to Knowledge Acquisition in a Digital World. *Proceedings of the International Conference on Intellectual Capital, Knowledge Management & Organizational Learning*, (pp. 330–338). Cape Town. Retrieved July 23, 2019, from <http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,cookie,shib&db=bth&AN=136627128&site=eds-live&scope=site>

Wahyuni, D. (2012, Winter). The research design maze: understanding paradigms, cases, methods and methodologies. *Journal of applied management accounting research, 10*(1), 69-80. Retrieved July 29, 2019, from http://hdl.handle.net/10536/DRO/DU:30057483

Walls, J. (2016). A Theoretically Grounded Framework for Integrating the Scholarship of Teaching and Learning. *Journal of the Scholarship of Teaching and Learning*, 39-49. doi:10.14434/josotl.v16i2.19217

What is the National Broadband Plan. (2019, May 1). Retrieved July 9, 2019, from Government of Ireland: https://www.dccae.gov.ie/documents/DCCAE%20Brochure%206pg%20DL%20NBP%20What%20Is_WEB.pdf

White, D. (2018, April 1). The rise of the banking machines will dispense with cash, branches and humans. *Irish Independent*. Retrieved July 11, 2019, from https://www.independent.ie/business/irish/the-rise-of-the-banking-machines-will-dispense-with-cash-branches-and-humans-36762525.html

Wilkinson R, P. K. (2010). The Spirit Level. *Geography*, *3*(95), 149-153. doi:10.2307/20789365

World Economic Forum. (2016). *The Future of Jobs, Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution.* World Economic Forum. Geneva: World Economic Forum. Retrieved January 28, 2019, from http://www3.weforum.org/docs/WEF_Future_of_Jobs.pdf

Appendices

Appendices A – Plain Language Statement

NATIONAL COLLEGE OF IRELAND MASTERS IN ARTS IN LEARNING & TEACHING RESEARCH PROJECT

Plain Language Statement

Introduction to a Research Study:

'Exploring DigComp in Ireland's Community Education sector'

According to the Digital Economy and Society Index 2018, Country Report Ireland, "only 48% of individuals have at least basic digital skills".

The European Framework for Digital Competence (DigComp) is a "scientifically sound framework" setting out what it means for educators and citizens to be digitally competent and has been developed over the past decade by the European Union.

I am undertaking a research project '*Exploring DigComp in Ireland's Community Education sector*' and this is being done as part of my work on a Masters in Arts in Learning and Teaching with National College of Ireland's Learning & Teaching Department.

The aim of this study is to undertake a qualitative inquiry into Irish community education to explore Irish Community Education practitioner's awareness of and responses to the European Digital Competence Framework for Citizens (DigComp).

I am seeking to understand whether Ireland's community education sector is aware of and understands what the DigComp Framework is and if they intend to utilise it in their practice to support their learners to achieve digital competence.

Contact details of principal investigator:

Mark Kelly, student in Masters in Arts in Learning and Teaching, mobile number: 085 275 3755 email: x16145356@student.ncirl.ie

Contact details of Research Supervisor:

Dr. Yvonne Emmett, Lecturer in Education, Learning & Teaching and Education Programmes, National College of Ireland Tel: 01 4498547 yvonne.emmett@ncirl.ie

What your involvement in the Research Study will require:

I am inviting a small number of community educators to participate in a qualitative research inquiry into DigComp, the European Union's digital competency framework which offers a tool to improve citizens' digital competence and explore its implications in Ireland's community education sector.

The data will be gathered through one-to-one interviews with up to six Irish community educators/trainers/programme directors/managers. The one-to-one interviews will be semi-structured but follow a line of questioning to extract insights.

The interviews will last 30-60 minutes, and I will provide a copy of the Framework and a short promotional YouTube video so we can discuss your thoughts on Digital Competency in Ireland's community education sector. I will audio record the interview, with your permission, for it to be transcribed for analysis.

Potential risks to participants from involvement in the Research Study:

I don't envisage there to be any risks to participants from their involvement in the Research Study, but please feel free to raise any concerns you may have so I can provide any assurances required.

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

We all exist on a digital skills / digital literacy spectrum and DigComp offers a tool to improve citizens' digital competence. I hope this research will start a conversation in the sector that will help raise awareness around how DigComp can support Irish community educators and trainers to address gaps in their own, and their learner's digital competencies by informing how and what they need to learn to gain digital proficiencies so they all can have the required skills needed to live, work and learn in our digitised society.

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

I will use false names and organization details will not be recorded. Identifying names and locations will be replaced with pseudonyms (e.g. interviewee 1, organisation A) or labels that establish roles (e.g. trainer, Family Resource Centre). All hard copy materials will be scanned, saved into password protected files on the National College of Ireland One Drive, and the hard

copy consent forms will be shredded. All audio recordings will be immediately transcribed and deleted from the recording equipment, so voices aren't recognisable.

Advice as to whether data is to be destroyed after a minimum period

Password protected scans of consent forms and transcripts of anonymized audio recordings will be held on secure National College of Ireland drive for five years as per NCI Data Retention policy.

Involvement in the Research Study is voluntary

If you are happy to participate in this research study, please be clear that at all times your participation is strictly voluntary, and you can withdraw from the study at any time.

Any other relevant information

The sample size for this research is small and I am required to advise participants that this may have implications for privacy/anonymity although I am confident that all the measures outlined above will maintain each participant's privacy and anonymity.

If participants have concerns about this study at any time, feel free to please contact:

Dr. Yvonne Emmett, Lecturer in Education, Learning & Teaching and Education Programmes, National College of Ireland Tel: 01 4498547 yvonne.emmett@ncirl.ie

Appendices B – Informed Consent Form

NATIONAL COLLEGE OF IRELAND MASTERS IN ARTS IN LEARNING & TEACHING RESEARCH PROJECT

- **Informed Consent Form -**

'Exploring DigComp in Ireland's Community Education sector'

c/o National College of Ireland's Learning & Teaching Department, Mayor Square, Dublin 1

Contact details of principal investigator:

Mark Kelly, student in Masters in Arts in Learning and Teaching,
Mobile number: 085 275 3755
Email: x16145356@student.ncirl.ie

Contact details of Research Supervisor:

Dr. Yvonne Emmett, Lecturer in Education, Learning & Teaching and Education Programmes, National College of Ireland
Tel: 01 4498547
Email: yvonne.emmett@ncirl.ie

Purpose of the research

The aim of this study is to explore Irish Community Education practitioner's awareness of and responses to the European Digital Competence Framework for Citizens (DigComp).

I am seeking to understand whether or not Ireland's community education sector is aware of and understands what the DigComp Framework is and if they intend to utilise it in their practice to support their learners to achieve digital competence. If they are aware and understand what DigComp is, how do they propose to use it in their practice.

I am inviting a small number of community development practitioners and educators to participate in a qualitative research inquiry into DigComp, the European Union's digital competency framework.

The data will be gathered through one-to-one interviews with up to 10 Irish community educators/trainers/programme directors/managers. The one-to-one, face-to-face interviews will be semi-structured but follow a line of questioning to extract insights.

The interviews will last 30-60 minutes and will follow a briefing about DigComp (I will provide a copy of the Framework and a short promotional YouTube video.

Please note, I will not collect or hold any data on the results from the assessment, but I will seek to explore its meaning and usefulness to practitioners. I will audio record the interview, with your permission, for it to be transcribed for analysis.

Participant – please complete the following (Circle Yes or No for each question)

I have read the Plain Language Statement (or had it read to me)	*Yes/No*
I understand the information provided	*Yes/No*
I have had an opportunity to ask questions and discuss this study	*Yes/No*
I have received satisfactory answers to all my questions	*Yes/No*
I am aware that my interview will be audiotaped	*Yes/No*
I understand that I may withdraw from the Research Study at any point.	*Yes/No*

Confidentiality is very important to this research process and in order to preserve privacy and anonymity of participant's false names and details of the organization you work for will not be recorded.

Identifying names and locations will be replaced with pseudonyms (e.g. interviewee 1, organisation A) or labels that establish roles (e.g. trainer, Family Resource Centre).

However, you should be aware that as the sample size for this research is small you may still be identifiable in the research.

Any hard copy materials (consent form) will be scanned, saved into password protected, encrypted files on a secure server on the National College of Ireland One Drive, and the hard

copy consent forms will be shredded. All audio recordings will be immediately transcribed and deleted from the recording equipment, so voices aren't recognisable.

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: _____

Witness: _____

Date: _____

Appendices C – Sample of email invite to participate

From: Mark Kelly

Sent: 13 June 2019 17:18

Subject: Invitation to participate in Qualitative Masters Research project

Good afternoon,

I am undertaking a research project '*Exploring DigComp in Ireland's Community Education sector*' and this is being done as part of my work on a Masters in Arts in Learning and Teaching with National College of Ireland's Learning & Teaching Department.

The aim of this study is to undertake a qualitative inquiry into Irish community education to explore Irish Community Education practitioner's awareness of and responses to the European Digital Competence Framework for Citizens (DigComp).

I am seeking to understand whether Ireland's community education sector is aware of and understands what the DigComp Framework is and if they intend to utilise it in their practice to support their learners to achieve digital competence.

I am inviting a small number of community educators to participate in a qualitative research inquiry into DigComp, the European Union's digital competency framework which offers a tool to improve citizens' digital competence and explore its implications in Ireland's community education sector.

I would be delighted if you were willing and able to contribute to this research project. I would appreciate it if you could let me know by return email (to this email address) if you were prepared to participate and when would suit you to arrange the research interview. I will then coordinate with you on the arrangements.

Please find attached a Plain Language Statement with details on the research project as well as an Informed Consent Form which will need to be printed, completed and returned to me.

If you have any questions, my contact details and those of my Supervisor in National College of Ireland are provided with the attached documents.

Thank you for your time and I look forward to hearing from you soon.

Sincerely,

Mark Kelly

Masters in Arts in Learning & Teaching Scholar

School of Learning & Teaching

National College of Ireland

Mayor Square

Dublin 1

Appendices D – Interview Schedule

Primary Qualitative Research Survey question: -

What are community educators' perceptions and experiences of digital competence?

Subsidiary questions:

- What does 'digital competence' mean to community educators?
- Do they perceive themselves and their learners to be digitally competent?
- What are the barriers and enablers they perceive to achieving digital competence?
- How valuable is the DigComp framework to them?

Sample questions for use in the interview:

1. *How would you describe what it is to be 'digitally competent' today?*

Background data on community-based learners and the learning context

2. How would you describe your educational setting and the learners you work with?
3. What levels of education do your learners generally possess? What stage have they achieved to date?
4. Describe the main reasons your learners are attending a programme or course of learning in your setting.
5. How would you explain being 'digitally competent' to your learners?
6. Would you feel your learners are 'digitally competent'? If not, how are they not?
7. Would you promote the advantages or benefits of being digitally competent to your learners? If so, how?
8. What would you consider as the being the main disadvantages of <u>not</u> being digitally competent, from your learners perspective? Please list them.

Insights on DigComp, European Digital Competency Framework

9. Have you heard of DigComp, the European Digital Competence Framework?

If yes:

   a. Where/when did you hear of it?
   b. What do you know about it?
   c. Do you / would you use / are you using DigComp in your practice?

If no: [briefly explain/describe DigComp]

   a. What are your views [thoughts] on DigComp now?
   b. Do you think digital skills and the DigComp Framework are relevant to your work/practice?

(i) If so, how?...
(ii) If not, why?...

10. Do you think having digital skills in the 21st century is important for your learners?
    i. If you do, which skills? Why?
    ii. If not, please explain why?
11. In your opinion, how are learners best impacted from having a basic or advanced digital competency in the following areas:
    - Work
    - Active Citizenship
    - Learning
    - All of these
12. Which of these, would you describe, as being the highest priority for your learners?
13. Which of these, would you describe, as being the most important for their prospects?
    a. Now
    b. and in the future?

Data on the Digital Divide in Ireland

14. Have you heard of the phrase 'the Digital Divide'?
    a. If so, what does it mean to you?
    b. If not, [explain]
15. What are the main issues or barriers to availing of the benefits of technology in your setting?

Insights into Ireland's Community Educators

16. Do you / did you consider yourself to be digitally competent? Select one:
17. What digital competence are you most skilled at?
    - *Communication & Collaboration*
    - *Digital Content Creation*
    - *Problem-solving*
    - *Safety*
    - *Information and data literacy*
18. What digital competence would you most like to improve? Select one:
    - *Communication & Collaboration*
    - *Digital Content Creation*
    - *Problem-solving*
    - *Safety*
    - *Information and data literacy*
19. Where would you go to better understand your digital capabilities?

Digital Self-Assessment?

20. Do you think a digital competency self-assessment tool would be of benefit to you?...

a. Your learners?...
b. Your practice?...

Critical Reflection / Reflexive Practice

21. Did you learn anything new about digital competence during the course of this interview?
    a. If so, what would that be?

Appendices E – Data Analysis

Digital competence Thematic Analysis – Data Coding

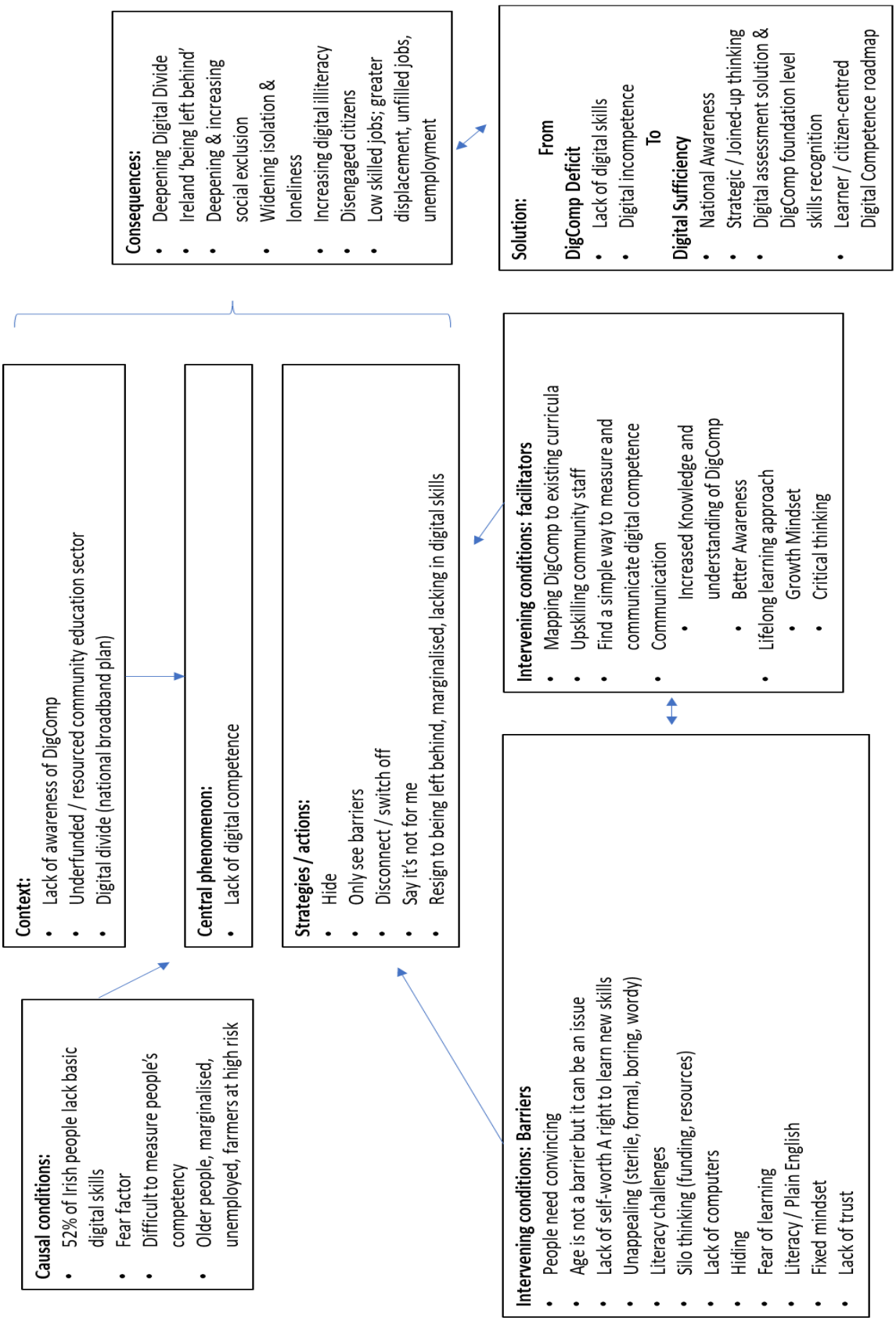
1	*It's being able to access information, be safe online, to operate various apps and platforms, being able to navigate around them*
1	*It's being able to engage, use digital tools and carry out a range of everyday tasks that people have to do nowadays as a matter of course*
1	*it's being able to integrate technology throughout the curriculum on an everyday level whatever you are delivering*
1	*I don't think there's a way of tracking the term 'competent' technology is moving too fast*
1	*It's very difficult to measure two people and decide what their competency is*
1	*It's being able to use not only a computer but your apps on your smartphone, your ATM card, negotiating ticket machines, your LEAP card for travel. Everything is going that way.*
1	*I wouldn't say it's my forte. Give me a problem, show me how to use it then I can use it.*
1	*I wouldn't be that digitally competent*
1	*it's being happy to approach computers and technology without a fear factor*
1	*I would consider myself to be digitally competent, but I've spent years upskilling*
1	*It's being able to access and do your own personal business as well as other business*

Color-coding data into themes:

Digital competence

	Theme		
1	It's being able to access information, be safe online, to operate various apps and platforms, being able to navigate around them		
1	It's being able to access and do your own personal business as well as other business		
1	It's being able to engage, use digital tools and carry out a range of everyday tasks that people have to do nowadays as a matter of course		
1	it's being able to integrate technology throughout the curriculum on an everyday level whatever you are delivering		
1	It's being able to use not only a computer but your apps on your smartphone, your ATM card, negotiating ticket machines, your LEAP card		Having the ability t
1	I don't think there's a way of tracking the term 'competent' technology is moving too fast		Unable to define
1	It's very difficult to measure two people and decide what their competency is		It's about access
1	I wouldn't say it's my forte. Give me a problem, show me how to use it then I can use it.		It's a mindset
1	I wouldn't be that digitally competent		
1	It's being able to access and do your own personal business as well as other business		
1	It's being able to access information, be safe online, to operate various apps and platforms, being able to navigate around them		
1	it's being happy to approach computers and technology without a fear factor		
1	I would consider myself to be digitally competent but I've spent years upskilling		

Appendices F - Axial coding of Themed Data Analysis



Submission of Thesis to Norma Smurfit Library, National College of Ireland

Student name: Mark Kelly Student number: 16145356

School: School of Business, NCI Course: Master of Arts in Learning and Teaching

Degree to be awarded: Master of Arts in Learning and Teaching

Title of Thesis: 'The DigComp Deficit'

One hard bound copy of your thesis will be lodged in the Norma Smurfit Library and will be available for consultation. The electronic copy will be accessible in TRAP (http://trap.ncirl.ie/), the National College of Ireland's Institutional Repository. In accordance with normal academic library practice all theses lodged in the National College of Ireland Institutional Repository (TRAP) are made available on open access.

I agree to a hard bound copy of my thesis being available for consultation in the library. I also agree to an electronic copy of my thesis being made publicly available on the National College of Ireland's Institutional Repository TRAP.

Signature of Candidate: Mark Kelly

For completion by the School:

The aforementioned thesis was received by Date:

This signed form must be appended to all hard bound and electronic copies of your thesis submitted to your school

ENDS

Mark Kelly

MA in Learning & Teaching

National College of Ireland

2019