

Developing critical thinking through eportfolio based learning: an exploration of the experiences of non- traditional online distance learners

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DECLARATION

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SUMMARY

This case study explored the nature of the learning experience with an eportfolio and whether it enhanced the development of critical thinking in online distance learners. The project adopted a case study approach, following twenty-four online distance learners over the course of one academic year studying an intermediate sociology module as part of the BA (Hons) Humanities/ BA (Hons) Humanities (Psychology Major) at Open Education, DCU. The study focused on the case of the learner experience of eportfolio based learning and the process of developing critical thinking.

The research question for this study was: *Can eportfolios enhance the nature of the learning experience and the development of critical thinking among online distance learners?* Data were generated using the participant eportfolio entries and two-time semi structured interviews. The participants were interviewed with their eportfolio where written, visual and physical artefacts were used as stimulus during the interviews. The analytical approach for the study was thematic analysis, a data led approach following the Braun & Clarke (2006) six phases of thematic analysis.

The findings were presented into five themes, which demonstrated the multifaceted nature of learning experiences with an eportfolio and its relationship with the development of critical thinking for online distance learners. The themes were; being an online distance learner, the experience of learning with an eportfolio, my approach to learning, thinking critically in my eportfolio, the sociology discipline context.

Arguably the most decisive findings from the data were; that learning with an eportfolio supported the development of critical thinking skills and dispositions within the discipline context for online distance learners. The eportfolio was more than a technological tool for online distance students, it was a deeply personal space where students experimented with new ideas and approaches. Furthermore, the sociology discipline context was fundamental to meaningful learning with an eportfolio. In addition, this case study demonstrated the significance of the temporal aspect of learning with an eportfolio. The retrospective act of reflecting back on their learning and the future focused planning had a positive impact on the student learning experience. Finally, learning with an eportfolio enabled online distance learners to document their lived experiences and learning approaches which gave a unique picture of what it is like to be an online distance student.

The study concludes with a number of recommendations for practitioners, researchers and future lines of research such as further exploration of the relationship between discipline context, eportfolio based learning and the development of disciplinary critical thinking.

ABSTRACT

Developing critical thinking through eportfolio based learning: an exploration of the experiences of non-traditional online distance learners

This doctoral study explores the nature of the learning experience with an eportfolio and whether it enhances the development of critical thinking among online distance learners. The project adopts a case study approach, following twenty-four online distance learners over the course of one academic year. The study focuses on the case of the learner experience of eportfolio based learning and the process of developing critical thinking.

The research question for the study is: Can eportfolios enhance the nature of the learning experience and the development of critical thinking among online distance learners? Data were generated using the participant eportfolio entries and two-time semi structured interviews. The participants were interviewed with their eportfolio, written, visual and physical artefacts from the participant's eportfolio were used as stimulus during the interviews. The analytical approach for the study was thematic analysis, a data led approach following the Braun & Clarke (2006) six phases of thematic analysis. The findings were presented into five themes, which demonstrated the multifaceted nature of learning experiences with an eportfolio and its relationship with the development of critical thinking for online distance learners. The themes were; being an online distance learner, the experience of learning with an eportfolio, my approach to learning, thinking critically in my eportfolio, the sociology discipline context.

Findings indicate that learning with an eportfolio can enhance the nature of the learning experience by providing learners with a personal space to evaluate their own learning, to process their thoughts and experiences and to document their lives and learning in an authentic and meaningful way. In addition, the findings suggest that learning with an eportfolio can enhance the development of critical thinking skills and dispositions within a disciplinary context.

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RESEARCH OUTPUTS

The following publications have resulted from this research:

Journal articles:

Farrell, O., & Seery, A., (2018). "I am not simply learning and regurgitating information, I am also learning about myself": learning portfolio practice and online distance students. Distance Education, Advance online publication. doi: 10.1080/01587919.2018.1553565

Farrell, O., (2018) Failure to Launch: The Unfulfilled Promise of Eportfolios in Irish higher education: An Opinion Piece. DBS Business Review, 2. doi: 10.22375/dbr.v2i0.30

Conference presentations:

Farrell, O. (2017). What is it like learning with an eportfolio for online distance learners? Presentation at annual European Association for Distance Teaching Universities (EADTU), Online, Open and Flexible Higher Education Conference, Milton Keynes, UK, 26th October.

Farrell, O. (2017). Student voices on eportfolio "The learning portfolio differs to other modes of learning, I am not simply learning and regurgitating information, I am also learning about myself". Presentation at EdTech 2017 TEL in an Age of Super complexity - Challenges, Opportunities and Strategies, Annual Conference of the Irish Learning Technology Association, Sligo, 1st & 2nd June.

Farrell, O. (2017). The learning portfolio differs to other modes of learning, I am not simply learning and regurgitating information, I am also learning about myself. Presentation at AAEEBL Regional Conference, Guttman College, New York, 2-3 March.

Farrell, O. (2016). The next generation of online learning: How can digital portfolios enhance the nature of the learning experience and the development of criticality among flexible learners? The Next Generation Digital Learning Research Symposium, DCU, 1st November.

Farrell, O. (2017). How can eportfolio enhance the nature of the learning experience and the development of critical thinking among online distance learners? Presentation at 8th Annual Postgraduate Research Conference, School of Education, Trinity College, 27th May.

Farrell, O. (2016). Opening minds with eportfolio: How can eportfolio enhance the nature of the learning experience and the development of criticality among flexible learners? ePIC 2016 Conference, Bologna, 26-28th October.

Invited presentations:

Farrell, O. (2018). Critical thinking, discipline context and eportfolio, Presentation at Practices with Eportfolio, Leuven, 20th February.

Farrell, O. (2017). Using a Mahara Eportfolio with Online Distance Students. Presentation at Mahara US User Group Meeting, [Online], 23rd May.

Farrell, O., (2017). Using a Mahara Eportfolio with Online Distance Students. Presentation at MaharaIRL User Group Meeting, Dublin, 21st April.

Farrell, O (2016). Critical Thinking and Eportfolio. Presentation at Eportfolio in Ireland: What now? Where next? DIT, 21-23rd March.

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GLOSSARY

Eportfolio: In this study an eportfolio is defined as “The learning portfolio provides a vehicle for bringing together judiciously selected samples of students’ work and achievements inside and outside the classroom for authentic assessment over time...The learning portfolio, then, becomes more than a product, a simple repository of artefacts; it becomes a process of reflection, of organizing, prioritizing, analysing, and communicating one’s work and its value, which may prompt insights and goals” (Zubizarreta, 2012, p.65).

Online distance learner: An online distance learner is a part time adult learner based off campus, studying on a course where the majority of the learning is online, but may engage in a small number of face to face classes.

Online distance learning: Online distance learning is a course where the majority of the learning is online, the students are based off campus but may engage in a small number of face to face classes.

Critical thinking: “critical thinking is a judgement process. Its goal is to decide what to believe and/or what to do in relation to the available evidence, using appropriate conceptualizations and methods and evaluated by the appropriate criteria” (Facione & Facione, 2008, p.2).

Critical folio thinking: The critical folio thinking framework conceptualises effective learning portfolio practice as comprising of four elements: the process of learning, critical thinking skills, reflection and discipline context. The process of learning portfolio practice can be transformative, personal and empowering for students. Effective learning portfolio practice can stimulate critical thinking, provide space for students to experiment and reflect on their learning journeys. Reflective writing is the medium which facilitates learning portfolio practice. The developmental process of learning portfolio practice can be authentic, promote deep learning and should be grounded in a disciplinary context.

1 CHAPTER ONE INTRODUCTION

1.1 INTRODUCTION

The aim of this study is to explore the nature of the learning experience with an eportfolio and whether or not it can enhance the development of critical thinking among online distance learners studying an intermediate sociology module as part of the BA (Hons) Humanities/ BA (Hons) Humanities (Psychology Major) at Open Education, DCU. The study focuses on the case of the learner experience of eportfolio based learning and the process of developing critical thinking. This introductory chapter outlines the background, context, rationale, research questions, contexts, theoretical frameworks, research design and methods and organisation of this doctoral study.

1.2 BACKGROUND

This journey began ten years ago when I was asked to teach a module on personal development for first year undergraduates. Never having taught personal development before, I was struggling to come up with a teaching and assessment plan for the module. I spoke with a more experienced colleague and he suggested that I could use a portfolio assessment approach. Taking his suggestion, I started researching portfolio assessment and I found Helen Barrett's website and JISC's resources on eportfolios. At the time, an eportfolio seemed like a more fun and innovative approach than a paper based portfolio and I thought the technological aspect would ignite the interest of my students. With very little understanding of eportfolio pedagogy and a technology focused approach I launched into an eportfolio project with this group of students. At the end of the module, the

students gave oral presentations with their eportfolios and three aspects of the experience captured my attention; how well I knew the students because of the personal nature of their eportfolios, the pride they felt presenting their eportfolios and that something interesting was happening for the students in process of creating an eportfolio. The following year, I introduced eportfolio as an assessment into three further modules, conducted a small research project which examined the learner perspective on portfolio assessment and persuaded the college to pilot an open source eportfolio platform called Mahara. These initial steps shaped the early ideas for this doctoral study.

1.3 RATIONALE FOR THIS STUDY

This study set out to explore whether eportfolio practice might enable students to develop critical thinking skills and enhance their learning experiences in higher education. This research topic is important because developing university students who can think critically and learn in a self-aware, authentic and meaningful way is widely recognised as the goal of higher education. In fact, the Irish *National Strategy for Higher Education to 2030* describes critical thinking as one of the key characteristics of future graduates (Department of Education & Skills, 2011).

Although critical thinking has been perceived one of the key outcomes of higher education, this outcome is often unfulfilled with university students graduating with underdeveloped critical thinking skills (Dunne, 2015; Ennis, 2016; Facione, 1990; Willingham, 2007). A recent survey of Irish employers found that graduates lacked analytical skills (Grad Ireland, 2015). If critical thinking skills are a desired outcome of higher education by government, employers, academics and researchers, how can they be fostered in higher education students?

One approach to fostering critical thinking skills may be through new modes of learning and assessment such as eportfolio based learning. There is growing evidence of the impact of eportfolio practice on student learning, which is summarised below (Baird et. al. 2016; Buente et. al. 2015; Clarke & Hornyak, 2012; Eynon & Gambino, 2017; Lambe McNair Smith, 2013; Morreale et. al. 2017).

The research suggests that eportfolio based assessment enables students to:

- Integrate their learning and make connections between modules (Buente et. al., 2015; Eynon & Gambino, 2017; Morreale et. al. 2017);
- Learn in an authentic, student centred and meaningful way (Baird et. al., 2016; Lambe McNair, Smith, 2013);
- Improve their academic writing (Desmet, 2008);
- Learn independently (Clarke & Hornyak, 2012);
- Belong to community and collaborate with peers (Barbera, 2009; Bolliger & Shepherd, 2010; Ehiyazaryan-White, 2012; Moran et. al, 2014; Shepherd & Bolliger, 2014; Shepherd & Bolliger, 2011; Tucker, 2012; Wang, 2010)
- Learn in a self-regulated way (Alexiou et al., 2010; Jenson, 2011; Lam, 2013; Nguyen, 2015; Stoten, 2016).

However, according to Bryant & Chittum (2013) in their seminal article which systematically reviewed eportfolio research since 1996, an increased focus on empirical research on eportfolio practice is needed to create further evidence for eportfolio adoption which is becoming widespread in higher education. This research topic is important because very little is known about the impact of eportfolio practice on critical thinking development. There have been no empirical

studies to date, this gap was highlighted by Bryant & Chittum (2013, p.195) who argued that “future studies should continue to examine student development of reflective skills, critical thinking skills, deeper levels of learning and student engagement in the context of eportfolio.” This study directly addresses the clear gap in the eportfolio research in relation to critical thinking.

1.4 RESEARCH QUESTIONS

The study’s primary aim and research question is: *Can eportfolios enhance the nature of the learning experience and the development of critical thinking among online distance learners?*

Further, the research question can be considered as two interlinked parts:

- Part 1: Can eportfolios enhance the nature of the learning experience among online distance learners?
- Part 2: Can eportfolios enhance the development of critical thinking among online distance learners?

1.5 RESEARCH CONTEXT

The context for this research is the Open Education Unit at Dublin City University (DCU).

The National Distance Education Centre, later called Oscail and now Open Education/DCU Connected was founded in 1982, with the aim of providing undergraduate and postgraduate degrees to Irish adult learners through the mode of distance learning. From 1982 to 2006, students learned by self-directed study of course materials that they received by post and by attending a small number of face to face tutorials in centres around Ireland (Delaney, 2017). In 2006, the unit began the process to evolving from a distance learning mode to a blended online delivery.

In 2011, the mode of delivery further evolved from distance to online by introducing some synchronous live online tutorials and by delivering the course content electronically (Delaney, 2017). At the time of data generation in 2016/17, the mode of delivery could be described as an online distance learning course where the majority of the learning is online, the students are based off campus but may engage in a small number of face to face classes.

The context of this case study relates to the undergraduate humanities programmes offered by Open Education, which includes two qualifications: The Bachelor of Arts (Hons) in Humanities and the Bachelor of Arts (Hons) in Humanities (Psychology Major), which are part time modular degree programmes whereby learners can study a combination of history, sociology, literature, psychology and philosophy. The original Humanities Programme began in 1993 while the Psychology major began in 2014. The module setting for the study was an intermediate sociology module.

1.6 POLICY & PRACTICE CONTEXTS

There are a number of macro policy and practice contexts and trends which are now considered in relation to the micro perspective of this present study. These macro policy and practice contexts impact on the micro context of this case study. This section outlines three contexts relevant to the study; firstly, the policy in relation to critical thinking, secondly, the role of technology in higher education policy, and finally, online distance learning and Irish government policy.

The prevailing conception of critical thinking in Irish, British and European policy is as part of a set of generic skills essential for higher education students to attain (McMahon, 2014; Pithers & Soden, 2000). This conceptualisation of critical thinking

originates from the European higher education reform programme set out by the 1999 Bologna Declaration (McMahon, 2014). The Bologna process introduced the learning outcome approach to programme design and is linked to the emergence of a generic skills approach in Irish higher education, as evidenced by the *National Strategy for Higher Education to 2030* report (Department of Education & Skills, 2011). In this report, critical thinking was described as one of the key characteristics of future graduates, a part of a set of future skills that “increased attention must be paid to core skills such as quantitative reasoning, critical thinking, communication skills, team-working skills and the effective use of information technology” (Department of Education & Skills, 2011, p.35). There are a number of authors who challenge this prevailing view of critical thinking as a generic skill. They argue that it is flawed as it fails to account for the importance of disciplinary context and is driven by a neoliberal employability agenda, which has become pervasive in the discourse of higher education (Dominguez, 2018; Dunne, 2015; Jones, 2009).

In higher education, the use of technology to support learning and teaching or e-learning has become ubiquitous and according to Selwyn (2016) “digital technology is now woven deeply into the fabric of university teaching and learning”. In Ireland, government policy from 1997 to present day has focused on the development of IT infrastructure to facilitate e-learning in higher education which aimed to use technology as a supplement to traditional teaching methodologies rather than encouraging fully online delivery (Farrelly, 2014). The government policy has been narrowly focused on the infrastructural aspect of the use of technology and has given little attention to the pedagogical impact of technology on higher education. This is evident in the *Roadmap for Enhancement in a Digital World 2015-2017* (2014) report produced by the National Forum for the Enhancement of Teaching and Learning in Higher Education. In Irish government policies on e-learning,

technology is framed as enhancing higher education and as a “self-evident good” (Farrelly, 2014).

The narratives surrounding technology in higher education tend to view educational technology as a panacea or as a disrupter of the current system which will cause transformation, this is also prevalent in the eportfolio literature (Bryant & Chittum, 2013; Farrelly, 2014; Goodfellow 2014; Selwyn, 2016). These narratives should be considered cautiously, bearing in mind Selwyn’s (2016) argument for the need to be sceptical of the claims made about technology in education and Bayne’s (2014) contention that a more nuanced understanding of digital education that considers the relationship between technology, society and education is required. Therefore, this study adopts a critical social scientific approach to educational technology rather than a technological deterministic one which is prevalent in the educational technology discourse (Selwyn, 2010). This study argues that technology can be an enabler of learning, but it is important to focus on the pedagogy and the learning that has been enabled and not on the technological tool. It is through this lens, that eportfolios are explored in this research study, with a focus on eportfolio practice and pedagogy rather than technology.

In the practice context, eportfolios are common in American higher education, with 57% of colleges using eportfolios (Eynon & Gambino, 2017). Similarly, in the UK, a survey carried out in 2014 highlighted that 78% of universities now have a centrally supported e-portfolio tool (UCISA, 2014). However, in Ireland, there has been a relatively slow pace of adoption of eportfolios. A recent report carried out by the Irish National Forum for the Enhancement of Teaching and Learning found that less

than 10% of Irish higher education students were engaged in portfolio based assessment (National Forum, 2016). This research study identifies three drivers of eportfolio adoption in the higher education literature: government policy, eportfolio communities, and funding for eportfolio practice and research. This thesis argues that the slow pace of adoption of eportfolios in Ireland is due to the absence of the three drivers of eportfolio adoption in Irish higher education. There was a lack of government policy drivers, no distinct Irish eportfolio community, and a scarcity of funding.

Online and distance education are the fastest growing areas of education worldwide. This is because they provide access to educational opportunities in a flexible manner to students from diverse backgrounds and geographical regions who often cannot access higher education by other means (Delaney & Fox 2013; Simpson 2012). However, this trend is not mirrored in the Irish context, the most recent figures compiled by the Irish Higher Education Authority (HEA, 2016) reveal that only 3% of enrolments are studying remotely and only 17% studying part time. Brown (2017) argues that the reason for the low participation rates in online distance education and part-time modes of study are due to the current restrictive funding model which does not financially support these study modes. Further, the current absence of funding for part-time and online distance modes is at odds with the stated national education policy which has the aim of increasing the participation rates of part time and flexible learners (Brown, 2017; Flannery & McGarr, 2014; HEA, 2015).

The contexts outlined in the section above shape the wider policy and practice landscape in which this present study is situated. Three key contexts were considered; critical thinking and higher education policy, the role of technology in

higher education policy, and finally, online distance learning and Irish government policy.

1.7 THEORETICAL FRAMEWORKS

This case study is bounded by two interlinked theoretical frameworks. The conception of eportfolio in this case study brings together three distinct theoretical approaches to eportfolio practice; Zubizarreta's (2008) *learning portfolio*, Chen & Black's (2012) *folio thinking* and Eynon & Gambino's (2017) *Catalyst framework for high impact eportfolio practice*. Zubizarreta's model brings together the conceptual relationship between eportfolio and critical thinking. Of particular relevance, are the elements of Zubizarreta's learning portfolio model that emphasise critical thinking and developmental process, "the intrinsic merit of learning portfolio is that involving students in the power of reflection, the critically challenging act of thinking about their learning and constructing a sense of the learning experience as a coherent, unified, developmental process" (Zubizarreta, 2008, p.xx). Chen & Black's folio thinking highlights that eportfolio practice should be a "pedagogical approach that focuses on designing structured opportunities for students to create eportfolio and reflect on their learning experiences" (Chen & Black, 2010, p.2). This focus on eportfolio practice and pedagogy rather than technology is a fundamental principle to the understanding of this thesis, and is shared by Eynon & Gambino's Catalyst framework for high impact eportfolio practice. The Catalyst Framework provides a much needed evidence-based approach to eportfolio practice, the features of the framework of particular relevance to this case study are the three design principles of inquiry, reflection and integration and the strong focus on pedagogy (Eynon & Gambino, 2017).

In summary, the model of eportfolio based learning for this case study is that the process of eportfolio based learning can be transformative, personal and empowering for learners. Effective eportfolio based learning can stimulate critical thinking, integrate learning, provide space for learners to experiment and apply theory and reflect on their learning journey. The process of learning with an eportfolio can be meaningful, authentic and promotes deep learning (See figure 1).



Figure 1 Learning portfolio practice model

The conceptualisation of critical thinking in this study is interlinked with the theoretical model of learning portfolio practice outlined above. Critical thinking is an integral element to effective student learning within the eportfolio practice

context. Three distinct theoretical approaches inform the conception of critical thinking in this thesis; Facione & Facione's (2008) definition of critical thinking and model of dispositions, the APA Delphi (Facione, 1990) framework of critical thinking skills and Grauerholz & Bouma-Holtrops' (2003) critical sociological thinking model.

This study places itself firmly in the normative tradition of critical thinking which centres on values, quality of thinking and formulation of evaluative judgement. As descriptive approaches to critical thinking are overly procedural and mechanistic; they reduce the complexity of thinking to computer like processes which do not take into account the affective aspect of critical thinking (Bailin, 1999; Fischer & Scriven, 1997).

Further, this study argues that critical thinking can be taught and learned within a discipline context, following the ideas of Bailin (1999), McPeck (1990) and Willingham (2007). As there is growing evidence, that a discipline embedded approach to critical thinking can be more effective than a generic skills approach (Abrami et. al., 2015; Niu, Behar-Horenstein, Garvan 2013; Tiruneh, Weldelassie, Kassa, Tefera, De Cock, Elen, 2016).

Critical thinking in this study is conceptualised as "a judgement process. Its goal is to decide what to believe and/or what to do in relation to the available evidence, using appropriate conceptualizations and methods and evaluated by the appropriate criteria" (Facione & Facione, 2008). This definition is evaluative, holistic and brings together the key elements of judgement, standards and attitude. Further, the motivation to think critically is fundamental and is this clearly set out in the Facione (2000) model of seven dispositions towards critical thinking which are: inquisitive,

systematic, judicious, truth seeking, confident in reason, open-minded and analytical.

This dispositional aspect is fundamental to the conception of critical thinking for this study. In addition, the clearly defined skills of critical thinking set out by the APA Delphi (Facione, 1990) model is an inclusive and robust framework which sets out the six critical thinking skills of interpretation, analysis, evaluation, inference, explanation and self-regulation. Finally, the importance of discipline context and in the context of study the discipline of sociology is emphasised by Grauerholz & Bouma-Holtrops' (2003) model of critical sociological thinking, which situates critical thinking strongly with the discipline of sociology.

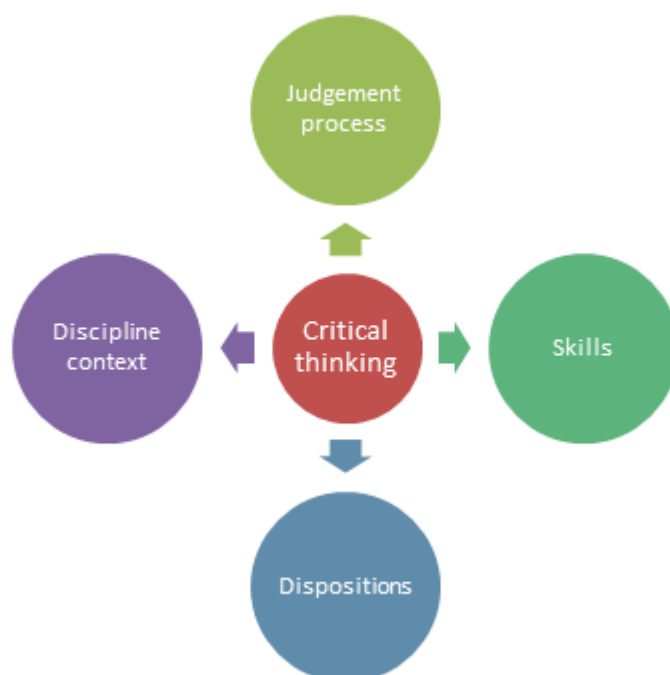


Figure 2 Model of Critical Thinking

In summary, the model of critical thinking for this case study is that critical thinking is a judgement process which enables decision making. It is encompassed by the

skills of interpretation, analysis, evaluation, inference, explanation and self-regulation and the dispositions of being systematic, judicious, truth seeking, confident in reason, open-minded and analytical. Critical thinking is strongly rooted with the discipline context. (See figure 2 above).

1.8 CRITICAL FOLIO THINKING

These interlinked theoretical frameworks for eportfolio practice and critical thinking outlined above form the theoretical foundations for this study and form a theoretical framework for learning portfolio practice called critical folio thinking (Farrell, 2018b). The critical folio thinking framework conceptualises effective learning portfolio practice as comprising of four elements: the process of learning, critical thinking skills, reflection and discipline context. The process of learning portfolio practice can be transformative, personal and empowering for students. Effective learning portfolio practice can stimulate critical thinking, provide space for students to experiment and reflect on their learning journeys. Reflective writing is the medium which facilitates learning portfolio practice. The developmental process of learning portfolio practice can be authentic, promote deep learning and should be grounded in a disciplinary context (see Figure 3 below).

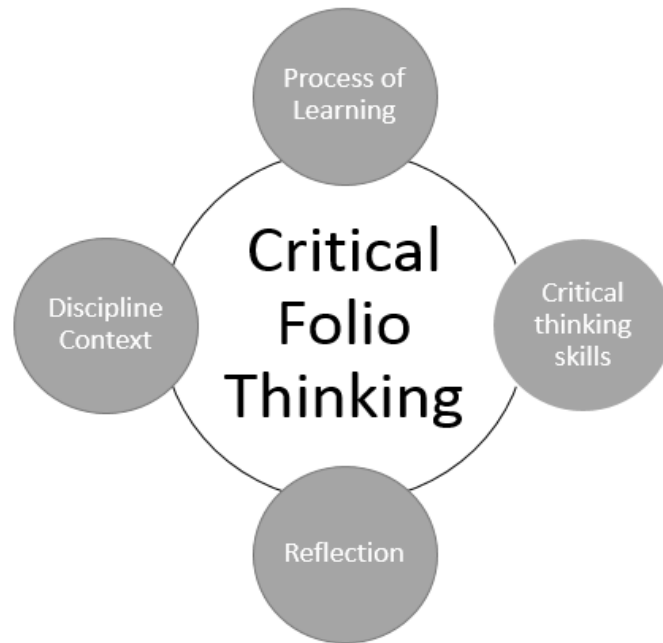


Figure 3 Critical Folio Thinking

1.9 RESEARCH DESIGN & METHODOLOGY

This study is qualitative in nature and grounded in the constructivist paradigm and is focused on understanding and exploring meaning (Braun & Clarke, 2013; Bryman, 2008). The study adopts a case study approach, using an exploratory holistic single-case design where the “object of the study” is the single issue of the learner experience of using an eportfolio and the process of developing critical thinking are investigated (Creswell, 2007). The study focuses on the case of the learner experience of using an eportfolio and the process of developing critical thinking. In order to gain a rich, thick and personal accounts of the experience of using an eportfolio the following data generation methods were selected (Braun & Clarke, 2013). Data were generated using the participant eportfolio entries and two-time semi structured interviews. The participants were interviewed with their eportfolio. The written, visual and physical artefacts from the participant’s eportfolio were used as stimulus during the interviews (Prosser & Loxley, 2008).

Data analysis was an ongoing process throughout the latter parts of the project, following a circular model of generation and analysing data, as “coding is analysis” (Miles & Huberman, 1994). The analytical approach for the study was thematic analysis, which was used to examine the “nature of eportfolio learning”- the affective, physical and cognitive, a data led approach following the Braun & Clarke (2006) six phases of thematic analysis. Five themes emerged from the data; being an online distance learner, the experience of learning with an eportfolio, my approach to learning, thinking critically in my eportfolio, the sociology discipline context. Detailed analysis of the themes was conducted in relation to the research questions and existing literature, which resulted in the five findings of the study.

1.10 CONTRIBUTION OF THESIS

I believe that this thesis makes significant contribution to the body of knowledge on the development of critical thinking skills, the nature of eportfolio based learning and the learning journeys of online distance students. This study’s original contributions are made on a number of fronts. The case study findings, demonstrate that learning with an eportfolio supports the development of critical thinking skills and dispositions within the discipline context for online distance learners. Further, the study shows that the eportfolio was more than a technological tool for online distance students, that it was a deeply personal space where students experimented with new ideas and approaches. In addition, this case study demonstrates the significance of the temporal aspect of learning with an eportfolio. The retrospective act of reflecting back on their learning and the future focused planning had a positive impact on the student learning experience. Finally, learning with an eportfolio enabled online distance learners to document their lived

experiences and learning approaches which gave a unique picture of what it is like to be an online distance student.

The theoretical model for learning portfolio practice developed by this study contributes to theory on developmental/process eportfolio and the relationship to critical thinking skill development and disciplinary context.

This study has taken a new methodological approach to data generation using the participant eportfolio entries and two-time semi structured interviews. Although previous studies (Ayan & Seferoglu, 2011; Chau & Cheng, 2010) have used this approach to data generation, no previous study has used participant's eportfolio as stimulus during interviews.

There are a number of original contexts, which this study contributes to the body of knowledge. In Ireland, there have only been five journal articles related to eportfolio and none related to online distance learners. Worldwide, there are no previous empirical studies which have examined the relationship between critical thinking skills development and eportfolio based learning. Also there are no previous studies on eportfolio in the discipline of sociology and very few which examined the role of discipline in eportfolio based learning. Very little is known about the experiences of online distance learners in Ireland, with only one previous study conducted.

This study makes a number of recommendations for practice which to date have not been considered as important for implementing effective eportfolio practice which supports student learning and develops critical thinking.

1.11 CONCLUSIONS

This chapter has outlined the background, context, rationale, research questions, contexts, theoretical frameworks, research design and methods and organisation of this doctoral study.

This introductory chapter has presented the research problem for the study that higher education desires critical thinking as an outcome, further it presented the gap in the literature on eportfolio and critical thinking which is analysed in detail in the eportfolio literature review in chapter three. This study explores two major topics; critical thinking and eportfolio within the contexts of the discipline of sociology and online distance learning, the literature, challenges, and debates are critiqued in the proceeding chapters.

In the next chapter, the literature on critical thinking definitions, practice and purpose in the higher education context are examined. The question of the importance of discipline context to the development of critical thinking skills is examined generally and specifically in relation to the discipline of sociology. This critique provides the theoretical foundation for the critical thinking framework discussed above.

1.12 STRUCTURE OF THESIS

This thesis is structured in twelve chapters:

Chapter 1: Introduction

Chapter 2: Critical thinking: definitions, frameworks and practice in higher education

Chapter 3: What is an eportfolio? definitions, practice and purposes

Chapter 4: Who are online distance learners?

Chapter 5: Research design, methodology and methods

Chapter 6: Introduction to Findings & Discussion

Chapter 7: Findings & Discussion part 1

Chapter 8: Findings & Discussion part 2

Chapter 9: Findings & Discussion part 3

Chapter 10: Conclusion of Findings & Discussion chapters

Chapter 11: Conclusion

2 CHAPTER TWO CRITICAL THINKING: DEFINITIONS, FRAMEWORKS AND PRACTICE IN HIGHER EDUCATION

2.1 INTRODUCTION

This chapter examines the literature on critical thinking definitions, practice and purpose in the higher education context. An analysis of the literature is presented and the chapter concludes with the critical thinking theoretical framework that was adopted for this study. Through an exploration of the two broad approaches to critical thinking in the literature; a philosophical or normative approach and a descriptive or psychological approach, this chapter aims to produce a model of critical thinking for this study, an answer to the elusive question: what is critical thinking?

2.2 METHODOLOGY

The methodology for this literature review chapter is that of a traditional literature review. However, the review was informed and structured by the following guiding questions:

- What is critical thinking?
- What theoretical frameworks are there for critical thinking?
- What is the relationship between discipline context and critical thinking?
- How is critical thinking taught and learned in higher education?
- What is the nature of critical thinking within the subject discipline of sociology?

These guiding questions were shaped and informed by the overarching research question of the study: *Can eportfolios enhance the nature of the learning experience and the development of critical thinking among online distance learners?*

The scope of literature review has the following boundaries; a focus on literature published in English, a limitation to texts available in full text in the library databases or online, a focus on critical thinking in higher education contexts, and finally the inclusion of peer-reviewed journal articles only, academic books and policy documents.

Each study was assessed by reading the title and abstract for relevance to the inclusion criteria and to the guiding questions for the literature review.

Inclusion:

- Published in English
- Texts available in full text
- Higher Education context
- Peer reviewed- journal articles
- Academic books
- Critical thinking
- Online Distance
- Sociology related
- Policy documents

Exclusion:

- Any other education context-not Higher education
- Grey literature
- Not peer reviewed

2.3 A BRIEF HISTORY OF CRITICAL THINKING

The history of critical thinking is intertwined with the origins of education and the history of ideas. From Ancient Greece to the present day the concepts of reason, rationalism and criticality have evolved while remaining a central aim of education. Great thinkers such as Socrates, Locke, Rousseau and Dewey shaped modern conceptions of the nature of knowledge, how we think and learn. This section presents a historical background to critical thinking and considers the following questions:

- Where does the concept of critical thinking come from?
- How has critical thinking evolved over time?

There are several recurring themes from the Ancient Greeks to the twentieth century relevant to critical thinking. Firstly, the importance of reason, rationalism and independent thought. Secondly, the act of questioning and challenging traditional assumptions. Finally, moving away from memorisation of facts to understanding.

The origins of critical thinking trace back to 700BC in Ancient Greece, where Greek philosophers ceased to accept traditional beliefs and began to start asking “questions that called for logical thought rather than a mere repetition of traditional folk knowledge” (Lawton & Gordon, 2002, p. 11). Socrates urged people to pursue a life of reason, his style of questioning known now as the Socratic Method encouraged his followers and students to question traditional assumptions and beliefs (Curren, 2006). Socrates believed that leading an ‘examined life’ brings happiness and virtue; this is evidenced in Plato’s *Apology* which reports Socrates’ trial for corrupting the young people of Athens with his philosophy.

I cannot hold my tongue, you will not believe that I am serious; and if I say again that the greatest good of man is daily to converse about virtue, and all that concerning which you hear me examining myself and others, and that the life which is unexamined is not worth living - that you are still less likely to believe. (Plato, nd, p.3)

Plato developed Socrates idea of the virtue of an individual leading an examined life, he believed that education is a basic component of a good society. Later, Aristotle rejected Plato's idealism in favour of realism and argued that what we think depends on the sensations we experience (Lawton & Gordon, 2002). The Ancient Greek tradition highlighted the importance of comprehensive, well - reasoned thinking and profoundly shaped educational philosophy.

After the scholasticism of the Middle Ages, the Renaissance of the 15th and 16th centuries saw the development of humanism. Humanist philosophy encouraged individuals to acquire a wide range of knowledge with the aim of understanding and exercising 'critical faculties' rather than the medieval memorisation of key texts (Lawton & Gordon, 2002).

The scientific revolution of the seventeenth century, the new sciences of astronomy, cosmology and physics pursued by Galileo, Kepler and Newton destroyed the old "harmonies of an anthropocentric universe ...which both Greek science and the bible had endorsed" (Porter, 2001, p. 13). The new scientific philosophy argued that nature was comprised of particles governed by the universal laws of physics and expressed mathematically. The scientific method of investigation began to change how society, history and nature were considered. The proper method of investigation became the scientific method and the belief that science was the key to human progress (Porter, 2001, p. 15).

Nature, and nature's laws lay hid by the night:

God said, let Newton be! and All was Light (Pope, 1806, p. 428).

Descartes was influenced by the scientific revolution, and in his *Rules for the Direction of the Mind*, he created a systematic discipline for thinking based on his principle of systematic doubt which involved "every part of thinking, he argued, should be questioned, doubted and tested" (Paul, Elder, & Bartell, 1997, p. 1). Descartes also emphasized the importance of using evidence to support judgements.

Later during the Enlightenment, a period known as the 'Age of Reason', philosophers were concerned with analysing and debating the nature of the mind and its powers, criticising the status quo and thinking rationally. In Britain, scientists such as Robert Boyle and Isaac Newton criticised past scientific research and began to develop a scientific method based on generation evidence and sound reasoning (Porter, 2001). The English academic John Locke's political ideas on freedom, the relationship between the individual and government contributed to the "theoretical foundation for critical thinking about basic human rights and the reasoned criticism of thoughtful citizens" (Paul, Elder, & Bartell, 1997, p. 1). In *Some Thoughts Concerning Education*, Locke criticised the ridged teaching method of contemporary schools, especially rote learning and he promoted learning by enquiry which he viewed as "nothing so much clears a learner's way, helps him so much on it, and makes him go so easy and so far in any enquiry, as a good method." (Locke, 1693, p. 3)

In France, philosophers such as Voltaire, Diderot and Rousseau made significant contributions to critical thinking. Their beliefs in the primacy of reason, progress, freedom of thought and enquiry and the transformative power of education had long-term effect on society (Porter, 2001). The Enlightenment view was that the key to understanding and controlling the world was reason. Towards the end of the Enlightenment in the 1780s, Immanuel Kant examined the clash which had emerged between the mechanistic, causal laws of science and the traditional view that morality requires freedom. In *The Critique of Pure Reason* which was Kant's response to the Enlightenment crisis of reason, he examined metaphysics. Kant reconciled the use of reason for science and morality as rational and mutually consistent (Porter, 2001).

The industrialisation of the 19th century created new social classes, factories, large cities and the massification of all areas of modern life including education. With industrialisation came new forms of criticality, new political movements such as Marxism which criticised capitalism, new academic subjects like Sociology which considered the disconnection and break down of social bonds in modern society (Lawton & Gordon, 2002). The development of psychology as a separate field and its scientific investigation of 'matters of the mind' was influential to the field of education and the concept of critical thinking. In the late 19th century and early 20th century, psychologists such as Piaget, Bruner, Skinner and Binet carried out ground breaking research into intelligence, the learning process, human development, language acquisition and behaviourism (Lawton & Gordon, 2002).

At the beginning of the twentieth century, the pragmatists continued Kant's inquiry into the reconciling of science with morality and religion. Pragmatism/functionalism concerned the examination of the function and purpose of mind and behaviour and

was developed 1870 by C.S. Peirce and William James. In 1907 William James published *Pragmatism: A New Name for an Old way of Thinking*, which offered a pragmatic way of thinking which could view science, morality and religion not in competition. Pragmatism was developed later by John Dewey; he developed the idea of inquiry as activity and argued that theory and practice are closely linked (Hookway, 2010).

There are three recurring themes from the Ancient Greeks to the twentieth century relevant to critical thinking. Firstly, the importance of reason, rationalism and independent thought. Secondly questioning and challenging traditional assumptions. Finally, moving away from memorisation of facts to understanding. When the American philosopher and psychologist John Dewey began writing about education at the turn of the twentieth century, he continued the examination of these themes. He defined critical thinking which he called reflective thinking as:

Active, persistent, and careful consideration or a belief of supposed form of knowledge in the light of the grounds which support it and further conclusions to which it tends. (Dewey, 1909, p. 9).

Dewey attacked the traditional transmission method of instruction, argued that people learn from experience and by thinking about what has been experienced. Dewey's reflective thinking involves criticality and reasoning, which he defined as "thinking includes all of these steps, -the sense of a problem, the observation of conditions, the formation and rational elaboration of a suggested conclusion and the active experimental testing" (Dewey, 1966, p. 151).

Dewey believed that students should be given the opportunity to engage critically with new ideas and learn through experience. "All educational institutions should

be equipped so as to give students an opportunity for acquiring and testing ideas and information in active pursuits typifying important social situations” (Dewey, 1966, p. 162). Dewey proposed a scientific method of approaching thinking which involved five stages. Firstly, we begin to think when presented a problem. Secondly, we gather data. Thirdly, we create a solution and hypothesis. Fourth, mental elaboration of the idea. Fifth, test the hypothesis (Lawton & Gordon, 2002). Dewey was a very influential thinker and is credited with many current educational approaches and is considered the father of the modern critical thinking tradition.

In the 1940s, building on the Dewey’s ideas on critical and reflective thinking, Edward Glaser’s conception of critical thinking and his test, the Watson-Glaser Critical Thinking Appraisal were very influential on modern conceptions of critical thinking (Abrami, Bernard, Borokhovski, Waddington, Wade, Persson, 2015; Fisher & Scriven, 2011). In an influential study on critical thinking and education, Glaser’s defined critical thinking as:

(1) An attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one’s experience; (2) Knowledge of the methods of logical enquiry and reasoning; and (3) Some skill in applying those methods. Critical thinking calls for persistent effort to examine any belief or supposed form of knowledge in the light of the evidence that supports it and further conclusions to which it tends. (Glaser, 1941, p.5).

Glaser’s definition of critical thinking was important because it highlighted the dispositional aspect and conceptualised critical thinking in terms of a skill.

In the 1960s, the philosophy of education experienced a revival which created renewed interest in the area of critical thinking. R.S. Peters and Paul Hirst transformed the philosophy of education into a modern discipline (Lawton & Gordon, 2002). In the modern context, there are two broad approaches to critical thinking in the literature; a philosophical or normative approach and a descriptive or psychological approach (Bailin, 1999; Facione, 2013; Fisher & Scriven, 1997; Mosely, et al., 2005). The descriptive approach focuses on skills, processes and procedures and the normative approach focuses on critical practice and the quality of thinking. This study places itself firmly in the normative tradition of critical thinking which centres on values, quality of thinking and formulation of evaluative judgement. As descriptive approaches to critical thinking are overly procedural and mechanistic; they reduce the complexity of thinking to computer like processes which do not take into account the affective aspect of critical thinking (Bailin, 1999; Fischer & Scriven, 1997).

Critical thinking has been perceived as one of the key outcomes of higher education (Dunne, 2015; Ennis, 2016; Facione, 1990; Willingham, 2007). There was a resurgence of interest in critical thinking in higher education during the 1980s. Critical thinking is high on the agenda of higher education due to the following drivers: European and national government policies, learning outcome curriculum design, the neoliberal employability agenda and reports of graduates lacking critical thinking skills. These drivers have placed critical thinking firmly on the agenda for higher education institutions. However, the framing of critical thinking as a generic skill is flawed, as disciplinary context plays a significant role in the development of critical thinking.

The history of critical thinking from its classical origins to modern day conceptions highlights several recurring and evolving themes; reason, independent thought, questioning and challenging traditional assumptions, moving away from memorisation of facts to understanding concepts.

2.4 WHAT IS CRITICAL THINKING?

The literature on critical thinking has its roots in three academic disciplines: psychology, philosophy and education (Lai, 2011). There is no agreed definition of critical thinking in the higher education literature. There is wide range of diverse interpretations of critical thinking ranging from a set of skills, a mind-set, an academic competency, an attitude and a habit of the mind. There are two broad approaches to critical thinking which are evident in the literature, the normative and the descriptive. Through this literature search, the fourteen most cited definitions of critical thinking have been identified and are collated in figure 4.

Descriptive definitions of critical thinking such as Brookfield (2015), Kuhn (1999), Sternberg (1986), Cottrell (2011) and Halpern (1998) focus on the cognitive skills, mental processes and procedures involved. They define critical thinking by the actions critical thinker can do, resulting in lists of skills which a critical thinker performs (Lai, 2011). These descriptive definitions of critical thinking are heavily influenced by cognitive psychology and the information processing model of cognition which views “the mind as a system that processes, stores and retrieves information” (Holt, Bremner, Vliek, Passer, & Smith, 2012, p. 16). These definitions view critical thinking as a cognitive process, skill or strategy which supports decision making, problem solving and analysis.

Critical Thinking Definitions	
APA Delphi Report- Facione(1990)	We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based. CT is essential as a tool of inquiry.
Bailin(1999)	Thinking that is goal-directed and purposive, “thinking aimed at forming a judgment,” where the thinking itself meets standards of adequacy and accuracy.
Brookfield (2015)	I see critical thinking as entailing four intersecting processes:(a) identifying the assumptions that frame our thinking and determine our actions, (b) checking out the degree to which these assumptions are accurate and valid, (c) looking at our ideas and decisions (intellectual, organizational, and personal) from several different perspectives, and (d) on the basis of all this, taking informed actions.
Cottrell(2011)	Critical thinking is a complex process of deliberation which involves a wide range of skills and attitudes. It includes; identifying other peoples positions, evaluating evidence, weighing up opposing arguments, being able to read between the lines, recognising techniques, reflecting on issues, drawing conclusions, synthesising information, presenting a point of view.
Ennis (1996)	Critical thinking is reasonable and reflective thinking that is focused on deciding what to believe or do.
Facione & Facione (2008)	Critical thinking is a judgement process. Its goal is to decide what to believe and/or what to do in relation to the available evidence, using appropriate conceptualizations and methods and evaluated by the appropriate criteria.
Fisher & Scriven(1997)	Critical thinking is skilled, active interpretation and evaluation of observations, communications, information and argumentation.
Halpern (1997,1998)	The use of cognitive skills or strategies that increase the probability of a desired outcome...thinking that is purposeful, reasoned, and goal-directed...and effective for the particular context and type of task. (1997) Critical thinking is purposeful, reasoned, and goal-directed. It is the kind of thinking involved in solving problems, formulating inferences, calculating likelihoods, and making decisions. (1998)
Kuhn(1999)	It identifies three forms of second-order cognition (meta-knowing)- metacognitive, metastrategic, and epistemological that constitute an essential part of what develops cognitively to make critical thinking possible.
McPeck(1990)	Critical thinking is the appropriate use of reflective scepticism and is linked with specific areas of expertise and knowledge.
Moon (2005)	Critical thinking is a capacity to work with complex ideas whereby a person can make effective provision of evidence to justify a reasonable judgement. The evidence, and therefore the judgement, will pay appropriate attention to context
Paul & Elder (2006)	Critical thinking is that mode of thinking-about any subject, content or problem- in which the thinker improves the quality of his or her thinking by skilfully analysing, assessing and reconstructing it. Critical thinking is self-directed, self-disciplined, self-monitored and self-corrective. It presupposes assent to rigorous standards of excellence and mindful command of their use. It entails effective communication and problem-solving abilities, as well as a commitment to overcome one’s native egocentrism and sociocentrism.
Sternberg (1986)	He defines critical thinking as comprising of “the mental processes, strategies and representations people use to solve problems, make decisions and learn new concepts.”
Willingham(2007)	He defines critical thinking as “seeing both sides of an issue, being open to new evidence that disconfirms your ideas, reasoning dispassionately, demanding that claims be backed by evidence, deducing and inferring conclusions from available facts, solving problems.”

Figure 4 Critical Thinking Definitions

The concept of metacognition which is an awareness of one's thought processes is fundamental in the descriptive definitions of critical thinking (Boekaerts, Pintrich, Zeidner, 2000; Flavell, 1979; Halpern, 2007; Kuhn & Dean 2004; Lai, 2011). Kuhn & Dean (2004) argue that there is an interrelationship between critical thinking and metacognition because critical thinking involves "self-awareness of one's own thinking and reflection on thinking of self and others" which is a central part of metacognition (p. 270). Similarly, Halpern (2007) contends that one of the underlying components of critical thinking is metacognition.

Willingham (2007) a cognitive psychologist challenges many of the theoretical underpinnings of the descriptive definitions of critical thinking, he argues that critical thinking is not a skill and that there is not a set of critical thinking skills that can be acquired and practiced regardless of context. However, he does contend that there are metacognitive strategies that once learned make critical thinking more likely (Willingham, 2007).

The descriptive definitions of critical thinking outlined above, which list skills and procedures performed by critical thinkers have been criticised by theorists such as Bailin (1999) and Fischer & Scriven (1997) as a simplification of a complex phenomenon. Further, these descriptive definitions are overly procedural and mechanistic; they reduce the complexity of thinking to computer like processes which do not take into account the affective aspect of critical thinking.

By contrast, the second group of definitions of critical thinking by Ennis (1996), McPeck (1990), Paul & Elder (2006), Bailin (1999), Fisher & Scriven (1997) and Facione & Facione (2008) highlight the formulation of judgement, the quality of thinking and the characteristics of the ideal critical thinker over mechanistic lists of skills and processes. These normative definitions of critical thinking stem from a philosophical background and the different discipline orientation to the psychological definitions is evident. In these definitions, critical thinking is not viewed as a skill but rather an attitude or state of mind. McPeck's (1990, p.10) describes this attitude as "reflective scepticism". Whereas, Paul & Elder (1998, p.34) argue that critical thinking is more than a set of skills but rather "a pervasive way of being". All of the normative definitions of critical thinking contend that the goal of critical thinking is to enable decision making and judgement (Bailin, 1999; Facione & Facione, 2008; Fischer & Scriven, 1997; McPeck, 1990; Paul & Elder, 2006). The importance of quality critical thinking in keeping with standards and criteria is emphasized by Paul & Elder (2006), Bailin (1999) and Facione & Facione (2008).

The definitions of critical thinking by Ennis (1989) and McPeck (1990) raise the question of whether critical thinking is best acquired within a subject context or generally. Ennis (1989) believed in a "general approach" to critical thinking; firstly, that critical thinking skills can be learned and improved through instruction, secondly, instruction of critical thinking need not be immersed in subject-specific content. By contrast to Ennis's ideas on generalisability of critical thinking, McPeck (1990) argued that critical thinking is closely associated with subject discipline, as thinking critically about something is thinking about specific content. This claim will play a significant role later in this thesis.

The most holistic definition from the normative tradition is that of Facione & Facione (2008), they define critical thinking as “a judgement process. Its goal is to decide what to believe and/or what to do in relation to the available evidence, using appropriate conceptualizations and methods and evaluated by the appropriate criteria.” This definition brings together the key elements of judgement, standards and attitude.

The final definition of critical thinking for discussion is the APA Delphi (Facione, 1990) this definition combines the normative and descriptive traditions and conceptions of critical thinking. With the aim of creating a common definition of critical thinking for higher education, a panel of 46 experts from a variety of different disciplines embarked on an international study sponsored by the American Philosophical Association from 1988-1990. The result was the APA Delphi report and was produced by the project’s lead investigator Peter Facione (Facione, 2013).

Interestingly, the APA Delphi Report addresses many of the key contemporary debates in the area critical thinking such as the normative vs. descriptive debate and the subject specific vs. general approach. The Delphi report produced the following definition of critical thinking:

We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based. CT is essential as a tool of inquiry. As such, CT is a liberating force in education and a powerful resource in one's personal and civic life. While not

synonymous with good thinking, CT is a pervasive and self-rectifying human phenomenon (Facione, 1990, p. 2).

Although it unifies both traditions of critical thinking, the Delphi definition is very long and too explicit to be usable; it is a definition by committee. In addition to the detailed definition, the Delphi group produced a conception of an ideal critical thinker. According to the report the ideal critical thinker is:

The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit(Facione, 1990, p. 2).

Importantly the Delphi conception of an ideal critical thinker addresses both the skills and dispositional dimensions; therefore, critical thinking is regarded as not just a skill but rather a state of mind.

Despite clear differences in the constructs and definitions between the normative and descriptive approaches, there are some areas for agreement. Most researchers agree on the specific abilities encompassed in their definitions of critical thinking, such as analysing arguments, using inductive and deductive reasoning, judging or evaluating (Lai, 2011).

Drawing the definitions of critical thinking together, six attributes in the literature discussed are of central importance to this study: the normative approach to defining critical thinking, the role of discipline context, quality and standards of thinking, judgement, the impact of attitude and disposition and the conception of critical thinking as a state of mind. The definition of critical thinking which encapsulates these core elements of judgement, standards and attitude, is that of Facione & Facione (2008, p.2). Therefore, this study adopts their definition of critical thinking as “a judgement process. Its goal is to decide what to believe and/or what to do in relation to the available evidence, using appropriate conceptualizations and methods and evaluated by the appropriate criteria” (Facione & Facione, 2008, p.2).

2.5 WHAT THEORETICAL FRAMEWORKS ARE THERE FOR CRITICAL THINKING?

Following on from the examination of critical thinking definitions in the previous section, this section examines seven key theoretical frameworks for critical thinking in the higher education context. The frameworks and models of critical thinking have developed from the definitions outlined in the section above into models which articulate the component critical thinking abilities, dispositions, competencies and skills. Many of the models for critical thinking are in agreement about the skills or abilities which constitute critical thinking, however they each have “a different way of cutting the same conceptual pie” (Ennis, 2016, p. 2).

One of the most influential and prolific writers of the normative perspective on critical thinking since the 1950s, Robert Ennis, has produced over 20 articles, several college textbooks and designed the Cornell Critical Thinking Test. Ennis’s model of

critical thinking has evolved and changed over time but his core conception that critical thinking is comprised of dispositions and abilities has remained constant (Ennis, 1996, 2015, 2016). His model outlines the general critical thinking dispositions and abilities of the ideal critical thinker, see figure 5 below.

The general critical thinking dispositions & abilities model created by Ennis (2016, 2015) is very detailed and complex, it presents a long list of the features of an ideal critical thinker which raises questions as to how would this work in practice. How likely are university students to possess all these abilities and dispositions?

Ennis-General Critical Thinking Dispositions & Abilities	
<i>Ideal critical thinkers are disposed to:</i>	<i>Ideal critical thinkers have the ability to:</i>
Seek and offer clear statements of the conclusion or question	Focus on a question
Seek and offer clear reasons, and be clear about their relationships with each other and the conclusion	Analyse arguments
Try to be well informed	Ask and answer clarification questions
Use credible sources and observations, and usually mention them	Understand and use elementary graphs and maths
Take into account the total situation	Judge the credibility of a source
Keep in mind the basic concern in the context	Observe, and judge observation reports
Be alert for alternatives	Use existing knowledge
Be open-minded	background knowledge
a. Seriously consider other points of view	
b. Withhold judgment when the evidence and reasons are insufficient	
Take a position and change a position when the evidence and reasons are sufficient	their knowledge of the situation
Seek as much precision as the nature of the subject admits	their previously-established conclusions
Seek the truth when it makes sense to do so, and more broadly, try to "get it right" to the extent possible or feasible	Deduce, and judge deductions
Employ their critical thinking abilities and dispositions	Make, and judge inductive inferences and arguments
	Define terms, and judge definitions
	Handle equivocation appropriately
	Attribute and judge unstated assumptions
	Think suppositionally
	Deal with fallacy labels
	Be aware of, and check the quality of, their own thinking
	Deal with things in an orderly manner
	Employ rhetorical strategies

Figure 5 General Critical Thinking Dispositions & Abilities (Ennis, 2016)

However, Ennis' work on critical thinking dispositions is crucial, he is the first theorist to highlight the dispositional aspect of critical thinking which is linked to attitude and motivation. He argued that one may be able to think critically but not necessarily

have the disposition to put it into practice. (Ennis, 1989) This dispositional aspect of critical thinking, is a conceptual element which shapes the theoretical framework of this study.

The dispositional dimension of critical thinking was further developed by the APA Delphi model of critical thinking (Facione, 1990). The report builds on Ennis's work on the dispositions of a good critical thinker which recognizes that the ability to think critically is distinct from the disposition to do so. (Ennis, 1989) Importantly the Delphi conception of an ideal critical thinker addresses both the skills and dispositional dimensions; therefore, critical thinking is regarded as not just a skill but rather a state of mind, which is described as "a critical spirit, a probing inquisitiveness, a keenness of mind, a zealous dedication to reason and a hunger or eagerness for reliable information which good critical thinkers possess but weak critical thinkers do not seem to have" (Facione, 1990, p. 11).

The Delphi model is a clear and inclusive framework of critical thinking, which explicitly defines the six skills of critical thinking as interpretation, analysis, evaluation, inference, explanation and self-regulation, each skills is further broken down into several sub-skills, see figure 6 (Facione, 1990). The clarity of the APA Delphi model, which encompasses the six well defined skills of critical thinking has created a framework which is conceptually robust and user friendly. The APA Delphi model's well defined conception of critical thinking skills are of particular relevance to this study.

APA Delphi Report-Core Critical Thinking Skills		
Skill	Delphi Description	Sub-skill
Interpretation	To comprehend and express the meaning or significance of a wide variety of experiences, situations, data, events, judgements, conventions, beliefs, rules, procedures, or criteria	• Categorize • Decode significance • Clarify meaning
Analysis	To identify the intended and actual inferential relationships among statements, questions, concepts, descriptions, or other forms of representation intended to express beliefs, judgements, experiences, reasons, information or opinions.	• Examine ideas • Identify argument • Identify reasons and claims
Evaluation	To assess the credibility of statements or other representations which are accounts or descriptions of a person's perception, experience, situation, judgement, belief, or opinion; and to assess the logical strength of the actual or intended inferential relationships among statements, descriptions, questions or other forms of representation	• Assess credibility of claims • Assess quality of arguments that were made using inductive or deductive reasoning
Inference	To identify and secure elements needed to draw reasonable conclusions; to form conjectures and hypotheses; to consider relevant information and to educe the consequences flowing from data, statements, principles, evidence, judgements, beliefs, opinions, concepts, descriptions, questions or other forms of representation.	• Query evidence • Conjecture alternatives • Draw conclusions using inductive or deductive reasoning
Explanation	To state and to justify that reasoning in terms of the evidential, conceptual, methodological, criteriological and contextual considerations upon which one's results were based and to present one's reasoning in the form of cogent arguments.	• State results • Justify procedures • Present arguments
Self-Regulation	Self-consciously to monitor one's cognitive activities, the elements used in those activities and the results educed, particularly by applying skills in analysis and evaluation to one's own inferential judgements with a view toward questioning, confirming, validating and or correcting either one's reasoning or one's results.	• Self-monitor • Self-correct

Figure 6 APA Delphi Critical Thinking Skills

Building on the work of the APA Delphi report, Peter Facione and Noreen Facione continued to investigate critical thinking, focusing in particular on the dispositional element. They argued that during the 1990s there was an overemphasis on the skill of critical thinking which “has been countered recently by a rebirth of interest in the dispositional side of thinking” (Facione, Facione, & Giancarlo, 2000). Their later work focuses on how to create the conditions in higher education that would encourage a person to be “both willing and able to think” (Facione, Facione, & Giancarlo, 2000). They further refined the conception of disposition and motivation to think critically as “the consistent internal motivation to engage problems and make decisions by using critical thinking” (Facione, Facione, Giancarlo 1997 cited in Giancarlo & Facione, 2001, p.30). Using the APA Delphi model of skills and dispositions Facione & Facione developed two critical thinking tests: *the California Critical Thinking Skills Test (CCTST)* and *the California Critical Thinking Dispositions Inventory (CCTDI)* which are general and discipline neutral (Facione, 2015; Giancarlo & Facione, 2001; Facione Facione Sanchez, 1994). As part of the development of the CCTDI, Facione (2000) identified seven dispositions towards critical thinking which are:

- Inquisitive
- Systematic
- Judicious
- Truthseeking
- Confident in reason
- Open-minded
- Analytical

In an empirical study using the CCTST and the CCTDI which aimed to investigate the relationship between disposition and critical thinking skills, Facione (2000) found a positive correlation between a positive disposition toward critical thinking and the relative strength of critical thinking skills. In a later longitudinal study which investigated disposition toward critical thinking among undergraduate students over four years of study, Giancarlo & Facione (2001) found that students' critical thinking dispositions either remained stable or increased over four years. Further, they found females scored significantly higher than males in overall disposition toward critical thinking and they found subject disciplinary difference in disposition, with business and science students scoring lower on truthseeking and open-mindedness than humanities students (Giancarlo & Facione, 2001). The Facione & Facione model of dispositions towards critical thinking is a key conceptual element which shapes the theoretical framework of this study.

In contrast to the Facione & Facione model, Richard Paul & Linda Elder argue that critical thinking is rooted within academic disciplines (Paul, 2005). In their model of critical thinking, Paul and Elder (2006) contend that critical thinkers must strive to develop essential intellectual traits such as integrity, humility, fair-mindedness, perseverance, confidence in reason, courage, empathy and autonomy, see figure 7 below. They view critical thinking as more than a set of skills but rather is a state of mind which can be improved by developing a questioning inner voice (Paul & Elder, 1998).

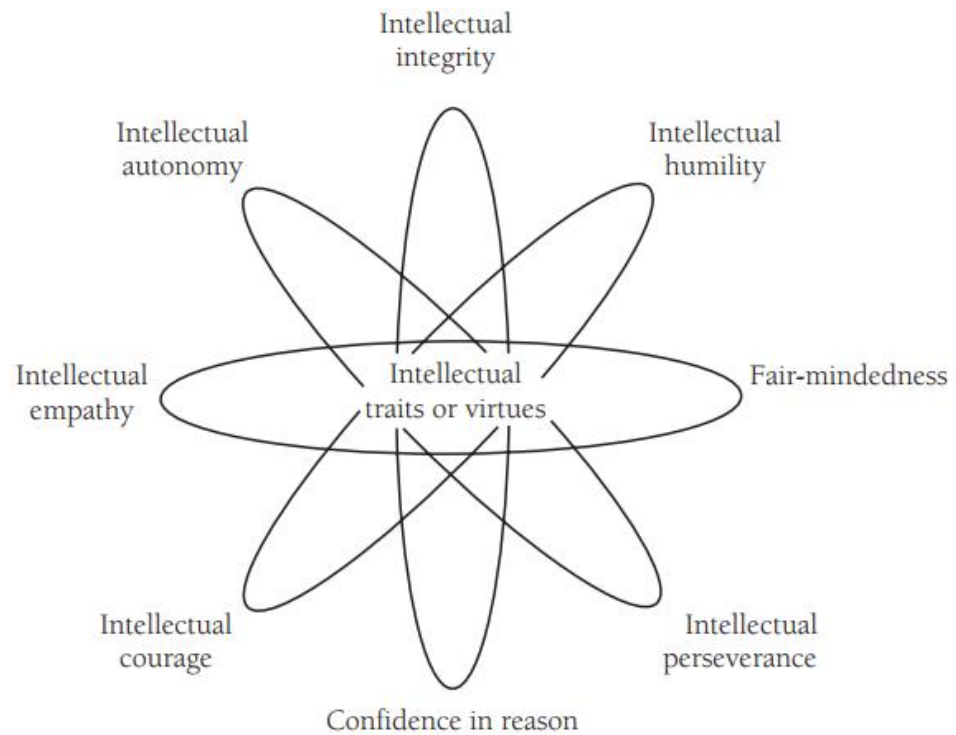


Figure 7 Paul & Elder Model of Intellectual Traits of Mind (Paul 2005)

In addition to outlining the traits of a good critical thinker, Paul and Elder's model also contains standards for thinking which are clarity, accuracy, precision, relevance, depth, breadth, logic, significance and fairness. These standards can be used by thinkers as a way of improving their reasoning (Paul & Elder, 2006, p. 87). Paul and Elder's model of critical thinking raises some interesting ideas about the importance of quality, the role of oneself in the thinking process. From Paul & Elder's model, the discipline specific aspect and the idea of critical thinking as a state of mind are also of particular relevance to this study.

With a similar model of critical thinking to Paul & Elder (2006), Bailin's (1999) framework conceptualises critical thinking in terms of intellectual resources and habits of the mind. Like Paul & Elder (2006), she places value on the quality of thinking and like the APA Delphi (Facione, 1990) model, she articulates an ideal

critical thinker. Bailin (1999) characterises a critical thinker in terms of the intellectual resources they should have such as background knowledge, operational knowledge of standards of thinking and knowledge of key critical concepts. Bailin (1999) also emphasizes the dispositional side of critical thinking like Facione, Facione & Giancarlo (2000) and Ennis (2016), she views the dispositional side as habits of the mind. Bailin (1999) defines these habits of the mind as:

- Respect for truth and reason
- Respect for quality
- An enquiring attitude
- Open-mindedness
- Fair-mindedness
- An intellectual work ethic
- Respect for legitimate intellectual authority

Bailin (2002) contends that the idea that thinking can be separate to knowledge is highly problematic and supports the idea that critical thinking is discipline specific like McPeck (1990) and Paul (2005). In fact, she is highly critical of identification of critical thinking as a skill and the procedural nature of descriptive frameworks which imply that thinking and problem solving can be undertaken following a series of steps that can be improved through practice (Bailin, 1999, 2002). From the point of view of this study, Bailin's emphasise on the dispositional side of critical thinking and the idea of discipline specificity are both important contributions to the theoretical conception of critical thinking for this study.

By contrast, Halpern (2001, 1998) contends that critical thinking is not domain specific, her model is based on two assumptions: that there are thinking skills that students can be taught and if these skills are applied, students will become more effective thinkers. Halpern's (1998) taxonomy of critical thinking skills is designed for teaching these skills to higher education students. Halpern's (1998) short taxonomy of critical thinking skills encompasses the following skills:

- Verbal reasoning skills
- Argument analysis skills
- Skills in thinking as hypothesis testing
- Likelihood and uncertainty
- Decision making

In addition, she acknowledges the dispositional side of critical thinking and describes this in terms of a critical thinker "exhibits following dispositions or attitudes: (a) willingness to engage in and persist at a complex task, (b) habitual use of plans and the suppression of impulsive activity, (c) flexibility or open-mindedness, (d) willingness to abandon non-productive strategies in an attempt to self-correct, and (e) an awareness of the social realities that need to be overcome" (Halpern, 1998, p. 452). Halpern's work raises two important questions: firstly, can critical thinking skills be taught and learned? Secondly, can critical thinking skills be learned in one context transfer to another? She contends that critical thinking skills can be improved by instruction and transfer to another context (Halpern, 2001). However, the evidence of transfer of critical thinking and the efficacy of critical thinking instruction remains mixed (Abrami et. al., 2015; Willingham, 2007).

One of the few developmental models of critical thinking is that of Kuhn (1999) which centres around the construct of metacognition. Kuhn argues that there is an inter-relationship between critical thinking and metacognition because critical thinking involves “self-awareness of one’s own thinking and reflection on thinking of self and others” which is a central part of metacognition (Kuhn & Dean, 2004, p. 270). Her framework views critical thinking in terms of meta-knowing which is comprised of metacognitive, meta strategic and epistemological (Kuhn, 1999). The evidence to support the concept of metacognition is weak, therefore Kuhn’s model of critical thinking presents a very narrow perspective (Bailin, 1999).

This section has critiqued the seven key frameworks for critical thinking in the literature. The following three aspects featured in the literature discussed above are of vital importance to this study: the dispositional side of critical thinking, the APA Delphi model of critical thinking skills and the discipline specific nature of critical thinking. This dispositional aspect is fundamental to the conception of critical thinking for this study. The two frameworks which encapsulate these key aspects are the APA Delphi model of critical thinking skills and the Facione framework for critical thinking dispositions. Therefore, these conceptual frameworks are integral to the model of critical thinking conceptualised by this study.

2.6 HOW IS CRITICAL THINKING TAUGHT & LEARNED IN HIGHER EDUCATION?

Critical thinking has been perceived one of the key outcomes of higher education (Dunne 2015; Facione 1990; Ennis 2016; Willingham, 2007). Critical thinking is high on the agenda of higher education due to the following drivers: European and

national government policies, learning outcome curriculum design, the neoliberal employability agenda and reports of graduates lacking critical thinking skills.

There was a resurgence of interest in critical thinking during the 1980s, particularly in the U.S. (Ennis, 2016). This was due in America to the 1983 National Commission on Excellence in Education report *A Nation at Risk* found that many 17-year-olds did not possess the necessary higher order thinking skills. “Nearly 40% couldn’t draw inferences from written material and only one-fifth could write a persuasive essay” (Willingham, 2007, p. 8). Following this report, courses designed to teach higher education students to think critically became common in American universities. Further, in a study carried out in America by Arum & Roksa (2011) which found that nearly half of the sample showed no significant gains in critical thinking after two years of college.

In the UK, the emergence of the conception of critical thinking as a generic transferable skill stems from government policy such as the 1996 Dearing report, which aimed to develop graduates who were more flexible for the labour market (Pithers & Soden, 2000). This trend of viewing critical thinking as an essential graduate skill for the employability is also evident in Ireland.

In Ireland, the conceptualisation of critical thinking as part of a set of generic skills essential for higher education students to possess began with the European higher education reform programme set out by the 1999 Bologna Declaration (McMahon, 2014). The Bologna process introduced the learning outcome approach to programme design and is linked to the emergence of a generic skills approach in Irish higher education, as evidenced by the *National Strategy for Higher Education to 2030* report (Department of Education & Skills, 2011). In this report, critical

thinking was described as one of the key characteristics of future graduates, as part of a set of future skills that “increased attention must be paid to core skills such as quantitative reasoning, critical thinking, communication skills, team-working skills and the effective use of information technology” (Department of Education & Skills, 2011, p.35). This Irish government strategy on generic skills in higher education was heavily influenced by the OECD research study called AHELO which investigated the assessment of learning outcomes at higher education level and framed the discourse of critical thinking as a generic skill (OECD, 2014). Critical thinking has invaded the discourse of higher education as Arum & Roksa (2011) state “It would seem that virtually no university mission statement, department evaluation procedure, or course outcome outline is complete without at least a casual reference to critical thinking” (Cited in Dunne, 2015, p. 88).

In response to the apparent deficit in critical thinking skills in higher education discussed above, a number of approaches emerged to develop critical thinking skills. This section examines critical thinking instruction and its efficacy in the higher education context. There are a number of different ways that critical thinking is taught in higher education. In most American colleges critical thinking course are offered as both stand-alone modules and integrated into the curriculum (Barnes, 2005). In the US and Canada, there is a growing trend for university students to meet a critical thinking requirement as part of their general education programmes (Halpern, 2001). Increasingly, critical thinking skills tests are being administered to American higher education students such as the Collegiate Learning Assessment (CLA) test is being widely used to assess college students critical thinking (Belkin, 2017). Furthermore, in the UK, generic skills programmes which encompass critical

thinking have become prevalent at undergraduate and postgraduate levels (Gilbert, Balatti, Turner, Whitehouse, 2004).

In terms of the types and approaches to teaching and critical thinking, Ennis (1989) outlined a useful typology of critical thinking courses into four types: generic, infusion, immersion and mixed. A generic course teaches critical thinking as a separate subject, an infusion course has critical thinking as an explicit aim within a subject discipline, an immersion course has critical as an implicit goal with subject matter teaching and lastly a mixed approach teaches critical as a separate goal in conjunction with subject matter (Ennis, 1989; Niu, Behar-Horenstein Garvan, 2013). Abrami et al. (2015) found that infusion courses on critical thinking were the most common. With regard to the teaching of critical thinking, there are two salient debates to consider: can critical thinking be taught and learned? What teaching approaches support the development of critical thinking?

Recent research supports the contention that critical thinking instruction can improve students critical thinking skills (Abrami et. al., 2015; Halpern, 2001; Huber & Kuncel 2016; Heijltjes, Van Gog, Leppink, Pas, 2014; Niu et. al. 2013). However, Willingham (2007) contends that critical programmes take a lot of time and effort for modest benefits and those which are generic are not very effective because as the research indicates that such programmes “primarily improve students’ thinking with the sort of problems they practiced in the program-not with other types of problems” (p.12). Willingham’s (2007) point is supported by research conducted by Abrami et. al. (2015) in a meta-analysis of 341 empirical studies on the impact of instruction on the development and enhancement of critical thinking skills and dispositions. They found that students critical thinking improved after instruction and that a generic critical thinking approach cohort had a 11.79% improvement,

while the content specific cohort experienced a 21.57% improvement in their critical thinking skills (Abrami et al. 2015, p. 298). It is significant that the discipline specific cohort demonstrated much greater improvements in critical thinking over the generic one, which further supports the argument that critical thinking should be taught and learned within the subject discipline.

Another meta-analysis of 31 empirical studies examining the impact of instruction on students critical thinking skills conducted by Niu et al. (2013) had similar findings to that of Abrami et al. (2015). They found that instructional interventions were effective in fostering students critical thinking skills and that discipline and length of time had an impact on the development of critical thinking (Niu et al., 2013).

In relation to the question of what teaching approaches support the development of critical thinking, Abrami et al. (2015) identified three teaching strategies which promoted the development of critical thinking; firstly, discussion based classes and secondly exposing students to real problems and examples and thirdly, mentorship. Further, Heijltes et al. (2014) in a study of discipline specific critical thinking for economics students, found that combining critical thinking instruction with practice activities significantly improved critical thinking in participants. Additional successful strategies for teaching critical thinking include, solving complex problems (Bailin, 2002; Willingham, 2007), case based learning (Kadourra, 2011), reflective blog writing (Bowen et al., 2010; Cain, Giraud, Stedman, Adams, 2012), problem based learning (Ozturk et al, 2008), concept mapping (Atay & Karabacak, 2012), problem solving online discussion forms (Jacob, 2012) and reflective writing (Chan, 2013; Naber & Wyatt, 2014).

One notable absence from the list is eportfolio, which the present study is investigating. There is a clear gap in the literature on the relationship between critical thinking and eportfolio. There are a few studies examining metacognition, self-regulation and inquiry in eportfolio based learning, these are discussed in the next chapter. In the absence of research on critical thinking and eportfolio, three somewhat similar strategies to support the development of critical thinking in students are examined in more detail here; reflective writing tasks, online discussion forums and blogs. A study conducted by Naber & Wyatt (2014) which investigated the effect of reflective writing interventions on the critical thinking skills and dispositions of undergraduate nursing students, found that the experimental group had a significant increase in the disposition of truth-seeking following the intervention. Similarly, Jacob (2012) in a study investigating the progress of critical thinking skills in undergraduate maths students using online discussion forums, found that students' critical thinking skills improved slightly. In addition, Cain et. al. (2012) found that using blogs as a reflective tool with graduate students, developed the critical thinking skills of self-regulation and explanation.

One approach to operationalising critical thinking in higher education undergraduate programmes has been through the development of rubrics. In the US, the American Association of Colleges & Universities (AAC&U) has operationalized its conception of critical thinking as “a habit of mind characterized by the comprehensive exploration of issues, ideas, artefacts, and events before accepting or formulating an opinion or conclusion” through the development of a critical thinking VALUE rubric (Rhodes, 2010, p.2). These rubrics are intended to inform programme and module learning outcomes and to enable the benchmarking of key skills such as critical thinking nationally.

To conclude this section, the literature would suggest that critical thinking can be taught and learned, effective strategies for developing critical thinking involve discussion, real problems, and mentorship. Of relevance to this study is that reflective writing, blogs and online discussion would seem to be effective strategies for developing critical thinking, these strategies are somewhat similar to the eportfolio intervention which is the focus of this study.

2.7 WHAT IS THE RELATIONSHIP BETWEEN DISCIPLINE CONTEXT AND CRITICAL THINKING?

The argument about whether critical thinking is a general or a discipline specific skill, competence or mindset, has been debated for decades. In 1989 and 1990, two theorists Robert Ennis and John McPeck, debated the issue of discipline and generalisability in a series of articles in the journal *Educational Researcher*. Ennis (1989) theorized a general approach to critical thinking in which critical thinking skills can be improved through instruction that need not be the subject or discipline context. By contrast, McPeck (1990) argued that critical thinking is closely associated with subject discipline, as thinking critically about something is thinking about specific content. Further, McPeck disputed the existence and transferability of generic thinking skills. In addition, Paul (2005, p.29) argued that critical thinking is rooted within academic disciplines, each discipline generates a form of thinking which is a contextualisation of critical thinking, for example “sociology is critical thinking applied to the study of human groups and group behaviour.”

Since the original generalist vs. specifist debate, the discourse has not evolved much. A similar debate took place in the journal *Higher Education Research &*

Development 2011-2013 between Tim Moore (2011, 2013) and Martin Davies

(2013), which covered the same ground as Ennis and McPeck twenty years earlier.

Except this debate had one difference, that Moore (2011, 2013) had carried out two empirical studies which found that academics from different disciplines had a varied conceptions of critical thinking which was reported as having multiple meanings in different discipline contexts.

Despite the fact that the academic debate with regard to critical thinking as a general or discipline specific skills has continued since the 1990s, the generalist point of view was widely accepted in higher education. This is evident in the proliferation of general critical thinking texts, generic reasoning modules and courses in informal logic in the U.S.A, U.K. and Australia (Robinson, 2011). However, there is one major flaw in the reasoning behind the generalist approach to critical thinking, and that is the issue of transferability (Bailin, 2002). The premise of the general approach to critical thinking is that it is a skill separate from subject content, which can apply in a variety of contexts. However, the research on transferability of critical thinking does not support this theory (Bailin, 2002). In an experiment designed to investigate transferability of critical thinking skills, Dumitru (2012) found that once critical thinking skills are formed in a domain they may not automatically transfer into another.

Teaching generic critical thinking skills does have some impact on improving students' critical thinking, as it seems evident from Abrami et. al. (2015) meta-analysis of the empirical evidence on the impact of instruction on the development of critical thinking. They found that a general critical thinking approach improved students' critical thinking skills by 11.79%, however a content specific approach had

far greater impact on improvement of critical thinking skills in students with an improvement of 21.57% (Abrami et. al., 2015).

Further evidence in support of discipline specific critical thinking instruction is provided by a study conducted by Tiruneh, Weldelassie, Kassa, Tefera, De Cock, Elen (2016) which investigated the integration of critical thinking skills into a first year physics course. The results showed that students showed a better performance on a domain specific critical thinking test after the intervention. Interestingly, the same students did not improve on a domain general critical thinking test after the intervention, which further supports the contention that critical thinking skills don't necessarily transfer into different contexts. In addition, Niu, Behar-Horenstein, Garvan (2013) found that students' subject discipline impacts on the efficacy of critical thinking instruction and that the development of critical thinking is subject specific. This growing evidence in support of discipline specific critical thinking explains the shift in research toward embedding critical thinking skills within subjects (Tiruneh et. al., 2016).

If critical thinking is best taught and learned within the context of a discipline, how does the disciplinary context shape the nature of critical thinking? As discussed above, Moore (2011, 2013) found in two qualitative studies that academics from different disciplines had a varied conceptions of critical thinking. In keeping with Moore's (2011, 2013) evidence of disciplinary variation with regard to critical thinking, Jones (2009a, 2009b, 2007) found, in two Australian studies of generic skills and disciplinary context, that the culture of a discipline influenced conceptions of critical thinking and that critical thinking had different meanings in different disciplines. Further, Jones (2009a, 2009b, 2007) provided evidence that critical

thinking was highly context dependent and was shaped by disciplinary culture and epistemology in which it is taught and learned. In fact, this disciplinary culture with regard to critical thinking was often tacit and explicit in teaching and learning (Jones, 2009a). As critical thinking was conceived very differently in each of the disciplines in the study which were history, physics, economics, medicine and law, Jones (2009b) suggests “re-disciplining” of generic skills such as critical thinking.

As a final comment on the issue of general or discipline specific critical thinking, returning to one of the key theoretical frameworks on critical thinking, the APA Delphi report (Facione, 1990), which found that “while CT skills themselves transcend specific subjects or disciplines, exercising them successfully in certain contexts demands domain-specific knowledge, some of which may concern specific methods and techniques used to make reasonable judgments in those specific”. This statement is a fusion of the two positions on critical thinking outlined above, nevertheless it acknowledges the importance of discipline context for the development of critical thinking.

This section has examined the literature in relation to discipline context and critical thinking. From the point of view of this current study, two elements are significant. Firstly, it would seem that critical thinking should be taught and learned within a discipline context. Secondly, disciplinary conceptions of critical thinking vary and this may impact on how critical thinking manifests itself within the discipline of sociology in which this study is situated.

2.8 WHAT IS THE NATURE OF CRITICAL THINKING WITHIN THE SUBJECT DISCIPLINE OF SOCIOLOGY?

In the previous section, it was established that there is significant evidence that discipline has an impact on how critical thinking is defined, taught and learned within a subject discipline. This section examines the nature of critical thinking within the discipline of sociology.

In the discipline context of sociology, critical thinking is perceived as important skill for students to develop within the subject matter. Drawing on Jones' (2009a, 2009b, 2007) research discussed in the previous section, critical thinking within sociology has a distinct discipline oriented conception. In the sociology literature, critical thinking is often linked with the concept of sociological imagination (Buechler, 2008; Eisen, 2012; Bidwell, 1995; Grauerholz & Bouma-Holtrop, 2003; Machum & Clow, 2015). The concept of sociological imagination is a fundamental disciplinary theoretical framework, which was introduced by C. Wright Mills in his 1959 book *"The Sociological Imagination"*. In it, Mills (1959) defined the sociological imagination as "a quality of mind that will help them to use information and to develop reason in order to achieve lucid summations of what is going on in the world and of what may be happening within themselves." In other words, by critically assessing the world and applying it oneself, one can develop sociological imagination. This development of a sociological imagination in students is one of the primary aims of undergraduate sociology degrees (Bidwell, 1995; Eckstein, Schoenike, Delaney, 1995; Noy, 2014; Misra, 2000). Clearly, the concepts of sociological imagination and critical thinking are interlinked, and in fact Buechler (2008) argues that sociology is inherently critical because thinking sociologically requires thinking critically.

Two theoretical models of critical thinking in the sociology context are widely cited in the literature; Grauerholz & Bouma-Holtrops' (2003) critical sociological thinking model and Geertsen's (2003) referential thinking approach. In a framework which brings together discipline specific critical thinking following McPeck's ideas and Mills sociological imagination, Grauerholz & Bouma-Holtrop (2003) have developed a definition and approach to critical thinking for sociology. They define critical sociological thinking "as the ability to logically and reasonably evaluate an argument or problem while maintaining an awareness of and sensitivity to social forces and contexts" (Grauerholz & Bouma-Holtrop, 2003, p.485). Further, Grauerholz & Bouma-Holtrop (2003) created a scale or rubric for the evaluation of critical sociological thinking, which has the following indicators:

- Uses examples
- Examples are relevant to argument
- Reasoning
- Bias
- Mentions two sides of an issue
- Indicates awareness of historical contexts
- Indicates awareness of cross cultural contexts
- Uses sociological concepts to illuminate and analyse the issue
- Demonstrates critical thinking
- Demonstrates sociological imagination

Grauerholz & Bouma-Holtrop (2003) argue that critical thinking within sociology requires sociological knowledge and awareness and employs the sociological imagination. This framework is very valuable as it addresses the disciplinary context and epistemology which are unique to sociology.

A second model which examines critical thinking in the context of sociology is Geertsen (2003) which categorises different forms of higher level thinking, one of which is referential thinking. According to Geertsen (2003) referential thinking consists of conceptualising and contextualising by breaking down concepts and identifying links to the wider context. Geertsen (2003) argues that referential thinking “has a special relevance for a contextually-orientated discipline such as sociology” (p.13). Although it is useful as a contextualised approach to critical thinking in sociology, this model is overly detailed and would be very challenging to use in practice.

Developing a sociological imagination is a fundamental aim of sociology in higher education. One of the key approaches to developing a sociological imagination is to apply theory to real world examples and everyday life (Bahami, 2016; Bidwell, 1995; Eisen, 2012; Eckstein et al., 1995; Misra, 2000; Noy, 2014; Rickles, Schneider, Slusser, Williams, Zipp, 2013). It is claimed that students develop a greater understanding of and appreciation for sociology if they are able to relate it to their own experiences (Misra, 2000). It is important that students are given the opportunity to develop a sociological imagination through practice and application (Bidwell, 1995). Therefore, the application of theory to real life is fundamental to the development of critical sociological thinking.

The prevalent approach in sociology toward critical thinking instruction is an embedded one. This is evident in many articles from the journal *Teaching Sociology* which shows a wide range of approaches to embedding critical thinking and sociological imagination into the teaching and learning of undergraduate sociology. Successfully encouraging the development of critical sociological thinking through

innovative assessments such as photography, journal writing, life diaries, clickers, online activities, critical essays are evident in the literature (Bahami, 2016; Eisen, 2012; Mollborn & Hoekstra, 2010; Noy, 2014; Rickles et al., 2013). However, there are no journal articles which examine eportfolio practice within the discipline context of sociology and no research examining critical sociological thinking in eportfolio based learning.

This section has examined the literature in relation to critical thinking in the sociology discipline context. From the point of view of the current study, three elements are of relevance; the theory of critical sociological thinking, the importance of the sociological imagination and the application of theory to real life.

2.9 THE MODEL FOR CRITICAL THINKING WITHIN THIS STUDY

Three distinct theoretical approaches inform the conception of critical thinking in this thesis; Facione & Facione's (2008) definition of critical thinking and model of dispositions, the APA Delphi (Facione, 1990) framework of critical thinking skills and Grauerholz & Bouma-Holtrops' (2003) critical sociological thinking model. This study places itself firmly in the normative tradition of critical thinking which centres on values, quality of thinking and formulation of evaluative judgement. As descriptive approaches to critical thinking are overly procedural and mechanistic; they reduce the complexity of thinking to computer like processes which do not take into account the affective aspect of critical thinking (Bailin, 1999; Fischer & Scriven, 1997). Therefore, this study draws on three theoretical approaches from the normative tradition to critical thinking to inform the conception of critical thinking in this thesis.

Further, this study argues that critical thinking should be taught and learned within a discipline context, following the ideas of Bailin (1999), McPeck (1990) and Willingham (2007). As there is growing evidence, that a discipline embedded approach to critical thinking can be more effective than a generic skills approach (Abrami et. al., 2015; Niu, Behar-Horenstein, Garvan 2013; Tiruneh, Weldelassie, Kassa, Tefera, De Cock, Elen, 2016). Therefore, this study adopts a discipline embedded approach to the development of critical thinking. This is operationalized in this study, through the use of a developmental eportfolio embedded into an intermediate sociology model. Finally, the importance of discipline context and in the context of study the discipline of sociology is emphasised by Grauerholz & Bouma-Holtrops' (2003) model of critical sociological thinking, which situates critical thinking strongly with the discipline of sociology.

To elaborate, the definition of critical thinking for this study is that “critical thinking is a judgement process. Its goal is to decide what to believe and/or what to do in relation to the available evidence, using appropriate conceptualizations and methods and evaluated by the appropriate criteria” (Facione & Facione, 2008, p.2). The rationale for adopting this definition is that it is evaluative, holistic and brings together the key elements of judgement, standards and attitude. Further, the motivation to think critically is fundamental to this study, and this clearly set out in the Facione (2000) model of seven dispositions towards critical thinking which are:

- Inquisitive
- Systematic
- Judicious
- Truthseeking

- Confident in reason
- Open-minded
- Analytical

This dispositional aspect is fundamental to the conception of critical thinking for this study. In addition, the clearly defined skills of critical thinking set out by the APA Delphi (Facione, 1990) model is adopted because it is an inclusive and robust framework which sets out the six critical thinking skills of interpretation, analysis, evaluation, inference, explanation and self-regulation.

In summary, the model of critical thinking chosen for this case study is that critical thinking is a judgement process which enables decision making, it is encompassed by the skills of interpretation, analysis, evaluation, inference, explanation and self-regulation and the dispositions of being systematic, judicious, truth-seeking, confident in reason, open-minded and analytical (see figure 8 below). The reasons for this approach have been thoroughly presented above. It is further assumed that critical thinking is strongly rooted within the discipline context.

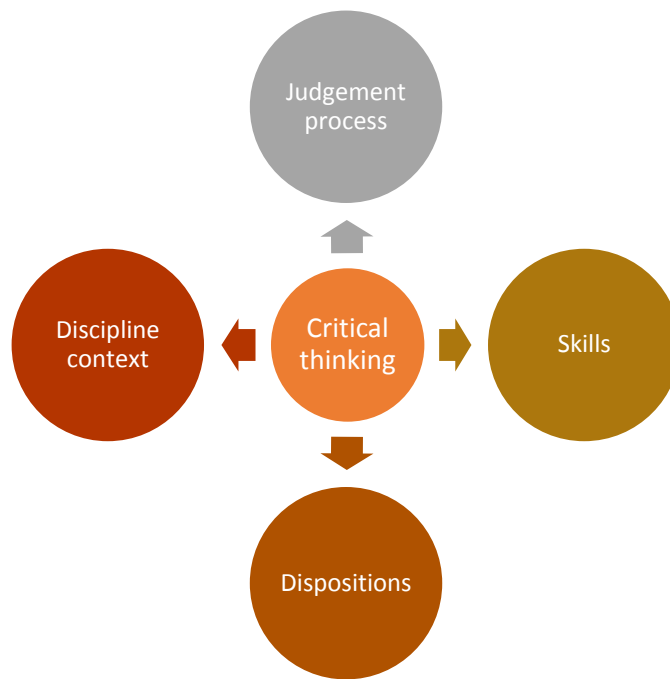


Figure 8 Model of Critical Thinking

2.10 CONCLUSIONS

This chapter has examined and critiqued the literature surrounding the definitions, frameworks, practice and purpose of critical thinking in the context of higher education.

The chapter concludes with the critical thinking theoretical framework for this study, which forms a key theoretical foundation for this study, in conjunction with the eportfolio theoretical framework presented in the next chapter.

The chapter began with an examination of the historical roots of critical thinking, and traced its evolution from Ancient Greece to modern times. What is evident from an analysis of the critical thinking literature is that there is no agreed definition and that are two broad theoretical approaches to critical thinking: the normative and the descriptive. This study places itself firmly in the normative tradition of

critical thinking. Further, the question of whether critical thinking is best acquired within a subject context or generally is contentious in the literature, I argue that critical thinking skills should be developed within a discipline. For the discipline of sociology, critical thinking is shaped by the discipline characteristics of sociological imagination and the application of theory to real life. It is evident from the analysis of recent research on the teaching and learning of critical thinking in higher education, that critical thinking instruction, which includes real-world problems, reflective writing and discussion, can improve students' critical thinking skills.

In the next chapter, the analysis of the eportfolio literature is presented and the relationship between eportfolio and critical thinking is investigated. The lack of empirical research on eportfolio and critical thinking is highlighted in chapter 3. The theoretical links between eportfolio and critical thinking are further analysed and developed which lay the foundations for the critical folio thinking theoretical framework for the study which was presented in chapter 1.

3 CHAPTER THREE WHAT IS AN EPORTFOLIO? DEFINITIONS, PRACTICE AND PURPOSES

3.1 INTRODUCTION

This chapter examines the literature surrounding eportfolio definitions, practice and purpose in the higher education context. An analysis of the literature is presented and the chapter concludes with the eportfolio theoretical framework for this study, having argued in some detail for the choice of frame.

In their seminal article which systematically reviewed eportfolio research since 1996, Bryant & Chittum (2013) found that an increased focus on empirical research on eportfolio practice was needed to create evidence for its adoption. They argue that “future studies should continue to examine student development of reflective skills, critical thinking skills, deeper levels of learning and student engagement in the context of eportfolio” (Bryant & Chittum, p.195). This research study directly addresses the clear gap in the eportfolio research in relation to critical thinking, identified by Bryant and Chittum (2013).

3.2 METHODOLOGY

This subsection provides an overview of the methodology used to conduct the analysis of the literature on eportfolios relevant to this project. The broad approach taken was that of a systematic literature review following the Evidence for Policy and Practice Information and Co-ordinating (EPPI) Centre’s (2010) ‘Methods for Conducting Systematic Reviews’ that provided the specific structure adopted for this literature analysis. Whilst a systematic methodology was followed, this

literature review takes a targeted approach focusing on areas directly related to the research question of the study.

3.2.1 Guiding questions

Systematic literature reviews are designed around answering key questions about the literature (EPPI, 2010). This literature review sought to address the following guiding questions:

1. What are the drivers for eportfolio adoption in higher education?
2. What is an eportfolio?
3. What theoretical frameworks are there for eportfolio practice?
4. What is the relationship between critical thinking and eportfolio?
5. What is the nature of learning with an eportfolio in higher education?
6. How are eportfolio being used in Irish higher education?
7. What is the learner experience of using an eportfolio?
8. How are eportfolio being used in online distance higher education?
9. How does the subject discipline impact on learning with an eportfolio?
10. Is there sociology discipline specific eportfolio practices?

These guiding questions were shaped by the overarching research question of the study: can eportfolio enhance the nature of the learning experience and the development of critical thinking among online distance learners?

3.2.2 Scope of Literature Review

The scope of literature review has the following boundaries: a deliberate focus on literature published since 2005, a focus on literature published in English, a

limitation to texts available in full text in the library databases or online, a focus on the use of eportfolio in higher education contexts, and finally the inclusion of peer-reviewed journal articles only, academic books and policy documents.

3.2.3 Search Terms

The second stage of a systematic literature review is to identify search terms which will strike a balance between sensitivity, finding all useful studies in an area of interest, and specificity, making sure the search results are relevant to the guiding questions. (See figure 9 for a sample of the search terms used.) The databases used to conduct the literature search were: Proquest, British Education Index, Education research complete, Sage journals, Scopus, Web of science, ERIC, Google Scholar, The PEARL eportfolio database <http://eportfolio.aacu.org/>.

Search Terms	
Eportfolio	Personal learning environment
Digital portfolio	Virtual portfolio
Learning portfolio	Web portfolio
Portfolio	Webfolio
Eportfolio and criticality	e-folio
Eportfolio and critical thinking	e-portfolio
Eportfolio and critical thinking skills	Eportfolio and studying sociology
Digital portfolio and criticality	Electronic portfolio
learner experience of using an eportfolio	Eportfolio and online learning
Learning with an eportfolio	Eportfolio and Ireland
Portfolio learning and critical thinking	Eportfolio and distance learning
Eportfolio and distance learners	Eportfolio and flexible learners
Eportfolio and distance education	Eportfolio and higher education
Eportfolio and learning	Learning portfolio and critical thinking
Digital portfolio and critical thinking	Portfolio and criticality

Figure 9 Search Terms

3.2.4 Compiling the Database of Literature for Review

The third stage of conducting the systematic review was finding the relevant literature and compiling a database of relevant results. Literature found in the

selected databases was collated using the reference management software RefWorks. As not all relevant results were necessarily picked up by electronic databases the following avenues were also explored, and additional results added to the database, following the EPPI-Centre (2010) recommendations: drawing on personal contacts, authors, and experts in the field; utilisation of general search engines such as Google Scholar; use of citation tracking or pearl growing and manual searching of key journals such as the International Journal of Eportfolio.

3.2.5 Inclusion and Exclusion

Each study was assessed by reading the title and abstract for relevance to the inclusion criteria and to the guiding questions for the literature review.

Inclusion:

- Deliberate focus on literature published since 2005
- Published in English
- Texts available in full text
- Higher Education context
- Peer reviewed- journal articles
- Academic books
- Critical thinking
- Online Distance
- Student perspective
- Sociology related
- Policy documents

Exclusion:

- Focused on technology or platform testing
- Any other education context-not HE

- Grey literature
- Not peer reviewed

At that stage our sample of literature was considered sufficient for the purposes of this study and no further searches were conducted (See Appendix 7 for eportfolio research database).

3.3 A BRIEF HISTORY OF PORTFOLIOS

The word portfolio has its origins in the eighteenth century from the Italian ‘portafogli’ meaning to carry loose papers (Oxford English Dictionary, 2017). Historically, portfolios were used by artists, musicians, writers and architects to show carry and protect their work (Bryant & Chittum, 2013). In the higher education context, portfolio based assessment began in the 1980s in the U.S.A., particularly in the disciplines of teacher education, art and English and used by students to collect their work and reflect on what they had learned (Lorenzo & Ittelson, 2005). In the early 1990s, electronic portfolios emerged, harnessing the new technologies of the digital revolution, in conjunction with the growth of learner centred and constructivist learning theories and combined with a growing attention on quality and the measurement of learning through outcomes based assessment (Eynon & Gambino, 2017). These factors have led to the spread eportfolio practice in higher education around the world.

3.4 WHAT ARE THE DRIVERS OF EPORTFOLIO ADOPTION IN HIGHER EDUCATION?

This study identifies three drivers of eportfolio adoption in the higher education literature: government policy, eportfolio communities, and funding for eportfolio

practice and research. Eportfolio are common in American higher education, with 57% of colleges using eportfolio (Eynon & Gambino, 2017). Similarly, in the UK, a survey carried out in 2014 highlighted that 78% of universities now have a centrally supported e-portfolio tool (UCISA, 2014). However, in Ireland, there has been a relatively slow pace of adoption of eportfolio. A recent report carried out by the Irish National Forum for the Enhancement of Teaching and Learning found that less than 10% of Irish higher education students were engaged in portfolio based assessment (National Forum, 2016).

This author argues that the slow pace of adoption eportfolio in Ireland is due to the absence of the three drivers of eportfolio adoption in Irish higher education, there was a lack of government policy drivers, no distinct Irish eportfolio community, and a scarcity of funding.

3.4.1 Government policy drivers

Ireland

What is notable in Ireland is the absence of government policy driving the adoption of eportfolio in higher education, compared to the government policy drivers in the UK, U.S., Australia and New Zealand. In Ireland, the current mission of higher education, as stated in the National Strategy for Higher Education to 2030 (The Hunt Report) is to widen participation, increase student numbers, improve retention and become much more flexible (DES, 2011). In response to this strategy, the National Forum for the Enhancement of Teaching and Learning was created in 2012. One of its objectives is to build the digital capacity of Irish higher education. The National Forum's report (2015, p.ix) *A ROADMAP FOR ENHANCEMENT IN A DIGITAL WORLD 2015-2017* which recommends that Ireland "develop a consistent,

seamless and coherent digital experience for students in Irish higher education and actively engage with students and teachers to develop their digital skills and knowledge". The increased focus on key skills in Ireland is due to the introduction of the National Framework for Qualifications (NFQ) in 2003, which reframed learning achievements and award classifications and levels. Standards for learning achievement levels were framed in the context of a person's knowledge, skill and competence (QQI, 2015). There is growing evidence that eportfolio based learning has the potential to support many of these higher education objectives, however to date there has been minimal engagement by Irish higher education institutions (Baird et. al. 2016; Buente et. al. 2015; Clarke & Hornyak, 2012; Eynon & Gambino, 2017; Lambe McNair Smith, 2013; Morreale et. al. 2017).

The (2015) NMC Horizon Report-Higher Education in Ireland offers an explanation for the slow pace of eportfolio adoption in Irish higher education; a lack of sufficient institutional resources and infrastructure to effectively adopt and integrate new technologies, outdated infrastructure, inadequately resourced virtual learning environments and lack of investment in new and emerging media.

There are indications that pockets of Irish higher education institutions are beginning to engage with eportfolio. A recent Irish national project funded by the National Forum for the Enhancement of Teaching and Learning called *Eportfolio Hub* carried out a faculty survey which found that 31% of respondents were only beginning to use eportfolios which indicates an increasing interest in eportfolios in Irish higher education (Eportfoliohub, 2016). Dublin City University is the exception to this slow adoption of eportfolios in Ireland, with the introduction of a campus wide learning portfolio called Loop Reflect for 16,000 students in May 2017(O'Brien, 2017).

UK

In the UK, one of the major drivers of eportfolio adoption was the government policy on Personal Development Planning (PDP) which was first featured in the Dearing Report (Dearing, 1997) and recommended the introduction of student progress files “a means by which students can monitor, build and reflect upon their personal development” (Dearing Report, 1997). In 2001, the Higher Education Quality Assurance Agency (QAA) built on this recommendation and published guidelines and a minimum level of institutional engagement with PDP. In response to the QAA policy on PDP, many UK Universities began using eportfolio tools to support PDP. This was a key driver for institutional eportfolio initiatives (Joyes & Gray, 2010; Strivens & Ward, 2010). Subsequently, the Higher Education Funding Council (HEFCE) produced an e-learning strategy in 2005, which had as an objective the electronic support for recording learning achievement and personal development planning (Stefani, Mason, Pegler, 2007).

The HEFCE directed the Joint Information Systems Committee (JISC) and the Higher Education Academy (HEA) to examine eportfolio practice (Stefani et al. 2007). In response JISC produced several widely cited resources: *the Effective Practice with Eportfolio Guide* (2008), *The Eportfolio Implementation Toolkit*, (2012), and *Crossing the Threshold: Moving Eportfolio into the Mainstream* (2012). Since 2012, JISC have focused less on eportfolio tools but have focused on the application of eportfolio practice to future readiness and employability (Chatterton & Rebbeck, 2015).

Interestingly in the UK, the government policy on providing a progress file was directed at all levels of education, at second level the policy was to provide a “personalised online learning space for every learner that can encompass a personal

portfolio” (DFES, 2005). In light of this policy a large scale study called *Impact study of eportfolio on Learning: Becta* (Hartnell-Young, 2007) was commissioned to investigate the potential of eportfolios to support learning.

Europe

In Europe, the policy drivers for eportfolio adoption was the philosophy of lifelong learning, and the aim to promote mobility and common recognition of qualifications within the EU, driven by the Bologna process. The overarching goals of Bologna were to enable mobility, recognition of qualifications by making the education systems more compatible (European Commission, n.d). In practical terms, the Bologna process led to the development of a three-cycle degree system, the introduction of quality assurance mechanisms, the European Credit Transfer system, and the establishment of National Frameworks of Qualification (McMahon, 2014). In conjunction with the Bologna process, the European Commission began to develop guidelines for implementing lifelong learning in the EU, with a specific aim of creating what has become known as a knowledge based economy (Chen, 2009). In order to facilitate the transparent recognition of skills and qualifications in Europe, the Europass was created in 2000. The Europass is an eportfolio which enables the user to create, collate and store five key documents: a CV, a Language Passport, mobility records, certificate supplement and a diploma supplement. The Europass makes the users skills and qualifications clearly and easily understood in Europe (Europass, n.d.).

USA

The USA has a decentralised education system, in which the Department of Education devolves policy and responsibility for education to the individual states,

and accreditation of higher education to recognised accreditors (Education USA, 2015). As such there is no central higher education policy, American universities operate with a high degree of autonomy and independence. However, there is evidence of a strong engagement with eportfolios in American higher education; in the ECAR (2015) *Survey of students and IT*, over half of U.S. colleges were using eportfolios. The policy of accreditation bodies has been one of the key drivers of eportfolio adoption in the US, in 2007 the Association of American Colleges and Universities (AAC&U) named integrative learning as one of four key outcomes for higher education, eportfolio practice was identified as a high impact practice that can facilitate integrative learning (Eynon & Gambino 2017; Reynolds & Patton, 2014). In the USA, 90% of teacher preparation programmes use portfolios to assess their students, the American National Council for the Accreditation of Teacher Education has been a driving force in increasing eportfolio use in teacher education (Parker, Ndoeye, Ritzhaupt, 2012).

Australia & New Zealand

From a policy perspective in Australia, eportfolios are closely linked with employability skills and graduate attributes, and this was a major driver of eportfolio adoption in Australian higher education. The Australian government sought to promote lifelong learning and learners' engagement with modern technologies that encouraged personal, flexible, collaborative learning (Coffey & Ashford-Rowe, 2014). Eportfolio were viewed as a way to assess and report employability skills attained in the newly created National Diploma Supplement in 2007 (Australian Eportfolio Project, 2008). As such the Australian Learning and Teaching Council (ALTC) commissioned a government funded intensive research project called the *Australian Eportfolio Project (AeP)* to examine the use of

eportfolios by university students in Australia, from 2007-2010 (Hallam & Creagh, 2010). The AeP produced three reports, which guided Australian universities' approaches to eportfolio adoption. The AeP emphasized the need for strong academic integration of eportfolio into the teaching and learning disciplinary contexts, focusing on the pedagogical affordances of eportfolio (Coffey & Ashford-Rowe, 2014).

In 2006, New Zealand motivated by the dual policy aims of promoting lifelong learning and developing open source platforms, the Tertiary Education Commission funded through its elearning Collaboration Development Fund the creation of an eportfolio platform for the Tertiary sector (Maher & Gerbic, 2009). The result of this project was the platform Mahara, an open source eportfolio platform, which remains one of most utilised eportfolio platforms globally. Using the Mahara platform, every educational institution in New Zealand has an eportfolio called MyPortfolio (MyPortfolio, n.d). The scale of eportfolio adoption in New Zealand is truly widespread.

3.5 EPORTFOLIO COMMUNITIES

Communities of practice are of central importance to successful eportfolio implementation and adoption. In countries where strong vibrant communities developed there is a clear link to widespread eportfolio practice. One of the most effective ways of fostering scholarship and research in higher education is to form a community. This concept is based on Wenger's (1998, p.6) theory of community of

practice which is defined as “a group of people who share a concern or a passion for something they do, and learn how to do it better as they interact regularly.”

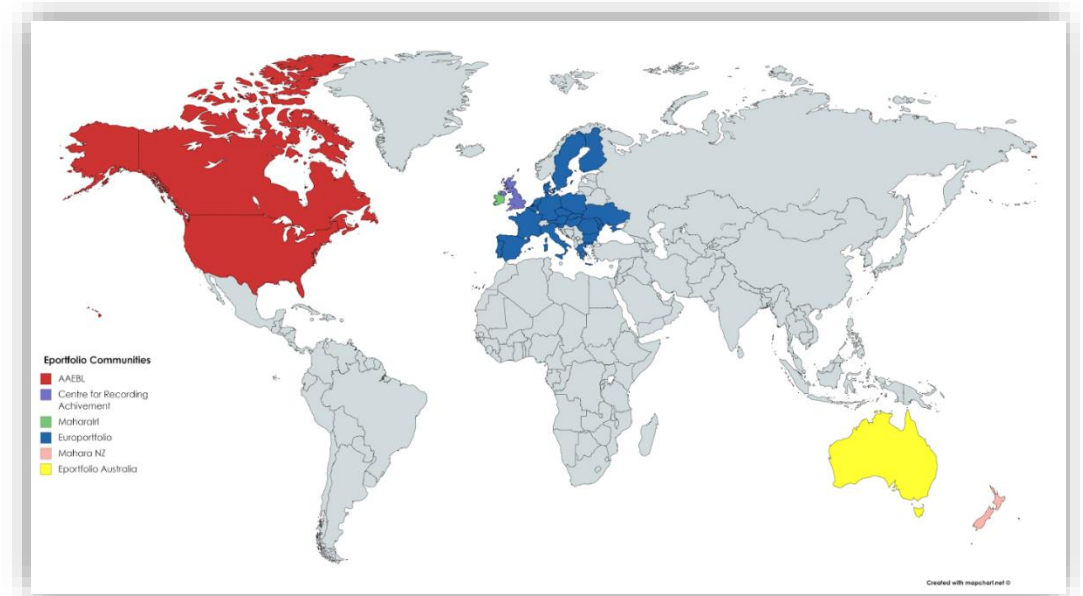


Figure 10 Eportfolio communities around the world

There are a number of vibrant eportfolio communities around the world, they are located in countries in which there were strong policy, funding and professional accreditation drivers (See Figure 10 above).

In the USA and Canada, the Association for Authentic Experiential and Evidence based Learning (AAEEBL) was founded in 2009 and has hundreds of members based in higher education. AAEEBL holds several annual conferences and has a journal *The International Journal of Eportfolio* (AAEEBL, 2017). The AAEEBL community is very active and promotes evidence based approaches to eportfolio practice which focus on pedagogy.

In Europe, the European Network of Eportfolio Practitioners and Researchers (Europortfolio) was created in 2013 funded by the European Commission as a Lifelong Learning project and replaced its predecessor EIFEL. The funding ended in

2015, however the community continues and holds a large annual European conference called Epic (Europortfolio, n.d.).

In Australia, as part of the Australian eportfolio project a community was founded, an annual conference Australian Eportfolio Symposium was created. The AeP noted that communities of practice and a whole sectoral approach increased the number of successful implementations (Hallam & Creagh, 2010).

In the UK, the Centre for Recording Achievement (CRA) operate as an associate of the Higher Education Academy and has the specific aim of supporting the higher education community implementing progress files and personal development planning.

In Ireland, there is an emerging eportfolio community. In January 2017, a higher education community of practice for eportfolio called Maharalrl was formed, currently at the time of writing in July 2017, there are twenty-five members from seven Irish higher education institutions (Maharalrl, 2017).

Sustainability is an issue for communities of practice, a previously prominent community the Inter/National Coalition for Electronic Portfolio Research has ceased to exist and would appear to have been replaced or subsumed by AAEEBL.

3.6 FUNDING

Government funding for eportfolio practice and research is fundamental to widespread eportfolio adoption at higher education level. The European Union has funded over 15 research, development and practice based eportfolio projects since

2001, initially through the lifelong learning programme and then through Erasmus+. Ireland has participated in four of these funded projects, two at higher education level called the online interactive European Language Portfolio-(LOLIPOP) 2004-2007 and Empowering Eportfolio Processes (EEP) 2016-2018. At post-primary education level, Ireland was involved in the Eufolio project 2013-15, and is currently involved in the follow up project ATS2020. There are clear policy and funding drivers for eportfolio adoption at European Union level, and yet this doesn't seem to have significantly impacted on the Irish higher education engagement with eportfolio practice.

In the US, the US Department of Education using its Fund for Innovation in Post-Secondary Education (FIPSE) granted \$700,000 to the Connect to Learning: eportfolio Resources and Research project (2011-2014) creating a network of 24 colleges to develop campus-tested strategies for building effective ePortfolio initiatives. (Catalyst for Learning, n.d.) This project has generated significant evidence of the impact of eportfolio based learning and developed valuable case studies and resources for higher education. Catalyst for Learning is an excellent example of the impact of funding on practice and adoption of eportfolio.

In Australia, the Australian Eportfolio Project (AeP) 2007-2010, was funded by the government through the Carrick Institute for Learning and Teaching in Higher Education. This research study investigated the approaches to eportfolio use by students in Australian universities in order to investigate the scope, penetration, reasons for use and implementation of eportfolio (Hallam & Creagh, 2010). The project provided a snapshot of eportfolio use in Australia at the time and identified policies and standards to foster eportfolio use at higher education (Hallam & Creagh, 2010). As part of the project an eportfolio community was founded and

annual conference was created, this has fostered a vibrant eportfolio community in Australia.

In the UK, the Joint Information Systems Committee (JISC) who is funded by the UK higher education funding councils and by the Department of Education to “to enable people in higher education, further education and skills in the UK to perform at the forefront of international practice by exploiting fully the possibilities of modern digital empowerment, content and connectivity” (JISC, 2017). Since 2008, JISC has led and funded six research and development projects raising awareness, support practice and building an evidence based approach for eportfolio practice at higher and further education level. The impact of JISC’s work is significant with 78% of UK Universities using eportfolio (UCISA, 2014).

In Ireland, there has been only one government funded higher education eportfolio research and practice project called the *Eportfolio Hub*, this was funded through the Teaching and Learning Enhancement Fund 2016 and aimed to “create an eportfolio framework that will encourage and enable academic staff to incorporate eportfolio into their programmes, in order to empower students, allow for more authentic forms of assessment and foster a student-centred approach to learning” (Eportfoliohub, 2016). This project was small in scale by comparison to those carried out in Australia, US and the UK and so far has had little impact on eportfolio adoption in Irish higher education.

Government funding for eportfolio practice and research is fundamental to widespread eportfolio adoption at higher education level. Eportfolio practice is unable to develop, without the necessary resources to develop the eportfolio platform infrastructure, pilot projects, and conduct research on eportfolio practice.

3.7 WAVES OF EPORTFOLIO RESEARCH AND PRACTICE

There are two distinct waves in the literature on eportfolio practice, the first wave from 1995-2010, and a second wave from 2011-2017. The first wave of eportfolio research and practice was quite focused on the technology of eportfolio and implementation (Penny Light, Chen, Ittleson, 2012). The second wave is focusing on eportfolio pedagogy, theoretical frameworks and evidence of impact on student learning.

In the next section, eportfolio adoption is analysed through the lens of the Gartner Hype Cycle, see figure 11 below (O'Leary, 2008).

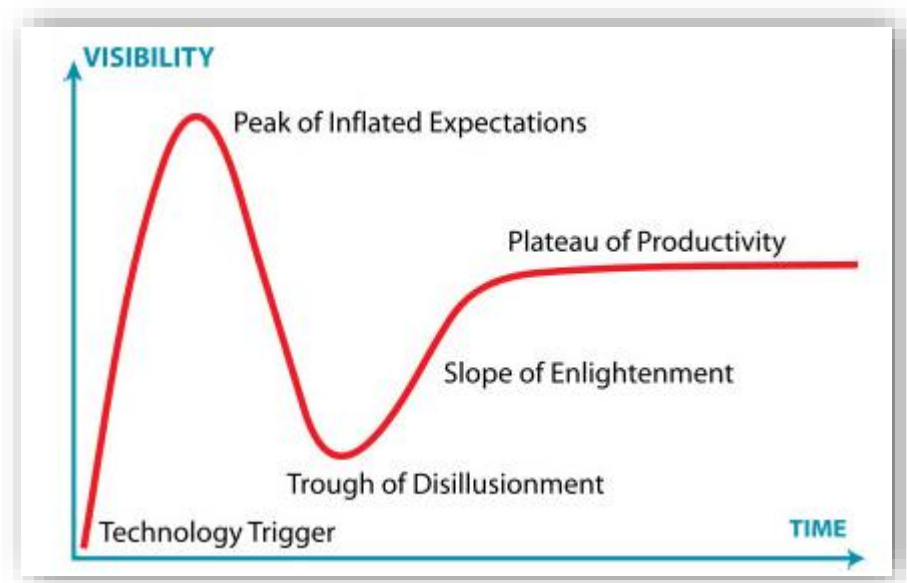


Figure 11 Gartners Hype Cycle

The technology trigger occurred in the early 1990s with the increasing use of computers in education, the emergence of digital media and the internet which prompted the emergence electronic portfolios (Penny Light, Chen, Ittleson, 2012). The peak of inflated expectations was reached by 2008, with eportfolio use becoming widespread in the USA, UK, Australia, Europe and New Zealand and

widespread enthusiasm in higher education for the latest edtech tool. There followed a trough of disillusionment where the technology did not live up to its promise and became unfashionable, which is particularly evident in the UK, where there was a noticeable decline in funding and research into eportfolio since 2011 (O’Leary, 2008).

Currently, eportfolios are reaching a plateau of productivity, the benefits are tried and tested and a growing number of organisations are adopting them (O’Leary, 2008). This pattern is evident in a Google Trends search of the term “eportfolio” from 2005-2017 and the interest by region in eportfolio over the same period matches the countries with the most engaged eportfolio communities of practice (See Figures 12 & 13 below).

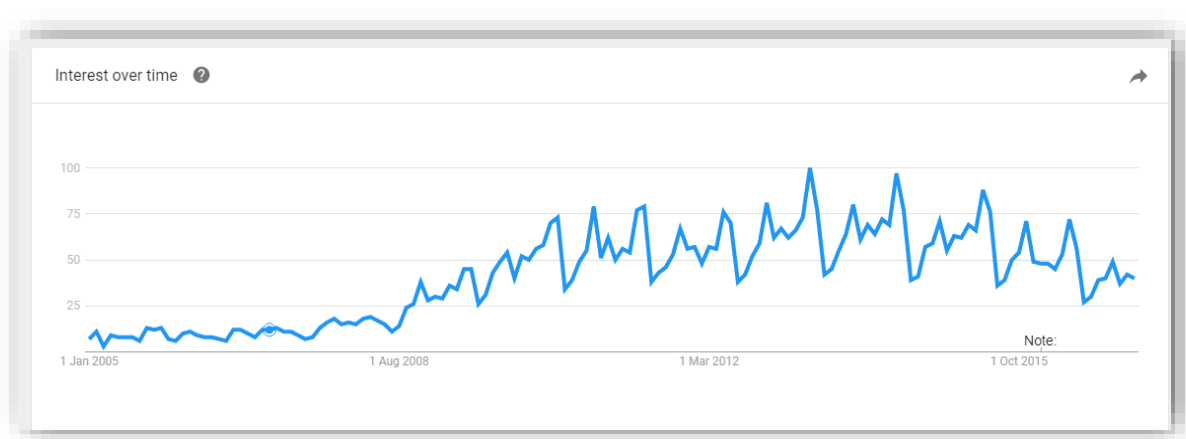


Figure 12 Google Trends search for eportfolio 2005-2017 interest over time

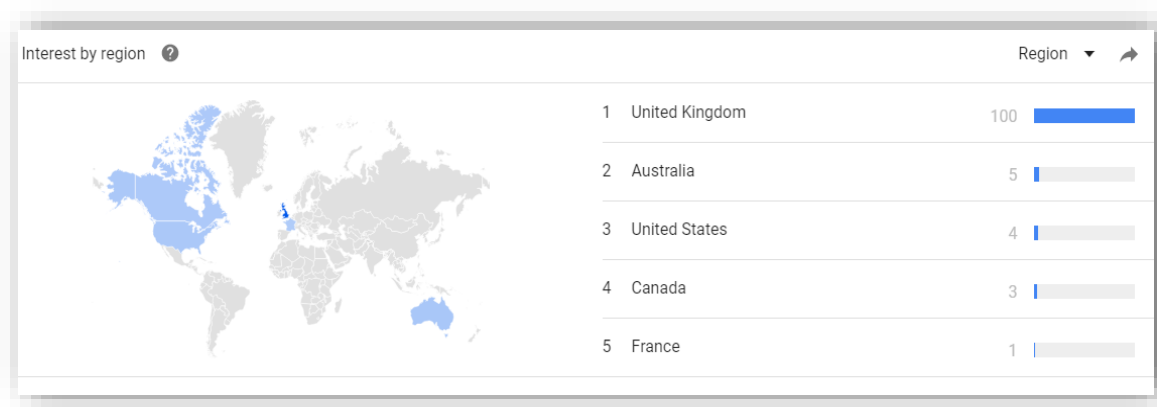


Figure 13 Google Trends search for eportfolio 2005-2017 Interest by Region

Eportfolio are currently experiencing a second wave of research and practice. This renewed interest in eportfolio is due to the emergence of digital badges and massive open online courses (MOOC). Digital badges are a “visual representation of an accomplishment, achievement or skill acquisition” (Educause, 2017). In Notre Dame University, a team of researchers led by Alex Ambrose have been exploring pairing digital badges with eportfolios. He argues that “the eportfolio platform is not only best optimized to take stock and provide evidence for earning digital badges, it is the most logical space to support or showcase them” (Ambrose, 2014, p.8).

This intersection between digital badges and eportfolio emerged from a Notre Dame pilot study which examined the design and implementation of digital badges in a MOOC environment (Ambrose, Anthony, Black, 2016). One of key outcomes of the study was the finding that if digital badges and eportfolios were paired correctly, they could “unlock the power of evidence behind the badge and optimize a student’s ability to collect an available body of projects and the process to make and prove a competency claim” (Ambrose, Anthony, Black, 2016, p.18). According to Eynon & Gambino (2017) the pairing of eportfolio and digital badges is a future direction for eportfolio research and practice.

3.8 WHAT IS AN EPORTFOLIO?

An eportfolio can be defined in many ways as it can fulfil many functions, it can be a tool or technology, a practice, a pedagogical model, an assessment method and a framework for learning. As Chen & Black (2010, p.1) argue that “the concept of an

e-portfolio is multifaceted — it is a technology, a pedagogical approach, and a process, as well as a product.” (See figure 14).



Figure 14 What is an eportfolio?

Through this literature search, thirty definitions of eportfolio have been found. (See appendix 6) The four most commonly cited definitions in the literature are outlined in figure 15 below. The eportfolio definitions have been analysed and classified into six broad categories:

1. Techno-centric
2. Learning oriented
3. Collaboration focused
4. Assessment focused
5. Product focused
6. Student centred

Eportfolio Definitions-Most commonly cited		
Definition	Reference	Classification
An e-portfolio is a digitized collection of artefacts including demonstrations, resources, and accomplishments that represent an individual, group, or institution. This collection can be comprised of text-based, graphic, or multimedia elements archived on a Web site or on other electronic media such as a CD-ROM or DVD. An e-portfolio is more than a simple collection—it can also serve as an administrative tool to manage and organize work created with different applications and to control who can see the work. E-portfolios encourage personal reflection and often involve the exchange of ideas and feedback.	Lorrenzo & Ittleson 2005	Techno-centric
An eportfolio is a digital container capable of storing visual and auditory content including text, images, video and sound. Eportfolio may also be software tools not only because they organize content but also because they are designed to support a variety of pedagogical processes and assessment purposes.	Abrami & Barrett 2005	Learning oriented & Techno-centric
An eportfolio is the product, created by the learner, a collection of digital artefacts articulating experiences, achievements and learning. Behind any product, or presentation, lie rich and complex processes of planning, synthesising, sharing, discussing, reflecting, giving, receiving and responding to feedback.	Jisc 2008	Techno-centric
Broadly, the product eportfolio is a purposeful selection of items (evidence) chosen at a point in time from a repository or archive, with a particular audience in mind. The processes that are required to create eportfolio – for any purpose – include capturing and ongoing storage of material, selection, reflection and presentation.	Hartnell-Young 2007	Techno-centric

Figure 15 Eportfolio Definitions- Most Commonly Cited

The four most commonly cited definitions of eportfolio by Jisc (2008), Abrami & Barrett (2005), Lorenzo & Ittleson (2005) and Hartnell-Young (2007) permeate the literature on eportfolio, but inadequately define eportfolio in the context of learning.

As definitions, they are passive, technocentric, focusing on the tool rather than the affordances of the tool for learning. These definitions emphasize the product or outcome of creating an eportfolio and do not emphasise the transformative and empowering developmental learning processes that eportfolio enable, which has more impact on learning than the creation of a product. The definitions do not address eportfolio as a pedagogical model, with the exception of the last part of Abrami & Barrett (2005) which states “they are designed to support a variety of pedagogical processes and assessment purposes”.

There are less technocentric and more learning oriented definitions of eportfolio, for example Zubizarreta (2012) defines a learning portfolio as:

“The learning portfolio provides a vehicle for bringing together judiciously selected samples of students’ work and achievements inside and outside the classroom for authentic assessment over time. A typical learning portfolio may include both academic materials and personal profiles and may designate some of its contents as public or private. The learning portfolio, then, becomes more than a product, a simple repository of artefacts; it becomes a process of reflection, of organizing, prioritizing, analysing, and communicating one’s work and its value, which may prompt insights and goals” (p.65).

This definition highlights the developmental nature of eportfolio learning, and emphasizes the importance of learning by using the term learning portfolio instead

of the term eportfolio which gives weight to eportfolio technology. Zubizarreta's description of a learning portfolio as a vehicle which brings student learning together is an important distinction from a tool, it captures the ability of eportfolio to enable learning.

There is a third group of definitions of eportfolio which consider the personalised, student owned, self-representation and identity elements of eportfolio based learning. The concept that eportfolio are student owned and the content is student generated features in Eynon & Gambino's (2017, p.1) definition which states that "student eportfolio are web-based student generated collections of learning artefacts and related reflections, focused on learning and growth." Further, this definition integrates the developmental and focus on learning discussed above. Similarly, the Centre for Recording Achievement's (2008) definition connects eportfolio with identity and self-representation, they define an eportfolio as "a repository, a means of representing oneself and one's skills, qualities and achievements, a guidance tool, a means of sharing and collaborating and a means of encouraging a sense of personal identity." Finally, Cambridge (2008, p.1227) argues that portfolio composition produces a highly individualised self-representation or "another kind of self".

The analysis of the eportfolio definitions above shows that an eportfolio has many affordances and can be used flexibly for a variety of purposes in higher education. While the flexibility of the eportfolio may be viewed as a benefit; however, in practice, this can be a source of confusion and a barrier to successful introduction of eportfolio practice at an institutional level, as the clear purpose of eportfolio practice must be clear and explicit to students and academic staff (Farrell, 2018a). Therefore, it is clear that the purpose and definition of eportfolio are re-examined

and redefined, shifting from a technocentric conception toward a pedagogical, student centred and learner orientated definition of eportfolio.

Drawing the eportfolio definitions together, six attributes featured in the literature discussed above are of central importance to this study: the term learning portfolio instead of eportfolio, the focus on pedagogy, the personal and identity elements, the developmental process of learning with an eportfolio, to place emphasis how eportfolio are a vehicle for learning rather than a technology or tool. These six attributes are important to this study because the research question is interrogating the developmental and process aspect of eportfolio based learning and not on the techno centric tool.

3.9 WHAT THEORETICAL FRAMEWORKS ARE THERE FOR EPORTFOLIO PRACTICE?

The theoretical underpinnings of eportfolio as a pedagogical model stem from a constructivist approach to knowledge and learning (Eynon & Gambino, 2017; Watty & McKay, 2015). As a constructivist pedagogy, eportfolio practice further draws on several other theories of learning such as Dewey's reflective learning and Schon's reflective practitioner, Meizrow's theory of transformational learning, Kolb's experiential learning, Flavell's metacognition, Baxter Magolda's self-authorship and Lave's theory of situated learning (Batson, 2011; Eynon & Gambino, 2017; Penny Light, Chen, Ittleson, 2012; Reynolds & Patton, 2014). These theoretical underpinnings of eportfolio pedagogy are discussed below in relation to the theoretical frameworks or models for effective eportfolio practice in higher education.

One of the pioneers in the early development of eportfolios in higher education during the 1990s was Helen Barrett. She developed the first definitions and

theoretical approaches for eportfolio practice, which articulated the varied purposes and characteristics of eportfolio and was an important contribution to the theory on eportfolio practice. Abrami & Barrett (2005, p.2) argue that eportfolio have “three broad purposes: process, showcase and assessment.” The purpose of the eportfolio shapes how they should be used in higher education. The purpose of a process portfolio is developmental, showing a student progress over time, whereas a showcase portfolio aims to demonstrate a student's competencies and achievements and finally an assessment portfolio is focused on evaluation, see figure 16 below (Abrami & Barrett 2005, Barrett 2007). Further, Barrett (2007) highlights the link between assessment for learning and eportfolio practice, particularly for process or developmental portfolios. Finally, Barrett (2007) advocates that the learner portfolio should be kept separately from the institutional virtual learning environment (VLE) to ensure students feel a sense of ownership of their own portfolio.

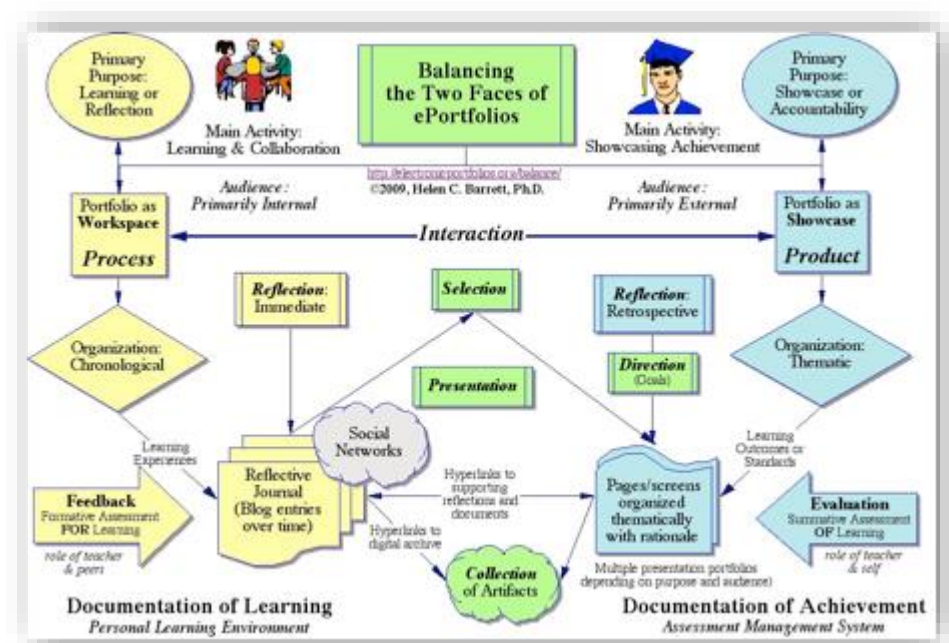


Figure 16 Balancing the two faces of eportfolios (Barrett, 2009)

Zubizarreta's (2008, 2009) learning portfolio model has three components: reflection, documentation and collaboration, he argues that deeper learning for the student occurs when the three components come together at the centre of the design of the portfolio. He details that "a sound learning portfolio involves a concise reflective narrative, plus selective evidence...the role of the collaborative mentor is to help the writer keep the portfolio manageable, current, accurate, organised and relevant" (Zubizarreta, 2008, p.1). Zubizarreta (2012, p.64) highlights the importance of focusing student reflection in their learning portfolio through "critical questions about his or her own learning". His learning portfolio model brings together eportfolio and critical thinking, the two theoretical frameworks which underpin this study.

With a similar focus on learning, Chen & Penny Light (2010, p.18) argue that the "value of eportfolio lies not in the specific tool itself but in the processes and in the ways in which the concept and related activities and practices are introduced to students." This is further evident in their pedagogical approach to eportfolio practice called *Folio Thinking*, which offers a framework of eportfolio activities designed to enable students to reflect on their learning, personalise their experience using multimedia and present to a variety of audiences (Penny Light, Chen, Ittleson 2012). *Folio Thinking* focuses on the practice of documenting learning rather than on the eportfolio technology and aims to foster a culture of process oriented eportfolio use that encourages reflection over time and enables students to make connections integrating their learning inside and outside the classroom (Chen & Black, 2010, Penny Light, Chen, Ittleson 2012). The focus on a developmental culture of which eportfolio are part of the learning ecosystem is a unique aspect of the *Folio Thinking* pedagogy and a key conceptual argument for this study.

In their conceptual model for electronic personal development plans (ePDP) at Indiana-Purdue University, Buyarski et al. (2015) describe the need for a conceptual model arose from a lack of clarity around how to use eportfolio for personal development planning. Their eportfolio model has “four domains: increasing understanding of self and others, setting self-concordant goals, developing hope and shaping education and career goals.” (p.1) Reflection is central to the ePDP model and acts as the main vehicle for facilitating learning and development within the four domains outlined above, the main goal of ePdP is for students to take ownership of their learning and to map out their learning journey (Buyarski et. al., 2015). The ePdP model’s emphasis on the centrality of reflection to learning with an eportfolio is a conceptual element which shapes the theoretical framework of this study.

The Catalyst for Learning framework developed by the Connect to Learning project in the U.S.A. is one of the more evolved theoretical frameworks for eportfolio practice because it adopts a multifaceted approach which includes pedagogy, reflection and inquiry at its core. The Catalyst for Learning framework is a “linked set of campus-tested strategies for building an effective eportfolio initiative, connecting effective pedagogy to professional development and outcomes assessment” (Eynon & Gambino, 2017, p.9). The Catalyst framework takes a holistic institutional approach to eportfolio practice, it has learning at its core and then has five interlocking sectors: pedagogy, professional development, scaling up and outcomes assessment. The framework also encompasses three design principles which are inquiry, integration and reflection. Further the Catalyst framework engages key partners such as students and faculty and envisions eportfolio practice

embedded in programmes and modules in curricular and extracurricular contexts (Eynon & Gambino, 2017) (See Figure 17 below).

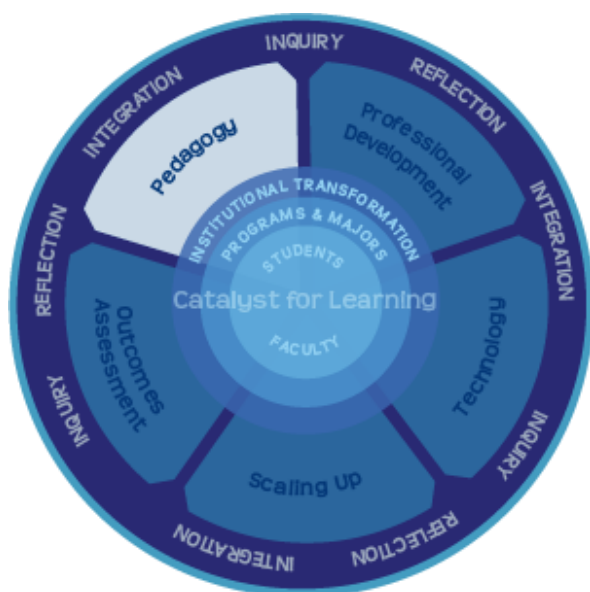


Figure 17 Catalyst for Learning Framework (Eynon & Gambino, 2017)

The Catalyst for Learning framework is a useful model for developing effective eportfolio practice, because the design principle of inquiry, reflection and integration are of particular relevance to this study.

3.10 REFLECTION

One of the most common themes in the models and frameworks for eportfolio practice is the centrality of reflection to learning with an eportfolio (Barrett, 2007; Buyarski et. al., 2015; Eynon & Gambino, 2017; Brandes & Boskic, 2008; Jenson, 2011; Landis, Scott, Kahn, 2015; Yancey, 2009; Zubizarreta, 2008). There are frequent references to a number of theories of reflection in the eportfolio literature such as those of Dewey, Rodgers, Schon, Mezirow, and King & Kitchener. There is general agreement in the literature about how fundamental reflective writing is to

effective eportfolio learning, however there is very little research on how to “elicit excellent reflection from our students” (Jenson, 2011, p.49), this is often presented in vague terms in the literature.

One eportfolio framework that lays out a theoretical approach for reflective eportfolio practice is the Catalyst for Learning framework discussed above. The Catalyst for Learning framework views reflection as the vehicle for effective learning with an eportfolio (Eynon & Gambino, 2017). The framework draws on Carol Rodger’s work on reflection which identifies four principles for meaningful reflection: reflection as connection, reflection as systematic and disciplined, reflection as a social pedagogy and reflection as an attitude toward change. The Catalyst for Learning framework articulates concrete ways of using Rodger’s model in eportfolio practice such as using reflection to capture experiences in a course, across semesters and disciplines, co-curricular and life experiences (Eynon & Gambino, 2017).

Adopting Rodger’s reflective cycle of presence in experience, description of experience, experimentation and analysis of experience as means to structure student reflection in their eportfolio provides structure and scaffolding for reflective thinking (Rodgers 2002, cited in Eynon & Gambino 2017). This approach to reflection was a useful and valuable contribution to eportfolio practice, where there was an absence of concrete guidelines for encouraging and developing students reflective writing.

Several empirical studies have investigated reflection in eportfolio and its impact on student learning. Yancey (2009) reports on five iterations of research carried out by the Inter/National Coalition for Electronic Portfolio Research. Their findings were

that across institutions eportfolio fostered and supported reflection, that reflection happens in context, portfolio structure shape the nature of student reflection, reflection is an iterative process, and that reflection in portfolios is a knowledge making activity. Similarly, Jenson (2011) found by combining self-assessment, discussion with eportfolio reflective tasks, students' depth and quality of reflection was improved. Scaffolding student reflective practice through prompts and model portfolios enabled student reflective writing to move from descriptive to analytical and enhanced student reflective practice in a study conducted in a Canadian University by Brandes & Boskic (2008). Engaging with reflective eportfolio practice can be challenging for students, as was confirmed by Landis, Scott and Kahn (2015) in their qualitative case study of eportfolio practice at Indiana University–Purdue University Indianapolis. In summary, reflection is considered to be the central vehicle for learning with an eportfolio, it can difficult for students to master but through scaffolding and use of reflective prompts can create a powerful learning experience.

3.11 INTEGRATION

This theme of integration or integrative learning is also a common feature in the theoretical approaches to eportfolio, especially those from the U.S.A. This is due to the work of one of the leading higher education accreditors the Association of American Colleges and Universities (AAC&U). The AAC&U identified integrative and applied learning as one of four key learning outcomes for colleges, and they have also identified high impact practices which can enable these four key learning outcomes. (Reynolds & Patton, 2014) In 2016, the AAC&U added eportfolio as the eleventh high impact practice, this was due to the large body of evidence of

eportfolio impact on student learning gathered by the Connect to Learning project (Watson, Kuh, Rhodes, Penny Light, Chen, 2016).

This section has discussed the five key theoretical models for eportfolio practice, the following aspects featured in the literature discussed above are of central importance to this study: the centrality of reflection, the design principles of inquiry, integration and reflection, the importance of purpose in designing eportfolio practice, pedagogy, developing an eportfolio culture which documents learning inside and outside of class, learning is at the core of effective eportfolio practice and students should own their eportfolio. These aspects are important because they directly address the research question and aims of the study, which are to interrogate the impact of a developmental eportfolio on the student learning experience and development of critical thinking skills.

3.12 WHAT IS THE NATURE OF LEARNING WITH AN EPORTFOLIO IN HIGHER EDUCATION?

As a digital tool, it seems from the evidence that an eportfolio has many affordances and can be used flexibly for a variety of purposes in higher education. While the flexibility of the eportfolio may be viewed as a benefit, however in practice this can be a source of confusion and a barrier to successful introduction of eportfolio practice at an institutional level, as the clear purpose of eportfolio practice must be clear and explicit to students and academic staff (An & Wilder, 2010; Gaitan, 2012; Parker, 2012; Scholz, 2017; Wuetherick & Dickinson, 2015).

There are some regional differences evident in how eportfolio are being used in higher education which are formed by national higher education policy, for example in Australia, graduate attributes are high on the policy agenda, whereas in the U.S.,

its retention and integrative learning and in the UK, personal development planning (PDP) is the driver.

Through reviewing the eportfolio literature, a typology of five purposes for eportfolio practice in higher education were identified:

1. Assessment
2. Developmental
3. Placement
4. Careers
5. Student advising

Eportfolio can take many forms, depending on the purpose, the programme, the disciplinary context, and the desired learning outcomes. This section examines these five uses and purposes of eportfolio practice in higher education. The rationale for this approach is that there is a developmental aspect to all portfolio based learning, therefore reviewing these five uses and purposes of eportfolio are relevant to the research question of this study.

3.13 ASSESSMENT

Portfolios have become a common form of summative assessment across all disciplines in higher education (Lowenthal, White and Cooley, 2011). The rationale for adopting eportfolios for assessment are twofold; firstly, eportfolios can be an authentic, meaningful and student centred form of assessment because it captures evidence of student learning in context and over time (Chen & Penny Light, 2010; Buyarski & Landis, 2014; Eynon & Gambino, 2017). Secondly, eportfolio assessment

is a valid and reliable method of assessment of students' demonstration of learning outcomes (Ambrose, 2010; Banta, Griffin, Flateby, Kahn, 2009; Buyarski & Landis 2014; Eynon & Gambino, 2017).

Best practice for summative assessment using eportfolio according to the literature is that eportfolio should be programme-focused and form a core of a programme's assessment design rather than bolted on. It should be thoughtfully woven throughout the curriculum, capturing the student learning experience over the duration of the degree (Banta et. al., 2009; Clarke & Boud, 2016; Housego & Parker, 2009; Klenowski, Askew, Carnell, 2006; Shepherd & Bolliger, 2014; Simatele, 2015).

As a summative assessment which aims to measure student learning and demonstrate student attainment of learning outcomes, a well-designed eportfolio assessment can meet the quality metrics of reliability, validity, transparency and fairness which form a robust assessment system (Baird, Gamble, Sidebotham, 2016; Buente, Winter, Kramer, Dalisay, Hill, Buskirk, 2015; Driessen, Overeem, Van Tartwijk, Van der Vleuten, Muijtjens, 2006; Donato & Harris, 2013; Ring & Ramirez, 2012). It is argued that, a well-designed eportfolio assessment should align with module or programme learning outcomes and curriculum and should be assessed by authentic and valid rubric which also align with the learning outcomes (Donato & Harris, 2013; Yancey 2015).

The idea of using an eportfolio assessment as a capstone project at the end of a degree is a growing phenomenon (Buente et al., 2015; Baird et. al. 2016; Perks et. al., 2013). The aim of a capstone project is to create a culminating experience which integrates the theory, skills, knowledge and practice learned over the course of the degree together (Buente et al., 2015; Baird et. al. 2016; Perks et. al., 2013). In the

American context, eportfolio are increasingly used to assess general education competencies, often in the form of a final year capstone project (Buente et al., 2015; Morreale Van Zile-Tamsen, Emerson, Herzog 2017; Ring & Ramirez 2012).

There is evidence of impact of summative eportfolio assessment on student learning, eportfolio based assessment enabled students to integrate their learning and make connections between modules (Buente et. al. 2015; Eynon & Gambino, 2017; Morreale et. al. 2017), was authentic, student centred and meaningful (Baird et. al. 2016; Lambe, McNair, Smith, 2013) improves student writing (Desmet 2008) and promoted independent learning (Clarke & Hornyak, 2012).

3.14 DEVELOPMENTAL

The literature on developmental eportfolio is highly relevant to this study, as the research question for the study examines the development of critical thinking in the context of eportfolio based learning.

There is a developmental aspect to all portfolio based learning, in fact it is a fundamental principle that evidence, reflections and artefacts are compiled incrementally over time. However only two types of eportfolio specifically have development as their purpose; a learning or process portfolio and a personal development portfolio (PDP). Although they share the common purpose of development, they have different aims. The learning and process portfolio focuses on learning and the documenting of the process of learning, while the personal development portfolio focuses on planning and goal setting. One of the key differences between developmental portfolios and other portfolios such as assessment or career portfolios, is that developmental portfolios are focussed on

the process of learning and therefore are process eportfolio, rather than final polished product or showcase eportfolio. Klenowski, Askew, Carnell, (2006) argue that there has been a shift from the traditional view of portfolio as a collection of work to a learning portfolio which focuses on learning. This section examines the theoretical underpinnings of developmental eportfolio and the empirical evidence about their impact on student learning. Both the theory of developmental eportfolio and the evidence of impact on student learning are highly relevant to this study. As the research question for the study examines the development of critical thinking in the context of eportfolio based learning and whether it enhances the student learning experience.

There are strong theoretical arguments of the benefits of eportfolio which focus on the process of learning. Zubizarreta (2008) argues that portfolios should focus on learning rather than skills, in particular on giving students opportunities with a learning portfolio to self-reflect on what, how and learning tool place and to consider why the learning was valuable. This focus on the learning process and metacognition can develop reflective judgement and higher order learning (Zubizarreta, 2008). Further, Kehoe & Goudzwaard (2015) theorize that developmental eportfolio can aid students' identity development and encourage self-authorship by documenting their experiences in academic and co-curricular contexts.

Peet, Lonn, Gurin, Boyer, Matney, Marra, Taylor, Daley (2011) developed a theoretical model called the Integrative Knowledge Portfolio Process which is focused on integrative developmental eportfolio. The Integrative Knowledge Portfolio Process model has six dimensions: adapt and apply knowledge in different contexts, create solutions, understand oneself as a learner, become a reflexive

learner, identify and discern one's own and others perspectives. Crucially, Peet et al. (2011) carried out a large scale empirical study to test the Integrative Knowledge Portfolio Process, conducting pre and post surveys of 620 students engaged with developmental eportfolio. They found that students who engaged with the Integrative Knowledge Portfolio Process showed significant gains across the six dimensions of integrated learning regardless of academic discipline.

According to Chen, Penny Light & Ittelson (2011) eportfolio based learning can document students' identity formation and narratives of self over time, and they draw on Baxter Magolda's theory of self-authorship, which she defined as "the capacity to internally define a coherent belief system and identity that coordinates mutual relations with others" (Baxter Magolda, 2004, p.303). Learning with an eportfolio, can support students evolving sense of self through self-authorship (Eynon & Gambino, 2017).

The concept of an eportfolio as a place for identity development and the articulation of a holistic self has been evidenced in studies conducted by Hughes (2010) and Nguyen (2013). Nguyen (2013) views an eportfolio as a living portal where students can continually re-articulate their ideas of self to others as a form of self-portrait. Her qualitative critical hermeneutics study found that the eportfolio was a shareable narrative of self, where students could continually re-articulate their ideas of self to others which brought about new understandings. Similarly, Hughes (2010) found that students' identity change was captured by the developmental eportfolio, where students brought together their inside and outside lives. Further, in Bennett, Rowley, Dunabar-Hall, Hitchcock, Blom's (2016) study of Australian music and writing undergraduate students, the process of learning with an eportfolio became a vehicle through which identity was constructed, developing

from a repository of evidence to a form of self-portrait. Finally, narratives of self differ for adult learners in comparison to traditional students, adult learners are balancing many competing priorities such as work, family, community with their academic studies. The process of creating an eportfolio which captures their holistic narratives of self is particularly powerful for adult students, as it enabled them to bring together their varied experiences in one place (Madden, 2015).

There are two further studies which investigated developmental eportfolio but focused on different aspects such as the development of independent learning (Chau & Cheng 2010) and the impact of how eportfolios make learning visible to students (Johnsen, 2012). Chau & Cheng (2010) carried out a qualitative study in Hong Kong Polytechnic University which investigated whether eportfolio could enable the development of independent learning among English as a foreign language students. They found that students felt a sense of personal ownership of their eportfolio and that both students and teachers found that the eportfolio “use as a tool conducive to learning as both a product and a process geared towards developmental performance” (Chau & Cheng 2010, p.938).

In a case study carried out by Johnsen (2012) in LaGuardia Community College, she applied Zubizarreta’s (2004,2008, 2012) theoretical model for a learning portfolio which focused on the process of learning to her composition class. Johnsen (2012) found that by creating and sharing their learning portfolios that they made their learning visible, therefore valued.

As the research question interrogates developmental, learning, process eportfolio, several important considerations arise from the literature discussed above. First, that developmental eportfolios can be a space for identity development, evolving

narratives of self and can be a powerful vehicle for demonstrating learning to students. Second, that further empirical research is required into the nature of developmental eportfolio. While there are strong theoretical arguments supporting the benefits of developmental eportfolio, there is a lack of empirical research in this area.

Personal development planning (PDP) as a use and aim for eportfolio is very specific to the UK higher education context, although there are examples of PDP in other countries. The relationship between personal development planning and eportfolios was outlined in a previous section. To recap this UK government policy emerged from the Dearing report (1997) which recommended the provision of progress files for higher education students where they could track their personal development (Strivens & Ward, 2010). Therefore, PDP and eportfolio are inextricably linked in the UK policy context. PDP is defined by the UK QAA (2009, p.2) as “a structured and supported process undertaken by a learner to reflect upon their own learning, performance and/or achievement and to plan for their personal, educational and career development. It is an inclusive process, open to all learners, in all HE provision settings, and at all levels”. Personal development planning has become a requirement in UK higher education institutions which has resulted in it becoming commonplace across courses and institutions (Head & Johnston, 2012).

There are a number of empirical studies which examine personal development planning using eportfolio in a higher education context. Using an action research approach, Gaitan (2012) examined student perceptions of personal development planning with an eportfolio in an undergraduate psychology degree at an English university over two years. He found that students’ attitudes to personal development related strongly to the perceived purpose of the activity and that the

issue of disclosure of personal information in their personal development portfolio was a concern and source of discomfort for many students. This theme of discomfort by the personal nature of PDP was mirrored in Herman and Kirkip's (2008) study which found that some participants were initially reluctant to participate in the personal development eportfolio as it felt unfamiliar and challenging. However, most students were positive about the PDP experience and for some the process was beneficial to their learning, 77% of students said they would use an eportfolio again in the future (Herman & Kirkip, 2008).

There is clearly a tension in the eportfolio literature between creating a personal holistic learning experience for students and causing discomfort for students by encouraging them to disclose personal information. This relates to the question of ownership of the eportfolio, if the student owns their eportfolio and controls who has access to it but it is kept within a university system which is bound by quality assurance mechanisms, who really owns the eportfolio?

3.15 PLACEMENT

Using an eportfolio to document student experience while on a placement, practice, or practicum is one of the most common purposes of eportfolio in a higher education context. Disciplines where placement are central to student learning such as teacher education and health and medical sciences have been early adopters of eportfolio. The use of eportfolio to bring together theory and practice and to facilitate competency based education are recurring themes in the literature on eportfolio and placement, which are examined in detail in the following section.

The use of portfolios to document student learning experiences on teaching placement is long established in teacher education and increasingly the adoption of eportfolio is becoming widespread (Parker, Ndoeye, Ritzhaupt, 2012). It is evident from the wide range of geographic locations of the journal articles reviewed such as Turkey, China, South Africa, USA, Germany, and Malaysia, that eportfolio in teacher education is a key issue worldwide.

One of the key benefits for preservice teacher for engaging with an eportfolio during teaching placement was the development of a professional identity as a teacher (Arend & Strydom, 2017; Ayan & Seferoglu 2011; Moran, Vozzo, Reid, Pietsch, Hatton, 2013; Parker, Ndoeye, Ritzhaupt, 2012; Pitts & Ruggirello 2012). A further benefit evidenced in the literature, was the value of peer support created by online eportfolio community which reduced the sense of isolation experienced by preservice teachers while on placement (Arend & Strydom, 2017; Ayan & Seferoglu, 2011; Moran et. al. 2013; Ozgur & Kaya, 2011). Finally, learning with an eportfolio during placement encouraged the development of reflective thinking and the integration of theory and practice (Ayan & Seferoglu, 2011; Kecik, Belgin, Dikdere, Aydin, Yuksel, 2012; Oner & Adadan, 2016).

Several issues and challenges were identified in the literature regarding the use of eportfolio for placement which mirror those challenges identified in the eportfolio literature as a whole.

The challenges were students' perception that creating an eportfolio as time consuming, clear communication of the purpose of the eportfolio task to students is required and how the eportfolio task is framed within a module or a programme has an impact on the adoption and buy-in by staff and students (Imhof & Picard, 2009; Kabilan & Khan 2012; Parker, Ndoeye, Ritzhaupt, 2012).

Finally, one very interesting idea which comes from the literature on eportfolio for placement, was the idea of praxis, the blurring of theory and practice together to create a new form of learning. Ayan & Seferoglu (2011, p.520) describes this as “eportfolio act as a bridge between the past and the future; the theory and the practice; the undergraduate education and the profession; throughout the transformation of the student from a pre-service teacher to a novice teacher”. This idea of bridging theory and practice is powerful and in relation to this current study poses the question; can eportfolio bridge the theory-practice gap for sociology students?

The use of portfolios to assess and support learning in medical and health sciences is also widespread. In their systematic review of portfolio in the health sciences, Buckley, Coleman, Davison, Khan, Zamora, Malick, Morley, Pollard, Ashcroft, Popovic, Sayers, (2009) found 554 journal articles on portfolios in the health sciences but only three related to eportfolio. Since the Buckley et. al. (2009) study, there has been a significant growth in the adoption of eportfolio in undergraduate health sciences programmes and a related increase in the research on the efficacy of eportfolio use, in particular in relation to clinical placement this is because reflection on practice is viewed by McAllister & Hauville (2017) as crucial in health care disciplines.

Two strong theoretical arguments about the value of eportfolio based learning in the health and medical context are put forward by Green, Wyllie, Jackson (2014) and Duncan-Pitt & Sutherland (2006). Green et. al. (2014) theorize that eportfolio are an authentic means for nursing students to evidence the development of skills, experience, professional development and ongoing learning in a clinical context.

Whereas, Duncan-Pitt & Sutherland (2006) argue that the true value of eportfolio in the health and medical context, is the affordance to bridge the theory-practice gap and enable learning situated in the clinical context.

From the empirical research in the clinical placement setting, learning with an eportfolio was found to aid the development of professional identity, encouraged work based learning, supporting of competency development, convenient, transparent, and a valuable and authentic record of student learning on placement (Belcher, Jones, Smith, Vincent, Naidu, Montgomery, Gill, 2014; Garrett, McPhee, Jackson, 2013; Pincombe, McKellar, Weise, Grinter, Beresford, 2010; Porter, Kleve, Palermo, 2016).

3.16 CAREERS

The main purposes of career eportfolio are to support students' transitioning from higher education to the workplace and to develop students' employability skills (Moretti & Giovannini, 2011; Simatele, 2015; Von Kronsky & Oliver, 2012; Reardon, Lumsden, Meyer, 2005). In fact, Taylor & Rowley (2017) argue that graduates applying for jobs with an eportfolio have a significant advantage over those applying with a traditional CV. Employers appear to becoming comfortable with reviewing eportfolio as part of their recruitment processes, the Association of American Colleges and Universities carried out a survey of 318 employers in 2013 in which 80% said they found eportfolio useful when reviewing applicants (Ring, Waugaman, Brackett, 2017). Further, students are beginning to value an eportfolio as a means of enhancing their employability post-graduation, in an Australian study carried out by Von Kronsky & Oliver (2012) which examined how students were using their

eportfolio in an Australian university, 52% of students reported that one the key reasons for them to use the eportfolio was that they thought it would help with their employability. It is notable that the literature from Australia in particular focuses has a particular focus on graduate attributes and employability which clearly a dominant discourse in Australian higher education.

There is conflicting evidence on the efficacy of eportfolio to develop career readiness and employability skills. Simatele (2015) found that transferable skills could be encouraged by using an employability eportfolio and Ring, Waugaman, Brackett (2017) reported that students who engaged with eportfolio and mock interviews together increased their career readiness. However, conflicting evidence was concluded in a study by Kennelly, Osborn, Reardon, Shetty (2016) which investigated career eportfolio in conjunction with mock job interviews their findings showed that students self-reported that they saw no difference in their interviewing skills after the eportfolio intervention.

The discourse on career eportfolios is flawed by its narrow focus on a neoliberal idea of higher education which aims to produce employable graduates with transferable skills. Even the concept of transferable skills is questionable, as so much learning is specific to a discipline context.

3.17 STUDENT ADVISING

In the United States, student academic advising plays an important role in supporting students to make informed choices about their subject majors (Chen & Black, 2010). In Ireland, we don't have an equivalent system as students have chosen their subject specialisms on entry to the higher education system. One of

the uses of eportfolio practice in American colleges and universities is to support student academic advising. Chen & Black (2010) who piloted advising eportfolios as a way of tracing a student's learning career as it developed during their time at Stanford. Building on this concept of an advising eportfolio, Ambrose & Chen (2015) and Ambrose & Ambrose (2013) developed a blended advising model called the 360° folio networking framework which flips the advising process by harnessing online learning approaches such as asynchronous and synchronous technologies in combination with a student centred eportfolio which was found to enhance interaction and increased mentoring for students. From the point of view of this research project, the model of blending of online interaction with eportfolio practice is highly relevant.

3.18 EMERGING PRACTICE IN HIGHER EDUCATION

In addition to the pairing of digital badges and eportfolio described in an earlier section, there are several emerging uses of eportfolio in higher education. Such as using an institutional eportfolio to document the whole learning career of a student, including the co-curricular elements thus creating a comprehensive student record (Eynon & Gambino, 2017). Another interesting emerging use of eportfolio is for enhancing postgraduate research supervision (Le, 2012; Smarzija & Balaban 2014).

3.19 HOW ARE EPORTFOLIO BEING USED IN IRISH HIGHER EDUCATION?

Eportfolios are common in American higher education, with 57% of colleges using eportfolio. (Eynon & Gambino, 2017) Similarly in the UK, a survey carried out in 2014 highlighted that 78% of universities now have a centrally supported e-portfolio

tool (UCISA, 2014). Further evidence of engagement with eportfolio research and practice was the creation of an Irish higher education community of practice called Maharalr in January 2017, currently at time of writing in July 2017, there are twenty-five members from seven Irish higher education institutions.

There are two exceptions to this slow adoption of eportfolio in Irish higher education: Dublin City University (DCU) and Dublin Institute of Technology (DIT). DCU recently introduced of a campus wide learning portfolio called Loop Reflect for 16,000 students in May 2017 (O'Brien, 2017).

There is a distinct lack of high quality research on eportfolio in Irish higher education, a recent Education Resource Information Centre (ERIC) search revealed that there are only five peer reviewed journal articles published. Four of the five peer reviewed journal articles published about eportfolio in Ireland come from DIT, one from DCU and one from the University of Ulster in Northern Ireland.

Eportfolio are being used for multiple purposes in Irish higher education: for enhancing self-regulated learning (Morales, Soler-Dominguez, Tarkovska 2016, Morales & Soler-Dominguez, 2015), for authentic developmental assessment (Lambe, McNair, Smith, 2013), supporting the development of learner autonomy (Kennedy, Bruen, Pechenart, 2012), for dialogic feedback (Morales et. al, 2015) and for enhancing and deepening student learning (Dominguez, Morales, Tarkovska, 2014; O'Keeffe & Donnelly, 2013).

For business students, Dominguez et. al (2014) found that their use of eportfolio enabled students to become more disciplined and self-regulated learners; participants reported that their learning experience improved significantly and gave them a break from the traditional learning approaches. Similarly, Morales et. al

(2015) confirmed that eportfolio based learning encouraged students to become active and independent self-regulated learners. They found further that the use of eportfolio as a complementary mode of assessment allowed for holistic integration enabling students to reflect on how course activities were connected and gain a better understand of their strengths and limitations. Kennedy et al. (2012) assert that the value of combining instruction with reflection and real experience created a direct relationship between the material being taught in the classroom and the learners reality creating a deeper reflective experience. Further evidence of praxis enabled by eportfolio based learning as it “reflected the inherent nature of a teacher education programme which requires participants to show how effectively they can weave theory and practice together” (Lambe et al., 2013, p.191).

Although it is limited in volume and scope the Irish higher education literature on eportfolio supports many of findings in other jurisdictions. However, it is evident that there is clear need for further high quality empirical based evidence on eportfolio practice in Irish higher education.

3.20 WHAT IS THE LEARNER EXPERIENCE OF USING AN EPORTFOLIO?

The literature on the learner experience of using an eportfolio is highly relevant to this study. As one element of the research question for the study investigates the impact of eportfolio on the nature of the learning experience from the perspective of the learner.

The learner experience of using an eportfolio has been explored in both qualitative and quantitative studies in the literature. The key themes that emerge in this

literature are positive are negative impacts of eportfolios on the student learning experience.

The positive impacts and benefits of eportfolios to student learning which are claimed in the literature are that it can be a personal, collaborative, and deepen the learning experience which includes enhanced career orientation and increased self-knowledge. (Buyarski & Landis, 2014; Eynon & Gambino, 2017; Janosik & Frank, 2013; Kabilan & Khan, 2012; Parker, 2012; Wakimoto & Lewis, 2014)

The negative aspects of learning with an eportfolio experienced by students centre around three key issues; confusion about purpose and expectations of the eportfolio task, eportfolio technology and time (An & Wilder, 2010; Birks et al., 2016; Gaitan, 2012; McWhorter et al., 2013; Parker, 2012; Scholz, 2017; Tzeng, 2011; Wuetherick & Dickinson, 2015). The design of the eportfolio task, how the task is then implemented and the technical support provided all significantly impact on the student experience of learning with an eportfolio.

The design of the eportfolio task and the communication of the purpose of eportfolio and the expectations have an impact on the student experiencing of learning with an eportfolio. Where there is poor communication of expectations to the students or the eportfolio is an add-on activity, the experience for students tends to be negative (Scholz, 2017). Clearly aligned and embedded eportfolio tasks in the module or programme more effective than ad hoc, bolted on eportfolio tasks (Gaitan 2012; Simatele, 2015). The clarity of purpose for producing an eportfolio is essential according to Gaitan (2012), who argues that students' attitudes are strongly related to their perception of a purpose for producing an eportfolio as well

as technical aspects and perception of guidance, this argument is further supported by Ring & Ramirez (2012) who found that a lack of clear purpose was a barrier to the success of their university wide eportfolio programme implementation. Finally, Eynon & Gambino (2017. p.171) found that “the value of the eportfolio experience for students depends on how it is implemented; that is, the pedagogy and practices of faculty and staff as well as broader support structures.”

There are two further barriers to meaningful student experiences when learning with an eportfolio; the use of eportfolio technology and time. These barriers are strongly articulated by student voices in the literature (An & Wilder, 2010; Birks et al., 2016; Gaitan, 2012; McWhorter et al., 2013; Parker, 2012; Scholz, 2017; Tzeng, 2011; Wuetherick & Dickinson, 2015). If appropriate technological support and training are not provided, students experience significant frustration, confusion and difficulties creating an eportfolio and this impacts very negatively on their experience of learning with an eportfolio (McWhorter, 2013; Scholz, 2017; Wuetherick & Dickinson, 2015; Ntuli et. al., 2009; Tosh et. al., 2005). Practical hands on training provided at the time of need are key to students successfully learning with an eportfolio (Parker et. al., 2012; Ring & Ramirez, 2012; Wakimoto & Lewis 2014).

Accounting for a variation in student computer skills and providing training accordingly impacts on student perceptions of eportfolio use (Wuetherick & Dickinson, 2015). Students have difficulty adapting to change, and it cannot be assumed that students will easily accept a new technology such as an eportfolio, student “buy-in” is key (Janosik & Frank, 2013; Ring & Ramirez, 2012; Tzeng, 2011; Tosh et. al 2005). If support, training and clear goals are not provided for the eportfolio task, students experience frustration with the eportfolio technology use.

(Birks et. al 2016; McWhorter et. al 2013; Tzeng 2011; Wuetherick & Dickinson, 2015) Further, the choice of eportfolio platform in terms of accessibility, usability and integration into the institutional learning system has an impact on the student experience (Brown, 2015; Birks 2016).

Students viewed creating and maintaining an eportfolio as a time consuming task which involved a heavy workload (Janosik & Frank, 2013; Kabilan & Khan, 2012; McWhorter et al., 2013; Parker, 2012). Time was an obstacle and a barrier for student completion and continuing to use an eportfolio over time (An & Wilder 2010, Hsieh & Lee 2015).

This section outlines the literature from a student perspective focusing on the positive impacts of learning with an eportfolio on student learning; the integration and deepening of the learning experience, awareness of growth and development as learner, student success, self-awareness, goal formation, career and employment focus and student ownership and personalised learning. The largest body of evidence on student perspectives on learning with an eportfolio was compiled by Eynon & Gambino (2017) which conducted a survey of higher education students (n=10,170) from twenty-four American institutions from 2011-2013. All of institutions were part of the Connect to Learning project and where following the C2L model of eportfolio practice (Eynon & Gambino, 2017). The C2L survey found that eportfolio practice deepened and integrated student learning, aided student growth and development, promoted future planning and enhanced student success, see figure 18 below (Eynon & Gambino, 2017, p.128).

C2L Question	% Agree or Strongly Agree
Building my eportfolio helped me think more deeply about the content of course.	63.8
Building my eportfolio helped me make connections between ideas	68.6
Building my eportfolio helped me succeed as a student	62.5
Someday, I'd like to use my eportfolio to show others such as employers or other professors at another college, what I've learned and what I can do.	70.2
Using my eportfolio has allowed me to be more aware of my growth and development as a learner	66

Figure 18 C2L Questionnaire (Eynon & Gambino, 2017, p.173)

Previous studies are consistent with Eynon & Gambino's (2017) findings about the eportfolio practice deepening and integrating student learning, McWhorter et. al. (2013) and Birks (2016) also concluded that students believed that learning with an eportfolio focused their learning, enabled them to see the "big picture" of their learning and reflecting in their eportfolio had enhanced their learning, creating a more meaningful, holistic and personal experience. Further, Kabilan & Khan (2012) reported that students learning with an eportfolio felt engaged in deep learning which enabled them to understand content at a deeper level than normal.

The finding from Eynon & Gambino (2017) that students perceived that learning with an eportfolio made them more aware of their growth and development as a learner is shared by several previous studies. Cheng & Chau (2010) found that students perceived the eportfolio as a useful tool which was conducive to learning as both a product and process were geared toward developmental performance. The development of self-awareness and making students' growth and development visible to themselves is clearly evidenced in the eportfolio literature on the student

experience (Janosik & Frank, 2013; Wakimoto & Lewis, 2014; Parker, 2012; Kabilan & Khan, 2012; Buyarski & Landis, 2014). In relation to growing and developing as a learner, the eportfolio enabled students to reflect, evaluate and identify their strengths and weaknesses (Kabilan & Khan 2012).

In keeping with Eynon & Gambino's (2017) finding that learning with an eportfolio encouraged career and future planning in students, a number of studies confirm this finding that students find eportfolio aid career development and future planning (Bennett et. al. 2016; Buyarski & Landis, 2014; Janosik & Frank, 2013; Ntuli et. al., 2009; Wakimoto & Lewis, 2014). Students who were engaged in professional studies such as teaching, found the career development afforded by the eportfolio particularly beneficial for developing competence and confidence seeking employment, developing a professional identity and demonstrating to professional accreditors that they met the standards required (Bennett et. al., 2016; Janosik & Frank, 2013; McWhorter et. al., 2013; Ntuli et. al., 2009; Parker, 2012; Wakimoto & Lewis, 2014).

Several studies on the student experience of learning with an eportfolio reported that students found that eportfolio based learning had no impact on their learning, motivation, development of identity, enhancement of their technology skills or on their transferable skills. (Contreras-Higuera et. al., 2016; Lopez-Fernandez & Rodriguez-Illera, 2009; Ntuli et. al., 2009; Singer-Freeman et. al., 2014)

As a final comment on student perspectives on learning with an eportfolio, it is worth noting Bryant & Chittum's (2013) point that students do not always prefer the teaching and learning methods that result in the greatest learning gain, so while student attitudes to eportfolio may not always be positive they are beneficial to their learning.

Relating the above literature to the present study, a number of factors are of importance to the design of the study; the necessity to provide clear goals and training for students and staff starting eportfolios, the prudence of providing technical support at the time need. In addition, that there is careful consideration of the design of the eportfolio entries, so that they don't become time-consuming and cumbersome for students.

3.21 HOW ARE EPORTFOLIO BEING USED IN BLENDED, ONLINE, DISTANCE HIGHER EDUCATION?

Blended, online and distance higher education courses are typically designed following social constructivist pedagogy, the same theoretical orientation as eportfolio practice. This shared theoretical underpinnings may be one of the reasons that eportfolio are becoming more common in the blended, online, distance context.

As eportfolio have become more ubiquitous in higher education, this trend is reflected in blended online and distance higher education courses (Barbera, 2009; Chen & Chen, 2009; Shepherd & Bolliger, 2014; Shepherd & Bolliger, 2011). Upon review of nineteen peer reviewed journal articles which met the inclusion criteria of this study, the purposes of eportfolio in blended, online distance higher education contexts are: community building, professional identity development, reflective practice, placement, employability and assessment (See figure 19 below).

The uses of eportfolio in blended, online, distance higher education are quite similar to that of higher education generally, with one notable difference, the use of

eportfolio to foster communities of learners. This is in response to the feelings of isolation often experienced by online distance learners that is a contributing factor to higher attrition rates in online courses (Barbera, 2009; Bolliger & Shepherd, 2010; Shaw & Polovina, 1999). Fostering a strong sense of community among students in online courses and establishing social presence can decrease students' feelings of isolation and disconnection (DiRamio & Wolverton, 2006; Phirangee & Malec, 2017).

Purposes of eportfolio in blended online distance higher education	
Community building	Shepherd & Bolliger 2014, Shepherd & Bolliger 2011, Chen & Chen 2009, Barbera 2009, Wang 2010, Tucker 2012, Moran et. al 2014, Bolliger & Shepherd 2010, Ehiyazaryan-White 2012,
Professional-personal development planning	Shepherd & Bolliger 2014, Dalton et al. 2015, Moran et al.2013, Matthews-DeNatale 2013
Reflective practice	Cheng & Chau 2009, Bolliger & Shepherd 2010, Brandes & Boskic 2008, Matthews-DeNatale 2013, Dalton et al. 2015
Placement-practicum	Ozgur & Kaya 2011, Kecik et al. 2012, Moran et. al 2014, Josephsen 2012
Employability	Herman & Kirkip 2008, Dalton et al. 2015
Assessment	Tucker 2012, Lopez-Fernandez & Rodriguez-Illera 2009, Mason et al. 2004, Larkin & Robertson 2013
Programmatic approach	Shepherd & Bolliger 2014, Dalton et al. 2015, Tucker 2012

Figure 19 Purposes of eportfolio in blended, online and distance education

3.22 EVIDENCE OF IMPACT

There is growing evidence of the impact of eportfolio based learning on students in the blended, online distance context. Researchers found that eportfolio based learning can foster community, peer collaboration and greater interaction between staff and students and enabled a culture of sharing and support within the learning community (Barbera, 2009; Bolliger & Shepherd, 2010; Ehiyazaryan-White, 2012; Moran et. al., 2014; Shepherd & Bolliger, 2014; Shepherd & Bolliger, 2011; Wang, 2010; Tucker, 2012). These findings support Zubizarreta's (2009, p.xxvii) argument that eportfolio should not be individual activities but rather "involving students in a critically reflective collaborative process that augments learning as a community endeavour and refines their educational experience".

Shepherd & Bolliger (2014, p.4) found that one of the key benefits of eportfolio based learning for students was "the opportunity to consider, document, and reflect on learning experiences throughout the programme". The benefit to students of the developmental aspect of eportfolio based learning or the process of reflection over time was further supported by Herman et al. (2008) study which investigated the impact of eportfolio on women returning to work in the science, engineering and technology sectors.

It is argued that reflection is central to effective eportfolio based learning. Eynon & Gambino (2017, p.34) argue that "reflection is pivotal to meaningful student eportfolio practice". Zubizarreta (2009, p.35) emphasises that "reflective writing is an instrumental feature of effective portfolios for learning." In the online distance learning context, the centrality of reflection for student learning is evidenced, for example in Brandes & Boskics' (2008) study which focused on enhancing reflection

through eportfolio in an online masters course, found that once students became familiar with the eportfolio tools and environment that students developed more nuanced and complex articulations of their learning processes through reflection and that the community of peers and staff played an important role in scaffolding and enhancing reflective practice. Further, Cheng & Chau (2009, p.347) in their study about using digital video for self-reflection in an eportfolio context, found that a “large proportion of video based reflection demonstrated a high level of reflection.” Finally, reflective practice in eportfolios as part of an online MBA was an essential component in the development of ethical, self-aware future leaders (Dalton et al, 2015).

Common themes in the higher education eportfolio literature are; using eportfolios to facilitate personal and professional development planning, academic advising, and the development of a professional identity (Ambrose & Chen, 2015; Stefani et al., 2007; Shepherd & Bolliger, 2014). This is reflected in the online distance learning eportfolio literature, in particular in postgraduate study in the disciplines of education and business. In their study of two online graduate programs, Shepherd & Bolliger (2014) found that over several years of study, reflecting on their goals in their eportfolios had a positive impact on the student's ability to refine, articulate and act on their personal and professional goals. In the context of online distance teacher education, eportfolio based learning was found to support the development of teacher professional identity during placement (Moran et al. 2013). Further, for women returning to work in fields of science, engineering and technology, Herman et al. (2008) found that students were generally positive about personal development planning, the majority of participants found it beneficial once they understood its relevance to their own career development. The link between eportfolio and goal setting is explored further in the next section.

3.23 WHAT IS THE RELATIONSHIP BETWEEN CRITICAL THINKING AND EPORTFOLIO?

The literature on the relationship between critical thinking and eportfolios is highly relevant to this study as it is a key theme of the study which is reflected in the research question which investigates the development of critical thinking in the context of eportfolio based learning.

From a theoretical perspective, early pioneers in eportfolio research Abrami & Barrett (2005, p.4) argued that eportfolio could encourage students to “think critically, and become active, independent and self-regulated learners”. This theory was further evolved by Zubizarreta (2008, p.xx) who argued that “the intrinsic merit of learning portfolio is that involving students in the power of reflection, the critically challenging act of thinking about their learning and constructing a sense of the learning experience as a coherent, unified, developmental process”. The theoretical foundations of relationship between eportfolio practice and critical thinking are further emphasized by the *Folio thinking* approach to the reflective practice of creating eportfolio which highlights the centrality of the process of reflecting overtime with an emphasis on self-understanding, metacognition and developing an intellectual identity (Chen & Black 2010; Penny Light, Chen, Ittelson 2012). Penny Light et al. (2012, p.7) strongly argue that eportfolio based learning can develop students’ critical thinking skills, that “documenting learning is perhaps one of the most important ways for learners to develop their critical thinking skills”. Thus, there would seem to be strong links between process or developmental portfolios and critical thinking in the literature.

Another theoretical strand that intersects with critical thinking and eportfolio practice is that of inquiry/enquiry based learning. Inquiry is a key design principle in

the Catalyst for Learning model for high impact eportfolio practice which adopts Kolb's problem based learning approach as their model for inquiry for design of eportfolio practices. Eynon & Gambino (2017, p.33) define inquiry as "a cyclical process that involves asking questions about authentic problems, analysing relevant evidence, creating and presenting evidence based solutions, reflecting on the learning process, and developing new questions and plans for further inquiry". Additionally, Eynon & Gambino (2017) argue that eportfolio pedagogy encourages inquiry and gives students freedom to investigate questions about which they are curious, which fosters intellectual maturity. Further, that eportfolios give students a place to showcase the products of their inquiry and the process of recurring inquiry into their own learning.

The Connect to Learning project (C2L), a US government funded eportfolio initiative involving 24 universities which began in 2011, created the Catalyst for Learning model for high impact eportfolio practice mentioned above and was led by Eynon & Gambino (n.d.). This project has collected and analysed a large body of evidence on impact of eportfolio practice on student learning through its C2L Core survey taken by 10,170 students (Eynon & Gambino, 2017). The findings show a strong correlation between eportfolio practice and student success, deep learning and learning centred institutional change. The findings on student learning are particularly relevant to relationship between eportfolio and critical thinking: 64% of respondents stated that building their eportfolio helped them think more deeply about the content of the course, 69% of respondents stated that building my eportfolio helped them make connections between ideas, 66% answered that using eportfolio has allowed me to be more aware of my growth and development as a learner (Eynon & Gambino, 2017, p.173). This project has made a significant

contribution to much needed empirical evidence on impact of eportfolio practice on student learning.

In the literature, the uses of eportfolio based learning in relation to critical thinking for the most part examined self-regulation and metacognition and how eportfolio based learning can be a catalyst for the development of self-regulation and metacognition. Fewer studies examined the interaction between eportfolio and specific critical thinking skills and dispositions. One study by Morreale et al. (2017) that touched on critical thinking, in its investigation of the use of a capstone eportfolio project to promote reflection, critical thinking and curriculum integration for final year undergraduates. Their findings suggest that a capstone eportfolio project can promote reflection, critical thinking, digital literacy, writing skill development and integrate learning inside and outside of the curriculum (Morreale et al. 2017).

In the eportfolio literature there appears to be coherent theoretical arguments that support the use of eportfolios to develop critical thinking skills. There are empirical studies which examine the impact of eportfolio practice on elements of critical thinking such as self-regulation and metacognition which are discussed in the following sections. However, there are no empirical studies which have investigated the impact of eportfolio practice on critical thinking skill development. Therefore, there are clear and significant gaps in the eportfolio literature in relation to critical thinking, which this thesis aims to address.

3.24 SELF-REGULATION

In the context of this study, self-regulation is defined as to “self-consciously to monitor one's cognitive activities, the elements used in those activities, and the

results educed, particularly by applying skills in analysis and evaluation to one's own inferential judgments with a view toward questioning, confirming, validating, or correcting either one's reasoning or one's results" (Facione, 1990, p.10).

Applying theories of self-regulation such as the work of Zimmermann (2002) Boekaerts and (2010) Pintrich (1990) researchers are exploring the potential of eportfolio to support self-regulated learning (Alexiou et al., 2010; Jenson, 2011; Lam, 2013; Nguyen, 2015; Stoten, 2016). It is argued that eportfolio may support self-regulated learning which could encourage student responsibility for their own learning (Dominguez et al., 2014; Morales et al., 2015; Morales et al. 2016; Yang et al., 2016). Finally, Lam (2014) argues that portfolio assessment can foster self-regulated learning.

There is growing evidence of the impact of eportfolio practice on students' self-regulated learning. In their quantitative study, using an eportfolio based self-regulated learning model with undergraduate computer science students, Nguyen & Ikeda (2015) found that the eportfolio practice had a positive effect on students' self-regulated learning skills, specifically goal orientation, metacognitive and effort self-regulation and critical thinking improved after applying the eportfolio based learning module in the course. Further, Stoten's (2016) action research study which examined the use of PebblePad+ (an eportfolio platform) as a developmental tool for facilitating self-regulated learning and reflection on professional practice, found that Pebblepad+ is an effective tool for promoting independent and self-regulated learning which can empower student control over the learning process. Alexiou & Paraskevas' (2010, p.3053) mixed method study explored the potential of eportfolio to support self-regulated learning among undergraduate computer science

students, found “higher levels of motivational and affective factors across all phases of self-regulated learning and eportfolio implementation.”

Combining eportfolio assignments with focused in-class discussions was found to be an effective and impactful approach for undergraduate English students. Jenson (2011) found that this instructional approach increased the reflective depth in student writing and fostered students’ critical reflection skills and self-regulation. For postgraduate business students eportfolio based learning had a positive impact on their self-regulation and autonomy, but this was heavily dependent on the scaffolding and support of the instructor at the early stages of eportfolio development (Dominguez et al. 2014; Morales et al. 2016). Focusing on the goal orientation component of self-regulation, Cheng & Chau (2013) found that the eportfolio use fostered students’ reflective skills by emphasizing both the process of learning through mastery oriented goals and the product of learning through performance oriented goals.

Finally, Yang et al. (2016) found that implementing eportfolio based learning which encourages self-regulation can be challenging and can lack authenticity for students if the eportfolio are not central to the assessment design and don't provide students with meaningful tasks which support student autonomy.

The next section explores a further element of critical thinking in relation to eportfolio based learning which is metacognition.

3.25 METACOGNITION

Recent eportfolio research explores the relationship between eportfolio practice and the development of metacognitive skills among students. These studies are based on Flavell's model which defines metacognition as "developing an awareness of their learning and thinking processes as well as the ability to monitor, assess, control and change those processes" (Flavell, 1979, p.906). Yancey (2009) argues that when eportfolio are focused on process rather than product solely, they can promote metacognition.

Several studies have investigated Yancey's (2009) argument, for example Bokser et al.'s (2016) study aimed to identify and assess metacognition in eportfolio across varied student populations and disciplines. They found that metacognition could be recognised across student eportfolio in different contexts and in eportfolio with differing purposes. They found evidence of metacognition in approximately 20% of the sample eportfolio (Bokser et al., 2016, p.38). Further evidence of the impact of developmental eportfolio on students' metacognitive skills is presented in Bowman et al. (2016) study which examined the impact of the use of eportfolio on students studying a first year writing programme metacognitive skills. The findings indicate that students who completed an eportfolio demonstrated "heightened levels of metacognition in relation to connections to learning and connections to career or personal goals" (Bowman et al., 2016, p.1). Further, researchers have found that eportfolio practice has an impact on students' metacognitive skills, goal orientation, student engagement and enjoyment of their course (Gencel, 2017; Haave 2016; Huang et. al., 2015).

There are coherent theoretical arguments that support the use of eportfolios to develop critical thinking skills, however there are no empirical studies which have investigated the impact of eportfolio practice on critical thinking skill development. There are empirical studies which examine the impact of eportfolio practice on elements of critical thinking such as self-regulation, metacognition and integration, but no empirical studies examine every component skill of critical thinking in relation to eportfolio based learning. Therefore, there are clear and significant gaps in the eportfolio literature, which supports the conclusions of Bryant & Chittum's (2013, p.195) influential systematic review of eportfolio effectiveness, they argue that "empirical evidence for the adoption of eportfolio grounded in learning theory, becomes increasingly important as the use continues to grow".

Having established clear gaps in the literature on eportfolio and critical thinking, the next section explores the impact of subject discipline on learning with an eportfolio. The previous chapter set out the theoretical model for critical thinking for this study. A key element of the theoretical model for critical thinking is that it is strongly rooted within the discipline context. This next section critically examines the impact of subject discipline on eportfolio based in learning.

3.26 HOW DOES THE SUBJECT DISCIPLINE IMPACT ON LEARNING WITH AN EPORTFOLIO?

There are very few studies examining the relationship between subject discipline and eportfolio based learning, and this gap in the literature was identified by Bryant & Chittum (2013, p.196) in their systematic review of eportfolio literature and who argue that "further research should expand our knowledge of the disciplinary appropriateness of eportfolio especially as colleges and universities implement

system-wide eportfolio programs for their incoming freshman.” Many of studies state the subject discipline as a contextual point, such as nursing, medicine, general education, teacher education, music, engineering, chemistry education, teaching English as a foreign language, history, social work, business (Bahreini et. al. 2013; Buckley et al., 2009; Cheng & Chau, 2013; Gencel, 2017; Haave, 2016; Morales et. al. 2016; Ntuli et. al., 2009). However very few investigate the relationship between the subject discipline and how the discipline shaped student learning with an eportfolio. This is a significant deficit in the eportfolio literature as one of the key learning theories that underpins eportfolio based learning is situated learning theory (Batson, 2011). Therefore, the context and culture of a subject discipline is fundamental to eportfolio based learning.

This section discusses the sparse literature which examines the interaction between subject discipline and eportfolio based learning. Turns, Sattler, Eliot, Kilgore, Mobrand (2012) in relation to engineering education argue that eportfolio in specific disciplines align with the characteristics of discipline, the student population and nature of knowledge of within the discipline. Birks, Hartin, Woods, Emmanuel, Hitchins (2016) argue that the subject discipline has an impact on the success of implementing an eportfolio and that implementing eportfolio in the health sciences has proven difficult. Whereas as Wutherick & Dickinson (2015) argue that disciplines such as fine arts, writing and design might suit eportfolio better. This is because those disciplines had a tradition of paper portfolios which made them more positively inclined to eportfolio.

From these three articles on discipline and eportfolio based learning, two elements are salient to this study. Firstly, eportfolio learning aligns with the characteristics of

the discipline and secondly the disciplinary conception of the nature of knowledge impacts on the nature of learning with an eportfolio.

Having considered the impact of subject discipline on eportfolio based learning generally, the next section focuses specifically on the discipline of sociology. As, this case study is investigating the experiences of online distance learners studying a sociology module. Therefore, the discipline context of sociology is an important context in this case study.

3.27 ARE THERE SOCIOLOGY DISCIPLINE SPECIFIC EPORTFOLIO PRACTICES?

Despite being increasingly common in the humanities in higher education, eportfolio have received little attention by researchers in the area of teaching and learning sociology (Johnson, Renzulli, Bunch, Paino, 2013). There are no journal articles which examine eportfolio practice within the discipline context of sociology at higher education level and only three journal articles which investigate the use portfolio assessment within the context of sociology. Clearly this is a significant gap in the eportfolio literature, which this study addresses. In the absence of research on eportfolio in the sociology discipline context, this section outlines the sparse literature related to portfolio assessment in higher education sociology, which is not empirical research but rather descriptive practitioner case studies.

Trepagnier (2004) introduced a portfolio assessment for an undergraduate module on sociological thought, which had the objective of student demonstrating their understanding of the sociological theories and concepts under the assumption that the application of concepts by students increases their understanding of theory. Based on the student evaluations, she found that student writing improved, their

understanding of social theory was more comprehensive, and they began to feel active in their own learning process (Trepagnier, 2004).

Following Trepagnier's (2004) approach to portfolio assessment, Johnson, Renzulli, Bunch, Paino (2013) introduced a portfolio task into three undergraduate sociology courses in the University of Georgia. The primary aim of introducing the portfolio was to give students a hands on opportunity to work with concepts from the course, discuss the concepts with peers, and creatively present their work. The secondary aim was to encourage students to act like sociologists in order to develop their sociological perspective and to encourage their identification as sociologists (Johnson et. al. 2013). Their findings indicated that the portfolio was associated with increased sociological thinking and identity as a sociologist (Johnson et. al. 2013).

Finally, Clarke & Hornyak (2012) shifted assessment from essays to portfolio in an undergraduate introduction to sociology course, they found that students demonstrated increased understanding, in terms of being better able to conceptualise, acquire and apply knowledge through visuals and real world experience.

From the point of view of the current study, three elements from the above studies on portfolios in a sociology context are of relevance; firstly, it would seem that portfolio based assessments can encourage sociological thinking, secondly, portfolios can encourage the development of identity as a sociologist, thirdly, portfolios in the context of sociology can aid the comprehension of theory. This poses the question then of how will these features translate to an eportfolio in the discipline context of sociology?

3.28 EPORTFOLIO THEORETICAL FRAMEWORK

This case study is bounded by two interlinked theoretical frameworks. The conception of eportfolio in this case study brings together three distinct theoretical approaches to eportfolio practice; Zubizarreta's (2008) learning portfolio, Chen & Black's (2012) folio thinking and Eynon & Gambino's (2017) Catalyst framework for high impact eportfolio practice. Zubizarreta's model brings together the conceptual relationship between eportfolio and critical thinking. Of particular relevance, are the elements of Zubizarreta's learning portfolio model that emphasise critical thinking and developmental process, "the intrinsic merit of learning portfolio is that involving students in the power of reflection, the critically challenging act of thinking about their learning and constructing a sense of the learning experience as a coherent, unified, developmental process" (Zubizarreta, 2008, p.xx). Chen & Black's folio thinking highlights that eportfolio practice should be a "pedagogical approach that focuses on designing structured opportunities for students to create eportfolio and reflect on their learning experiences" (Chen & Black, 2010, p.2). This focus on eportfolio practice and pedagogy rather than technology is a fundamental principle to the understanding of this thesis, and is shared by Eynon & Gambino's Catalyst framework for high impact eportfolio practice. The Catalyst Framework provides a much needed evidence-based approach to eportfolio practice, the features of the framework of particular relevance to this case study are the three design principles of inquiry, reflection and integration and the strong focus on pedagogy (Eynon & Gambino, 2017).

In summary, the model of eportfolio based learning for this case study is that the process of eportfolio based learning can be transformative, personal and empowering for learners. (See figure 20 below).



Figure 20 Learning portfolio practice model

These interlinked theoretical frameworks for eportfolio practice and critical thinking form the theoretical foundations for this study and form a theoretical framework for learning portfolio practice called critical folio thinking (Farrell, 2018). The critical folio thinking framework conceptualises effective learning portfolio practice as comprising of four elements: the process of learning, critical thinking skills,

reflection and discipline context. The process of learning portfolio practice can be transformative, personal and empowering for students. Effective learning portfolio practice can stimulate critical thinking, provide space for students to experiment and reflect on their learning journeys. Reflective writing is the medium which facilitates learning portfolio practice. The developmental process of learning portfolio practice can be authentic, promote deep learning and should be grounded in a disciplinary context (see Figure 21 below).

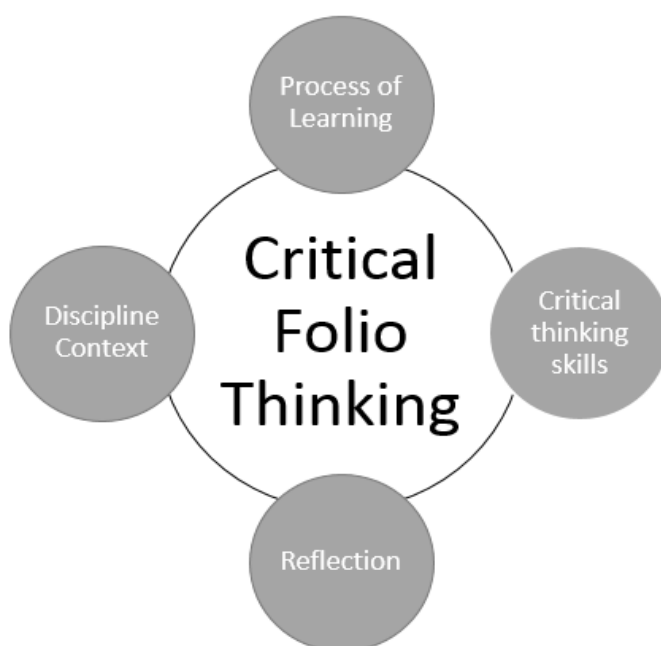


Figure 21 Critical Folio Thinking Framework

3.29 CONCLUSIONS

This chapter has examined the literature surrounding eportfolio definitions, practice and purpose in the contexts of higher education, Ireland, online distance learning and the discipline of sociology. This analysis has highlighted that eportfolio is a poorly defined concept in the literature, the majority of the definitions are technocentric, focusing on the tool rather than the affordances of the tool for

learning. The definitions emphasize the outcome of creating an eportfolio and do not emphasise the transformative and empowering developmental learning processes that eportfolio enable. It is time to redefine eportfolio in a learning oriented manner which focuses on eportfolio based pedagogy and practice.

Further, the literature analysis has identified the dearth of empirical research on eportfolio and critical thinking. Although there is a clear gap in the literature, this chapter found clear theoretical links between developmental process focused eportfolio and the development of critical thinking skills. These links form an important theoretical foundation to the interlinked framework for critical thinking and learning portfolio practice called critical folio thinking, which was outlined in chapter 1 and in the critical literature review in chapter 2. Thus, the chapter concludes with the eportfolio theoretical framework for this study, which forms an important theoretical foundation for the research project in conjunction with the theoretical framework of critical thinking outlined in the previous chapter.

This literature analysis has identified a number of key aspects which inform the design of this thesis. These key aspects indicated by the literature are; the fundamental role of reflection as a vehicle for expression in an eportfolio, the intentional focus on the learning process in developmental portfolios, the importance of having articulating the purpose of the eportfolio to students, and the critical role of technical support and training for successful eportfolio implementation. In addition, the literature indicates that scaffolding student reflection through prompts may facilitate self-regulation.

Following the detailed analysis of the eportfolio literature in this chapter, this analysis shapes the design of the study which follows in chapter five and has led to a re-shaping of the research questions for the study. This literature review chapter informs the design of eportfolio data generation instrument and the time period for data generation, which is detailed in chapter five.

In the next chapter, a synthesis of the current literature on online distance learners is presented, in order to flesh out this important context for this case study. This chapter aims to develop a profile of online distance learners, to develop definitions of online distance learning and online distance learner for this study, to explore the study habits and factors which affect online distance learners learning experiences.

4 CHAPTER FOUR WHO ARE ONLINE DISTANCE LEARNERS?

4.1 INTRODUCTION

This chapter aims to develop a profile of online distance learners by synthesizing the current literature. This synthesis of the literature is guided by the following questions:

1. How is online distance learning defined?
2. Who are online distance learners?
3. What factors promote successful engagement for online distance learners?
4. What are the study habits of online distance learners?

4.2 ONLINE, DISTANCE, BLENDED LEARNING: CONTEXT AND DEFINITIONS

Online and distance education are the fastest growing areas of education worldwide, and this is because they provide access to educational opportunities in a flexible manner to students from diverse backgrounds and geographical regions who often can't access higher education by other means (Delaney & Fox, 2013; Simpson, 2012). In the U.S., a recent report by Babson Survey Research found that 32% of all American college students (which is over 6 million students) were studying at least one course through distance education (Seaman, Allen, Seaman, 2018). In Australia, 31.5% of students are studying off campus (Universities Australia, 2017). However, this trend is not mirrored in the Irish context, the most recent figures compiled by the Irish Higher Education Authority (HEA, 2016) reveal that only 3% of enrolments are studying remotely and only 17% studying part time. Brown (2017) argues that the reason for the low participation rates in online distance education and part-time modes of study in Ireland are due to the current

restrictive funding model which does not financially support these study modes. Further, the current absence of funding for part-time and online distance modes is at odds with the stated national education policy which has the aim of increasing the participation rates of part time and flexible learners (Brown, 2017; Flannery & McGarr, 2014; HEA, 2015). In Ireland, this cohort of students is defined by the HEA (2015) as students with “part-time/flexible participation in higher education is defined as participation on a programme of less than 60 credits per academic year” (p. 36). The profile of this cohort of students in Ireland is that they tend to be older and from lower socio-economic backgrounds and from one of two educational backgrounds; already educated and upskilling, or second chance learners, possibly from marginalised populations who have been previously excluded from higher education or have delayed participation (Brunton, et al., 2015; Delaney & Farren, 2016; Flannery & McGarr, 2014).

Within this context, one of the problems is a lack of consistency in the terminology and definitions for online learning, distance learning and blended learning in both policy texts, professional and research literature. The key point is all three of the aforementioned terms are contestable (Moore, Dickenson-Deane, Gaylen, 2011). For some, online learning is a new generation of distance education which stems from the same principles and it is viewed by others as a subset of distance education (Harasim, 2017; Foley, McCabe & Gonzales-Flores, 2017; Siemens, Gavsvic, Dawson, 2015). Other theorists such as Garrison and Anderson (2011) view online learning as distinct to distance education in its pedagogy, approaches to learning and content delivery. All three modes of delivery: online, distance and blended learning arguably share similar constructivist pedagogical underpinnings, until more recent shifts towards connectivism and collaborativism which are

emerging (Andersen & Dron, 2011; Harasim, 2017; Warring, 2013). In fact, Selwyn (2011) argues that the change from distance learning to online learning and the role of technology in this transformation has radically altered the pedagogy and student experience of being an online or distance learner (Selwyn, 2011). This section outlines and critiques the definitions of online, blended and distance learning from the literature and aims to construct an operational definition for this present study.

Distance education or distance learning has a long history dating back two hundred years with the aim of providing access to education to those who were geographically distant (Moore et. al., 2011; Simpson, 2012; Siemens et. al., 2015). The nature of distance education has evolved with the affordances of the technology of the time, evolving from correspondence to teleconferencing to harnessing online technologies (Siemens et. al. 2015). Three common definitions of distance education are:

1. "Teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organization" (Moore and Kearsley, 2004, p. 2).
2. "Education that uses one or more technologies to deliver instruction to students who are separated from the instructor and to support regular and substantive interaction between the students and the instructor synchronously or asynchronously" (Seaman, Allen, Seaman, 2018, p.5).
3. "Distance education is teaching and planned learning where the teaching occurs in a different place from learning, requiring communication through

technologies and special institutional organization” (Siemens et. al. 2015, p. 42).

The definitions share two common attributes: geographic separation or off-campus student engagement and the use of technology to enable learning. These conceptions of distance education while relevant to this study do not match the course profile of this study adequately. Although, the BA in Humanities which provided the context of this case study, began as a distance education course, following the correspondence model, the course has evolved over time. Since 2006, the BA in Humanities began evolving from a distance learning mode to a blended online delivery, by using the virtual learning environment (VLE) Web CT in combination with the previous mode of printed self-study course content and a small number of face to face tutorials. From 2011 to present day, the mode of delivery further evolved from distance to online by introducing some synchronous live online tutorials and by delivering the course content electronically on the VLE called Loop (Delaney, 2017).

As the distance education definitions do not fit the course profile, the definitions of blended learning are now examined. Drawing on the affordance of educational technology, blended learning involves combining traditional campus based face to face teaching with technology enhanced experiences which are typically online. There is a diversity of definitions of blended learning, Allen & Seaman (2007, p.5) define it as course where “30 to 79% of the course is delivered online. A course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has some face-to face meetings.” The most straightforward definition is that of Siemens et. al. (2015, p.61) that “blended learning refers to the practices that combine (or blend)

traditional face-to-face instruction with online learning”. By contrast, Sener (2015) differentiates between two types of blended course: a blended classroom course where most of activity is done in face to face classes and a blended online/hybrid course where most of the activity takes place online. From the point of view of this study, Sener’s (2015) definition of an online or hybrid course where “most course activity is done online, but there are some required face-to-face instructional activities, such as lectures, discussions, labs, or other in-person learning activities.” is the definition that most accurately describes the mode of delivery of the BA in Humanities; however the term “blended learning” is problematic because it is perceived to be linked to a heavy emphasis on campus based classes, which is not compatible with the course profile of the present study.

Online learning dates back to the 1970s and its development is linked with the evolution of the internet (Harasim, 2017). Similar to the contested definitions of distance learning and blended learning, there is a lack of an agreed definition of online learning (Siemens et. al 2015, Moore 2011, Ally 2008). Four common definitions of online learning are:

- “A course where most or all of the content is delivered online. Typically have no face-to-face meetings” (Allen, Seaman, Garrett, 2007, p.5).
- “Online learning is a form of distance education where technology mediates the learning process, teaching is delivered completely using the Internet, and students and instructors are not required to be available at the same time and place” (Siemens, Gavsic, Dawson 2015, p.100).
- “All course activity is done online; there are no required face-to-face sessions within the course and no requirements for on-campus activity” (Sener, 2015).

- “Online learning as the use of the Internet to access learning materials; to interact with the content, instructor, and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience” (Ally, 2008, p.16).

These four definitions share two common ideas; that all learning takes place online and the course has no face to face classes. Nevertheless, these conceptions of online learning while relevant to this study do not match the course profile of this study sufficiently. Therefore, the next section discusses a more appropriate definition for this study.

4.3 ONLINE DISTANCE LEARNING: TOWARDS A DEFINITION

The previous sections reviewed and critiqued the most common definitions of online, blended and distance learning and showed that there is no singularly agreed understanding of these terms. None of the definitions quite fit the course profile at the centre of this study, which is now discussed in relation to the above definitions. This case study relates to the undergraduate Humanities Programmes offered by Open Education, which includes two qualifications: The Bachelor of Arts (Hons) in Humanities and the Bachelor of Arts (Hons) in Humanities (Psychology Major). The Humanities programmes are modular degrees designed for part time adult learners. At the beginning of the academic year, students are provided with access to self-study learning materials, resources, activities, online classroom, discussion fora on their module page on the university virtual learning environment called Loop. Students are supported academically through a variety of means: a personal tutor, the humanities programme team and the university student supports.

Students are also supported in online discussion forums, which is the key medium through which students communicate with their tutor and fellow students. Each module has a combination of face to face and online tutorials, there is typically two face to face tutorials on Saturdays on campus and seven online tutorials on week day evenings which results in fifteen hours of tutorials per module. Tutorials are activity-based sessions where tutors facilitate the discussion of the material students have been studying.

As the existing definitions of online, blended and distance learning do not fit the course profile, for the purposes of this study the term “online distance learning” and “online distance learner” are adopted and bring together the attributes of geographic separation or off-campus student engagement from the distance learning definitions and Sener’s (2015) definition of an online or hybrid course where “most course activity is done online, but there are some required face-to-face instructional activities, such as lectures, discussions, labs, or other in-person learning activities.” The strength of these terms as defined for the purpose of this study is they avoid the problematic term blended learning and incorporates the term “online distance learning” from Evans & Haughey (2014). Therefore, in the context of this study the following definitions are adopted for the purpose of this research:

1. ***Online distance learning is a course where the majority of the learning is online, the students are based off campus but may engage in a small number of face to face classes.***
2. ***An online distance learner is a part time adult learner based off campus, studying on a course where the majority of the learning is online, but may engage in a small number of face to face classes.***

This section has developed a definition of online distance learning for the purpose of this study. The next sections examine the literature on factors which affect online distance students' learning experiences and their study habits.

4.4 FACTORS THAT AFFECT ONLINE DISTANCE STUDENT EXPERIENCES

Online distance learning degrees have lower rates of retention and graduation than full time campus based undergraduate courses (Brunton et. al., 2016). There are a number of factors reported in the literature which affect online distance learning student experiences and retention, which are: time management skills, the ability to balance work, family with study, autonomy, community, sense of belonging, motivation, course design, and support structures at institutional, programme and teacher levels (Blackmon & Major, 2012; Brown, Hughes, Keppell, Hard, Smith, 2015; Buck, 2016; Holder, 2007; Sun, 2014; Veletsianos, 2012; Yang, 2017; Zembylas, Theodorou, Pavlakis, 2008). These factors shape online distance student identity within context of the course, the institution and in relation to their peers and teachers, see figure 21 below (Baxter 2012).

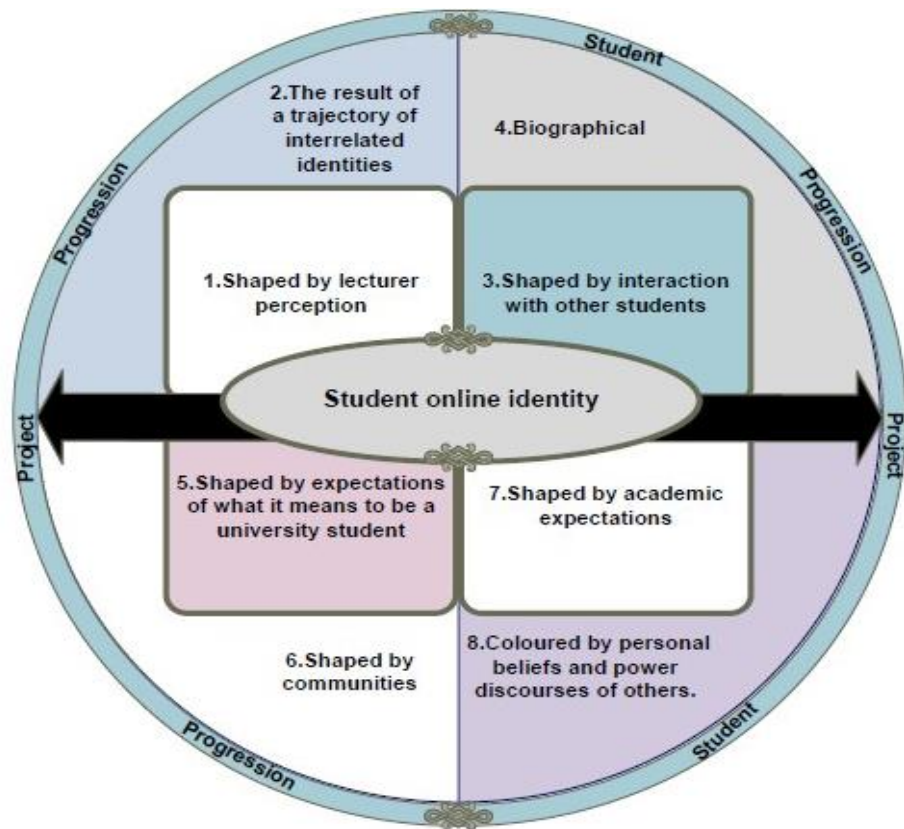


Figure 22 Student online identity (Baxter, 2012)

Students with more developed time management skills are more likely to continue on an online course (Holder, 2007). This involves establishing a sustainable study routine which can adapt and account for problems (Brown et. al. 2015). In addition to time management, strong organisational skills and the ability to keep on task are key to being a successful online distance learner (Buck, 2016). However, many online distance students struggle to follow a regular study schedule due to the challenges of balancing work, family and study (Brown et. al., 2015; Blackmon & Major, 2012; Buck, 2016; Darmody & Fleming, 2009; Sun, 2014; Zembylas et.al. 2008). Trying to fulfil multiple roles and juggle professional, family, social life, and study can cause online distance students to feel considerable stress (Brown et. al., 2015; Zembylas et. al. 2008).

Being an online distance learner involves greater autonomy than traditional campus based higher education (Comer, Lenaghan, Sengupta 2015). Online distance students have to be able to work independently and there is an increased need for self-regulation and self-discipline to meet the course requirements (Thompson, Miller, Franz, 2013). This greater need for autonomy can cause frustration, confusion and discomfort in some online distance learners (O'Shea, Stone, Delahunty 2015).

Feeling that they belong to a community of learners has a significant impact on the learning experiences of online distance students (Buck, 2016; Delahunty, 2012; O'Shea, Stone, Delahunty, 2015; Yang, 2017; Veletsianos, 2012). According to Baker (2010) "when students feel connected to instructors, classmates, and the program, their experience is more positive, which helps them stay in the program" (cited in Yang, 2017, p.24). The two factors that can support the development of a sense of community and belonging in students are establishing social presence and high levels of interaction in the course (Anderson & Elloumi, 2008; Buck, 2016; Veletsianos, 2012). Developing social presence in the course gives students a greater sense of connection to each other, the teacher and the course (Veletsianos, 2012). Social presence has been defined by Garrison, Anderson, and Archer (2000, p.89) as "participants' ability to project their personal characteristics into the community, thereby presenting themselves to other participants as 'real people.'" Interaction and social presence can be promoted through course design which promotes active communication between students and instructors using asynchronous discussion forums and synchronous online classes (Buck, 2016; Gauvreau, 2016). However, student experiences and perceptions of discussion forums is mixed, for some they enabled students to learn from other students from

different backgrounds and cultures (O'Shea, Stone, Delahunty 2015). For other students, discussion forums were intimidating confusing and unhelpful and they actively disliked and avoided their use (Baxter 2012; Selwyn, 2011).

Community can also be fostered through informal student interaction such as social media, study groups, and email (Andrews & Tynan, 2012; O'Shea, Stone, Delahunty, 2015). In a study conducted by Andrews & Tynan (2012) informal student networks were most beneficial for participants in terms of sense of community. Informal student networks can enable online distance students to form positive social relationships and close ties with fellow students (Zembylas et.al., 2008). The emphasis in the literature on building community is in response to the feelings of isolation often experienced by online distance learners (Barbera, 2009; Bolliger & Shepherd, 2010; Shaw & Polovina, 1999). Fostering a strong sense of community among students in online courses and establishing social presence can decrease students' feelings of isolation and disconnection (DiRamio & Wolverton, 2006; Phirangee & Malec, 2017).

Online distance students are commonly motivated to study for three distinct reasons: by the prospect of career progression, having missed out on higher education previously and self-development (Brown et. al. 2015). Motivation is a key predictor of students' ability to succeed in an online programme, students with a clear goal for study are more likely to persist to graduation (Buck 2016). Further, O'Shea et. al. (2015) found that the most important factor in student engagement were assignments, receiving good marks in assignments provided them with evidence to support their decision to study.

In Ireland, higher education institutional supports such as library, career advice, learning support, administration and counselling services are heavily focused on full time on campus students. This means that part time and off campus students have reduced access or sometime no access to vital university supports (Delaney & Farren, 2016; HEA 2012). This can lead to online distance students feeling less integrated and engaged into the higher education institution and feeling that they are a lower priority than campus based students (HEA, 2012; Yang 2017; O'Shea et. al. 2015). Clearly, this is an issue of equality, and if Irish higher education institutions want to increase the provision of online distance learning in line with the national strategy for higher education, changing the model of support for all students is a necessity.

This section has examined the literature on the factors affecting online distance students studying successfully. The next section focuses more closely on the learning experiences and study habits of online distance learners.

4.5 THE STUDY HABITS OF ONLINE DISTANCE LEARNERS

Although they are studying online, the study habits of online distance students follow traditional study activities such as reading, note taking and writing assignments and are similar to campus based students (Cakiroglu, 2014; Orton-Johnson, 2007). There are number of key study habits which contribute to successful study online; organisation, taking responsibility of learning, creating a positive study environment, time management and effective note taking, reading

and assignment writing strategies (Andrews & Tynan, 2012; Ashby, 2004; Brown et al. 2015; Buck, 2016; Watkins, Corry, Dardick, Stella, 2015).

Creating a positive study environment with a dedicated and quiet study space is an important organisational aspect for online distance students (Ashby, 2004; Buck, 2016; Cakiroglu, 2014). A further organisational aspect is the necessity to plan and structure their study around their other responsibilities effectively (Ashby, 2004). This can result in unusual study patterns which are highly individual such as studying late at night or early in the morning (Andrews & Tynan, 2012; Buck, 2016). In a study conducted by Andrews & Tynan (2012), they found that online distance learners were very resourceful at fitting study into their busy lives.

One major point of difference from campus based study, is that much of online distance students learning takes place outside of the teacher's view as they typically have on demand access to the learning resources of the course (Watkins, Corry, Dardick, Stella, 2015). In spite of this difference, there are some empirical studies which investigated the study habits of online distance learners. In a study of new online distance learners in Australia, Brown et al. (2015) identified three study approaches in the cohort: active-strategic, active-deep and passive-surface. Active-strategic online distance learners were task oriented, thorough, effective at managing and planning for study and spent a lot of time working on assignments. Active-deep learners were motivated by self-development and passive-surface learners lacked independence, had unrealistic expectations of higher education in addition to no previous experiences of university (Brown et al. 2015). These study approaches are a useful addition to the literature on the study habits of online distance learners.

Effective note taking is an important self-regulatory skill which is one of the most common activities in a face to face class, but is equally important for online distance learners (Watkins et. al., 2015; Cakiroglu, 2014;). However, Watkins et. al. (2015) found that online students were less likely to take notes if they had not been prompted unlike in face to face classes where students spontaneously take notes.

For some students learning how to use the technology that is necessary to learn effectively online is a struggle (Brown et. al. 2015; O'Shea et. al., 2015). Other students are comfortable in the online environment and are increasingly using online resources such as videos, open educational resources, and wikis to aid their comprehension of course content (Henderson, Selwyn, Finger, Aston, 2015). In a study of student perceptions of digital technology in Australian universities, Henderson et. al. (2015, p.1567) found that students found the most useful and supportive aspects of digital technology were the "watching and re-watching video lectures, and preferring to look at diagrams, animations and images as opposed to engaging with the written or spoken word". Further, Mitra, Lewin-Jones, Barrett, Williamson (2010) found that students were using video to better understand and clarify key concepts and course topics. This points to the significant growth in the integration of video content in online courses and in education more broadly (Kaltura, 2017).

4.6 CONCLUSIONS

This chapter has developed a profile of online distance learners by examining the key concepts, contexts and literature which resulted in an operational definition of online distance learning and the online distance learner for the present study. Further the chapter examined the factors that promote successful online distance learning and the study habits of online distance learners.

Finding appropriate definitions in the literature for online distance learning and online distance learner proved to be very challenging. There was a lack of consistency in the terminology and definitions for online learning, distance learning and blended learning in the literature and similar to the definitions of eportfolio and critical thinking, they were highly contested. None of the definitions quite fit the course profile at the centre of this study, therefore the operational definition for online distance learner and online distance learning discussed above were developed.

It is clear from reviewing the literature related online distance student learning experiences that they face very different challenges to campus based traditional students such as time management, balancing life commitments and developing a sense of belonging. Although online distance learners are studying online, their study habits follow traditional study activities, however they require greater autonomy and organisation skills as their learning is largely independent.

As online distance learners are the participant cohort of this study, this chapter provides an important contextual background on this group of non-traditional adult

learners. Further, this literature analysis informed the design of the study which is detailed in chapter five. In the next chapter, the research design, methodology and method are outlined. Chapter five builds upon and is shaped by the previous three chapters which analysed the literature on eportfolio, critical thinking and online distance learners and have informed the design of this research project.

5 CHAPTER FIVE RESEARCH DESIGN, METHODOLOGY AND METHODS

5.1 INTRODUCTION

This chapter details the research design and methodological framework for this study. The chapter outlines the aims of the study, research questions, the research paradigm, data generation design and process, data analysis and concludes with the role of ethics in this research project.

5.2 AIMS OF THE STUDY

The purpose of this study was to explore the nature of the learning experience with an eportfolio and its impact on the development of critical thinking skills for online distance learners at Open Education, DCU. The study focuses on the case of the learner experience of using an eportfolio and the process of developing critical thinking.

5.3 RESEARCH QUESTIONS

The principle area of investigation in this study is the interaction between critical thinking and learning with an eportfolio among higher education part time online distance learners.

The formulation of the research questions for the study was an iterative process which evolved over the life cycle of the doctoral study. The refining and reshaping of the research questions was informed by the detailed analysis of the literature on critical thinking, eportfolios and online distance learning in the previous chapters and by the case study context.

The early research questions for the study were:

1. How can eportfolios enhance the nature of the learning experience and the development of criticality among flexible learners?
2. How can eportfolios be used to enhance criticality in learning?
3. Is it the process of reflection that improves the criticality or is it the medium - the eportfolio?
4. What is the nature of the learning experience when students are interacting with the eportfolio technology?

These research questions were refined over time into the final research question for the study:

Can eportfolios enhance the nature of the learning experience and the development of critical thinking among online distance learners?

Further, the research question can be considered as two interlinked parts:

- Part 1: Can eportfolio enhance the nature of the learning experience among online distance learners?
- Part 2: Can eportfolio enhance the development of critical thinking among online distance learners?

5.4 RATIONALE FOR THIS STUDY

This study set out to explore whether eportfolio practice might enable students to develop critical thinking skills and enhance their learning experiences in higher education. This research topic is important because as established in chapter two, developing university students who can think critically is a widely recognised but unfulfilled goal of higher education (Dunne 2015; Facione 1990; Ennis 2016; Willingham, 2007). Further, as discussed in chapter 3, the eportfolio literature

indicates that eportfolio based learning may enable students to develop critical thinking skills. This research topic is important because very little is known about the impact of eportfolio practice on critical thinking development, which is a key finding from the analysis of the eportfolio literature in chapter 3 of this study. This thesis directly addresses the clear gap in the eportfolio research in relation to critical thinking.

5.5 PHILOSOPHICAL UNDERPINNINGS

This section outlines the philosophical underpinnings of this study, this study is shaped by my (the researcher) worldview which influenced my approach to this research study and guided my enquiry (Creswell, 2007). This research study is qualitative in nature and grounded in the constructivist paradigm (Bryman 2008, Braun & Clarke, 2013). The constructivist paradigm stems from hermeneutics and emphasises the study of interpretive understanding of meaning (Mertens, 2015). Constructivist research is defined by Mertens (2015, p.17) as being guided by the assumptions “that knowledge is socially constructed by people active in the research process and that researchers should attempt to understand the complex world of lived experience from the point of view of those who live it”. In contrast with positivist research conceptions of one reality, constructivist holds that there are multiple realities of reality which are socially constructed (Mertens, 2015). Qualitative research is inherently subjective and does not strive for the objectivity characteristic of positivist research. The constructivist paradigm is compatible with this subjectivity in which the researcher engages closely with participants (Creswell, 2007; Mertens, 2015).

The rationale for grounding this study in a constructivist paradigm is for the following reasons: this study aimed to explore the nature of the learning experience with an eportfolio and its relationship to critical thinking through the multiple perspectives, experiences and interpretations of online distance learners. These aims are compatible with both the constructivist and pragmatic paradigms however the pragmatist conception of ontology as a single reality does not fit with this researcher's conceptions of reality.

This study takes a critical social scientific approach to technology which is congruent with a constructivist paradigm. The narratives surrounding technology in higher education tend to view educational technology as a panacea or as a disrupter of the current system which will cause transformation (Bryant & Chittum, 2013; Farrelly, 2014; Goodfellow, 2014; Selwyn, 2016). These narratives are also prevalent in the eportfolio literature and were thoroughly discussed in chapter three. These narratives should be considered cautiously, bearing in mind Selwyn's (2016) argument for the need to be sceptical of the claims made about technology in education. Therefore, this study adopts a critical social scientific approach to educational technology rather than a technological deterministic one which is prevalent in the educational technology discourse (Selwyn, 2010). This study argues that technology can be an enabler of learning, but it is important to focus on the pedagogy and the learning that has been enabled and not on the technological tool. It is through this lense, that eportfolio are explored in this research study, with an intentional focus on eportfolio practice and pedagogy rather than technology.

Constructivist research is the product of the values of the researcher, whose own background shapes interpretation (Mertens, 2015). Therefore, this study is interpretive in nature, as I interpret the data and its construct meaning which is

shaped by my life experiences. My background is Irish middle class. My parents were professionals and attended university, they placed a high value on education and both my siblings and I attended university and embarked on professional careers. My parents' values about the importance of education, are the values that my husband and I are passing on to our two daughters. In addition, my history disciplinary background both as student and as a lecturer has shaped my approach to research, consideration of evidence and approach to analysis. Although I was afforded privileged access and opportunity to higher education, this is not the case for many people. My interest in online distance education and eportfolio began initially as a curiosity about the technological aspects of online delivery, but more recently my views have developed to consider the issue of equality of access for adults to higher education. The current Irish funding model for part time higher education is deeply inequitable.

My interest in eportfolios has spanned a ten-year period, I am aware that my interest and opinions about the potential positive impacts of eportfolio based learning may have an impact on the findings of the study. Therefore, I have strived to adopt a critical approach and remain open and inquiring in throughout the research process.

My worldview was shaped by my background and experiences, which in turn has shaped this doctoral study. Personal bias based on my background and worldview may affect this research project. For this reason, a reflexive approach has been taken where great attention is paid to identify, explore and set aside such biases.

5.6 DESIGN OF STUDY

Following on from the adoption of a constructivist research perspective, a qualitative case study was designed. During the process of designing the study, different qualitative strategies were considered and rejected. Ethnography was unsuitable as participant observation was not feasible due to the mode of study of online distance learning, phenomenology was not suitable as it did not capture the developmental aspect of critical thinking and lastly grounded theory was not consistent with the exploratory nature of the study (Creswell, 2007; Mertens 2015).

According to Yin (2014, p.2) the case study approach is preferable to other research designs when “(1) the main research questions are “how” and “why” questions (2) a researcher has little or no control over behavioural events (3) the focus of study is a contemporary phenomenon”. Further, Yin (2014) emphasises that research case study is situated in its real world context. As learning with an eportfolio was a contemporary and complex phenomenon which has been underexplored, the case study approach was suitable. Further, the qualitative case study design was therefore selected in light of the exploratory nature of study which sought to understand and interpret online distance learners’ experiences of eportfolio and the development of critical thinking and how their rich descriptions constructed a complex view of the learning experience in the context of Open Education, DCU (Braun & Clarke, 2013; Creswell, 2007). This approach is consistent with Stake’s (1995, p.16) conceptualising of the aim of qualitative case studies, which “seek greater understanding of the case. We want to appreciate the uniqueness and complexity of its embeddedness and interaction with its contexts.”

In conclusion, in light of the research questions and remaining cognisant of the theoretical and methodological approaches of previous research, a case study approach with a qualitative methods design was adopted for this research.

5.7 THE CASE STUDY

The study focuses on the case of the learner experience of using an eportfolio and the process of developing critical thinking. A case study is defined by Creswell (2007, p.73) as “a qualitative approach in which the investigator explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information (e.g., observations, interviews, audio-visual material, and documents and reports), and reports a case description and case-based themes. For example, several programs (a multi-site study) or a single program (a within-site study) may be selected for study.”

Using Creswell’s (2007) above model, this study adopted a qualitative approach that explored the case of the learner experience of using an eportfolio and the process of developing critical thinking over the course of one academic year. The study focuses on the case of the learner experience of using an eportfolio and the process of developing critical thinking. This exploration involved an examination of two sources of information; participant eportfolio entries and interviews. More specifically, this study adopted an exploratory holistic single-case design where the “object of the study” or the single issue is that of the learner experience of eportfolio based learning and the process of developing critical thinking (Creswell, 2007; Stake, 1995; Yin, 2014).

The “case” is framed by the research question that informed the design of the study, data generation instruments and analytical approach (Creswell, 2007; Yin, 2014,). The case study was bounded by the following theoretical, temporal and institutional boundaries. A theoretical boundary is derived from the research questions and the two interlinked theoretical frameworks that encompasses eportfolio practice and critical thinking skills, which were outlined in chapters two and three. In this case study, the conceptualisation of learning portfolio practice is that the process of eportfolio based learning is transformative, personal and empowering for learners. In addition, the model of critical thinking for this case study is that critical thinking is a judgement process which enables decision making. It is encompassed by the skills of interpretation, analysis, evaluation, inference, explanation and self-regulation and the dispositions of being systematic, judicious, truth seeking, confident in reason, open-minded and analytical. Critical thinking is strongly rooted within the discipline context as discussed in chapter two.

A temporal boundary was defined by the period 2015-2018, which encompassed the design, data generation and analysis phases of this study. A further temporal boundary was applied to the data generation process which took place over one academic year, from September 2016 to June 2017. The rationale for following an academic year was that the data generation followed the academic unit of one module of study.

Finally, there was an institutional and programme boundary. This was defined through the selection of a cohort of online distance learners studying on the BA (Hons) Humanities/ BA (Hons) Humanities (Psychology Major) at Open Education, DCU. The module setting for the study was an intermediate sociology module called Soc3a-Power, Social Order; Crime Deviance, Work and Employment.

5.8 DATA SOURCES AND GENERATION

The literature reviews of critical thinking, eportfolios and online distance learning in conjunction with the research questions was used to develop the data generation instruments. Two sources of evidence were drawn upon for this study; the written, visual and multimedia artefacts from the learner's eportfolio and semi structured interviews.

5.8.1 Eportfolios

Eportfolios were considered as an appropriate data generation method for this study as they are a form of participant generated textual and visual data which directly captures the thoughts, ideas, meanings of participants from within the practice context of the eportfolio (Braun & Clarke, 2013; Lichtman, 2014). As a participant generated product, eportfolio as a data generation method could be considered similar to a researcher directed diary (Braun & Clarke, 2013). Although previous studies (Ayan & Seferoglu 2011, Chau & Cheng 2010) have used this approach to data generation, no previous study has used participant's eportfolio as stimulus during interviews

Participants completed five eportfolio entries over the course of one academic year at key points in their learning journey. Eportfolio entries followed a prescribed structured template of critical questions which was set by the eportfolio data generation instrument and intended to encourage reflection about that week's learning, examples of coursework/class work-written and visual, and stimulus questions designed to encourage critical thinking about their learning (See figure 23 below).

1	Reflective learning portfolio entry-1	7 th November 2016
2	Reflective learning portfolio entry-2	5 th December 2016
3	Reflective learning portfolio entry-3	9 th January 2017
4	Reflective learning portfolio entry-4	20 th February 2017
5	Reflective learning portfolio entry -5	27 th March 2017

Figure 23 Schedule of eportfolio data generation

The participants were interviewed with the written, visual and physical artefacts from their eportfolios were used as stimulus during the interviews using a technique similar to that of “photo elicitation” (Prosser & Loxley, 2008). This approach was somewhat similar to a diary-interview method, where diaries are used to stimulate and enrich the interview method (Braun & Clarke, 2013).

5.8.2 Design of the Eportfolio Instrument

The eportfolio data generation instrument was shaped by the research questions, the theoretical frameworks for critical thinking and learning portfolio practice. The eportfolio data generation instrument or critical questions template was designed as a series of eight critical question prompts which guided participants eportfolio reflections (See Appendix 1. Eportfolio Data Generation Instrument) The critical question prompts were closely aligned with the critical thinking skills from the theoretical framework of this study and drew on King (1995) critical thinking prompts. In addition to responding to the critical prompts, participants were asked

to provide three pieces of evidence of their learning to support their written reflection piece and to write a brief rationale for the inclusion of the evidence.

5.8.3 Interviews

Interviews were seen as an appropriate data generation method for this study as they are suited to experience type research questions, and the exploration and understanding of participants' perceptions (Braun & Clarke, 2013). Linking back to the primary research question of the study: *Can eportfolios enhance the nature of the learning experience and the development of critical thinking among online distance learners?* It is clear that the exploration of the experience and understanding of learners are the fundamental aims of the study, and therefore interviewing was an appropriate data generation method to pursue. When designing the study, other qualitative data collection methods were considered and rejected. Observation was not practical due to the mode of delivery of the course. Focus group are concerned with common understanding of an issue, where this study was focused on the individual journeys of participants rather than the collective. Questionnaires were not detailed or in depth enough and do not enable the researcher to become close to participants (Mertons, 2015). A semi-structured interview approach was selected as it is more flexible than a structured interview but has the safety net of an interview schedule which an unstructured interview lacks (Bryman, 2008).

As the case study context was an online distance degree programme, participants required flexible modes of participation for the interviews. Participants were offered a choice between online or face to face interview. There are some drawbacks to online interviewing, as it can be more difficult to develop rapport and

detect non-verbal responses, however online interviewing is convenient and accessible (Lichtman, 2014).

Two phases of interviews were planned, the first interview was scheduled at the midpoint of the study and second interview was scheduled at the end of the study. The rationale for having two rounds of interviews was to capture the development of critical thinking in participants and to explore their changing and developing experiences of learning with an eportfolio.

5.8.4 Design of Interview Schedule

The form of interview designed was semi structured. An interview schedule was created which contained twenty-six open-ended questions which were shaped by the research questions, the theoretical frameworks for critical thinking and learning portfolio practice (See Appendix 2 for Interview Schedule V.1). The interview schedule contained questions about demographics, studying Soc3a, learning with an eportfolio and critical thinking and the interviews ended with a “walkthrough” of the participants eportfolio

During the first round of interviews, the first version of the interview protocol initially asked general questions about the participants’ experiences of using an eportfolio, and then later separately an eportfolio walkthrough was conducted. It became clear during the first round of interviews, that the participants found it difficult to recall the details of their eportfolios without having it open during the

general questions, after five interviews, I merged the two elements into one and combined the general questions with the eportfolio walkthrough.

During the second round of data collection, the interview protocol was modified and slightly more specific questions were utilised, this was due to the insight gained through the initial data analysis of the first set of interview data, which merited the refining of the interview protocol for the second round of interviews (See Appendix 3 for Interview Schedule V.2).

5.9 DATA GENERATION PROCESS

Data generation in this study occurred in five phases, starting with recruitment, followed by participant induction to eportfolio, then concurrent participant completion of eportfolio entries and interviews (See figure 24 below).

Phase	Description	Time Periods	Data Collection Tools used
Recruitment phase	General information session	September 2016	Plain Language Statement, Consent Form
Phase 1	Briefing and support sessions on using the eportfolio platform	September-November 2016	Eportfolio critical questions template-instrument
Phase 2	Participants completed 5 eportfolio entries	October 2016-March 2017	Eportfolio critical questions template-instrument
Phase 3	Interview 1	January 2017	Semi Structured interview
Phase 4	Interview 2	May-June 2017	Semi Structured Interview

Figure 24 Summary of data generation activities

5.9.1 Participant Selection & Recruitment

Purposive sampling was used to select participants for the case study. This was based on cases that were deemed to be information rich and which met the criteria identified in the research question of the study (Braun & Clarke 2013; Lichtman 2014). Potential participants were selected based on the following criteria:

- Background information-age, gender, area of origin
- Taking the module Soc3A- Power, Social Order, Crime, Work and Employment (Intermediate) module as part of the BA (Hons) in Humanities/ BA (Hons) Humanities (Psychology Major)
- Studying on the BA (Hons) Humanities/ BA (Hons) Humanities (Psychology Major)
- Online distance learners
- Mature adult learners over the age of 23
- Studying at Open Education, Dublin City University.

I was given granted access to the cohort of Humanities students by the relevant institutional gatekeeper for the programme and module, and staff involved in the design and teaching of the module agreed to use eportfolios as one of the module's learning activities for the academic year 2016/2017. I was not directly involved in teaching or assessment on the module but did provide technological support for the participants' eportfolios.

Thirty-five potential participants that fell within the set boundaries of the case study were approached at the start of the academic year in September 2016 and were invited to take part in the study. Potential participants were approached during the first face to face tutorial session on the 15th of October 2016 for Soc3A Power, Social Order, Crime, Work and Employment. Potential participants were given a copy of

the plain language statement (See Appendix 4. Plain Language Statement) and if they wanted to participate they were invited to complete the informed consent form (See Appendix 5. Consent Form). As some potential participants were absent from the session, an email was sent to the absent cohort, inviting them to participate and including the plain language statement. Following this process, twenty-four participants consented to take part in this study. Participant recruitment was carried out in accordance with the TCD School of Education ethical guidelines, which is further detailed in section 5.11 ethical considerations below.

5.9.2 Data generation process: Eportfolio

The eportfolio platform used for the study was the institutional platform called Loop Reflect, a customised Mahara instance. The rationale for using the institutional platform was partially convenience as the students had access with no additional login details required. There was also an ease of use factor as Loop Reflect was integrated into the institutional virtual learning environment (VLE), and this would lessen the potential technical difficulties for the participants as they were already somewhat familiar with the VLE. Loop Reflect had the required functionality for the study, as a student centred web based platform that enabled easy incorporation of text, rich text media, images and files. Finally, as Loop Reflect was the institutional platform, limited technical support and basic resources were available to the participants (see figure 25 below).

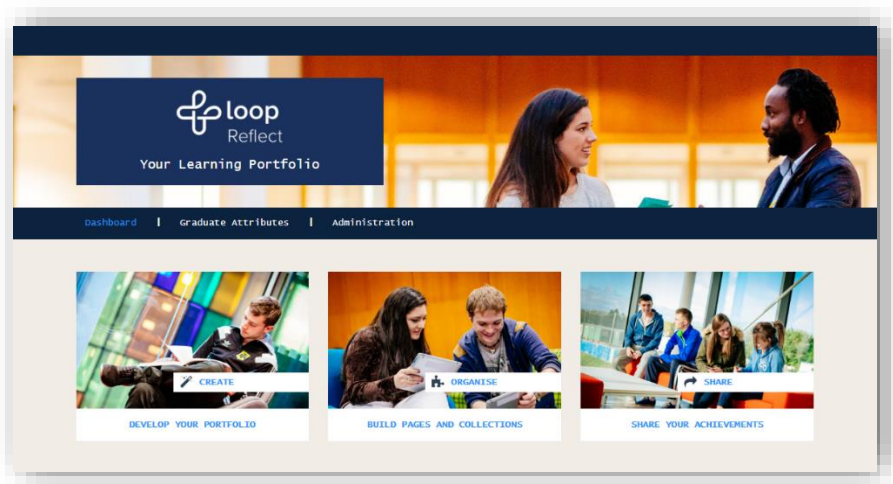


Figure 25 Loop Reflect

For the purposes of the research study, the participants were set up as a separate cohort on Loop Reflect, which gave the researcher additional administrator rights and enabled the customisation of each participant's eportfolio entry templates for the study. Each participant was set up with a pre-set collection of five eportfolio entries which included the eportfolio data collection instrument. The eportfolio was student owned, and only the researcher and the module tutors could access the eportfolio entries.

This study followed eportfolio implementation best practice guidelines by Ring & Ramirez (2012) which emphasised front loaded student and staff support, the use exemplars and supporting documents. I provided technical support to the student cohort and two module tutors. The student support was front loaded with three online tutorials on using Loop Reflect being provided, questions were answered on the module online discussion forum and by email and phone. A week before each eportfolio entry was due an offer of a further support tutorial was posted on the discussion forum. For the tutors, the main support required was with marking the

eportfolios at the end of the assignment period, a custom rubric was designed for the assignment and provided detailed marking guidelines to the tutors.

In each of the five eportfolio entries, participants included three pieces of evidence to support their entry. Participants included a wide variety of evidence: photographs, references to readings, YouTube video links, diagrams, mind maps, word clouds, first person video diaries, see a participant eportfolio example in figure 26 below. These data sources add to the richness of the participants' thick description of using an eportfolio and provided "very particular information about our existence" (Prosser, 1998, p. 1, Thomas, 2016).

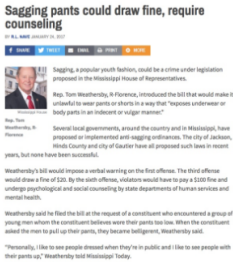
Evidence 1 - My Journal



Your reflection

This is the final entry of this reflective exercise. Despite my early reservations, I consider assignment as beneficially challenging and ultimately enjoyable. Furthermore, reflective learning has generalised to my daily life, and I have become aware of my metacognitions. For example, I am preparing a case study on how sex-workers are characterised and stigmatised in most societies. While doing preliminary research, I discussed the topic with my DCU cohort who displayed vastly different perspectives to my own on the issue. The disparity in opinions caused me wonder how I came to my views and interest in the subject. Further, I considered my biases and how I could adjust them as needed to complete the assignment. Consequently, I began thinking about my thinking. Often, I find myself reflecting on my learning and actions in this helpful way. As a result of the reflective assignment and my new awareness, I have taken to journaling before bed (Evidence 1, My Journal). Rather than reflecting on my daily activities, I journal about how and why I chose to navigate the day as I did. Inexplicably, this documentation of my contemplations frequently leads me to a non-sequitur, my emerging sociological imagination.

Evidence 2 - Sagging pants could draw fine, require counseling



Prior to studying sociology, my understanding of power and deviance in society was indistinct. However, SOC3A has given me glasses with which to see. For example, a proposed bill in Mississippi, U.S. seeks to make it unlawful to wear saggy, loose trousers which "exposes underwear or body parts in an indecent or vulgar manner" (Evidence 2, Sagging pants could draw fine, require counseling; Nave 2017). Multiple violations of this law provokes escalating consequences, the sixth offence being a \$100 fine and mandatory social and psychological counselling. This fashion choice is strongly associated with hip-hop and the African-American subculture. The proposed law attempts to make saggy pants both socially and lawfully deviant, thereby negatively sanctioning a cultural expression. I perceive the association between a fashion choice and mental health powerfully suggests the perceived deviancy of African American culture. Previously, before studying sociology, I would have simply viewed this law unfair and racist. However, after just one term of study, I view this legislation through Gramsci's (Ransome, 1992, p.32) lens and believe that the dominant class is seeking to sustain moral and ethical control. I further believe, this law will be supported by the social majority in the area who, due to implicit biases, desire to and feel entitled to control minorities coercively. As I contemplated the implications of this law, I remembered that California only eradicated employers requiring women to wear dresses to work in 1993 (the year I graduated high school). Ruminating on laws used to control groups of people led to research and I began reading related journal articles (Evidence 3, Dress to Impress: Employer Regulation of Gay and Lesbian Appearance). While I explored the topic, my ability to easily navigate the online library as well as use loop became apparent. Therefore, I am growing as a learner of both academia and technology.

Evidence 3 - Dress to Impress: Employer Regulation of Gay and Lesbian Appearance



In summary, I have come very far in my learning. My study habits are strong as is evidenced by my increasing grades and confidence. Also, I can navigate the online environment without effort and seek additional learning outside of the course content. Higher education has a positive effect on me and I'm eager to see how I progress in the coming years.

References

Nave, R.L. (2017). Sagging pants could draw fine, require counseling. *Mississippi Today*, [online] Available at: <http://mississippitoday.org/2017/01/24/sagging-pants-could-draw-fine-require-counseling/> [Accessed 22 March 2017]

Figure 26 Participant eportfolio example

5.9.3 Data generation process: Interviewing

The interview data was collected in two phases: at the midpoint of the academic year in January 2017 and at the end of the academic year in April 2017. During the data generation process, thirty-eight semi-structured interviews were conducted. Interviews were conducted either face to face or online depending on the participant's' location and preference. The interviews lasted between 40-80 minutes. Eighteen interviews were face to face, seventeen interview were online and three were conducted by phone.

The setting for the face to face interview was the researcher's office located in DCU. Prior to the first and second round of interviews, all participants received an outline of the interview questions via email. At the beginning of each interview the purpose of the study was explained to each participant in detail. The interview schedule was used in each interview, however the researcher was flexible and deviated from the schedule in order to probe deeper and ask follow up questions. Each interview was recorded using the software Camtasia and a dictaphone. The online interviews were conducted in a private online classroom using Adobe Connect. The online interviews were recorded using Adobe Connect and Camtasia. Due to technical difficulties related to connectivity three online interviews were abandoned and then conducted by phone.

5.10 DATA ANALYSIS

Data analysis was an ongoing process throughout the latter stages of the project, following a "coding is analysis" circular model of generation and analysing data (Miles & Huberman, 1994). The data led analytical approach for the study was

Braun & Clarke's (2006) six phases of thematic analysis which was used to explore the affective, physical and cognitive "nature of eportfolio learning". Braun & Clarke (2006, p.78) define "thematic analysis is a method for identifying, analysing and reporting patterns (themes) within data. It minimally organizes and describes your data set in (rich)detail".

The rationale for adopting the data analysis method of thematic analysis was twofold: Firstly, as the research question was conceptual in nature, themes were therefore important. Secondly, thematic analysis was an effective and flexible approach for focussing on the key issues of eportfolio learning and critical thinking development thereby understanding the complexity of the case (Braun & Clarke, 2013; Creswell, 2007).

The two sources of data for the project were the twenty-four participants eportfolio entries (5 each) and then the two sets of interview data which resulted in 20 interviews in the first cycle and 18 in the second cycle. In each of the five eportfolio entries, participants included three pieces of evidence to support their entry. Participants included a wide variety of evidence: photographs, references to readings, YouTube video links, diagrams, mind maps, word clouds, first person video diaries. These data sources add to the richness of the participants' thick description of using an eportfolio and provide "very particular information about our existence" (Prosser, 1998, p. 1; Thomas, 2016). These participant generated artefacts are inextricably linked to the eportfolio and the interviews, therefore require simultaneous, not separate analysis (Guillemin & Drew, 2010). This is a reflexive methodological position which supports integrative techniques that include all data sources (Guillemin & Drew, 2010). Therefore, the images, text, multimedia data

from the participant eportfolio evidence were analysed thematically along with the text based data and supported the text based analysis.

The data were analysed following the Braun & Clarke (2006) six phase approach to thematic analysis (see figure 27 below).

Six Phase Approach to Thematic Analysis- Braun & Clarke (2006)	
1. Familiarizing yourself with your data	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes	Collating codes into potential themes, generation all data relevant to each potential theme.
4. Reviewing themes	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Figure 27 Six phases of thematic analysis (Braun & Clarke, 2006)

5.10.1 Phase 1

In phase 1, the interview data was transcribed and checked against the recording, then prepared for analysis. Then, in order to gain an understanding of the raw data I immersed myself in the data by reading and thinking about the eportfolio entries and the interview transcripts, noting down my initial ideas and highlighting interesting features.

5.10.2 Phase 2

In phase 2, initial codes were generated by reviewing the first two eportfolio entries line by line with labels being generated and written beside the relevant data chunk, this was done manually using paper and pen (See Figure 28).

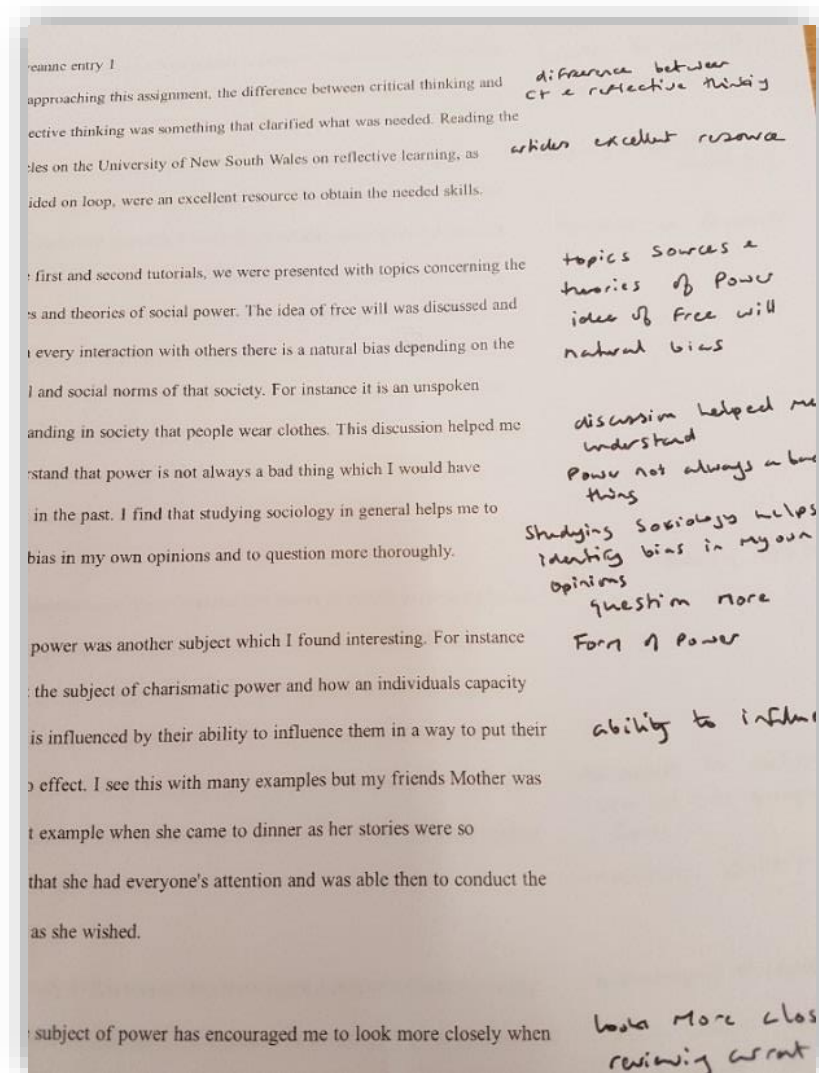


Figure 28 Paper and pen

Then I put all the labels onto a large piece of paper and began to group them in a list of codes and code families (See figure 29).

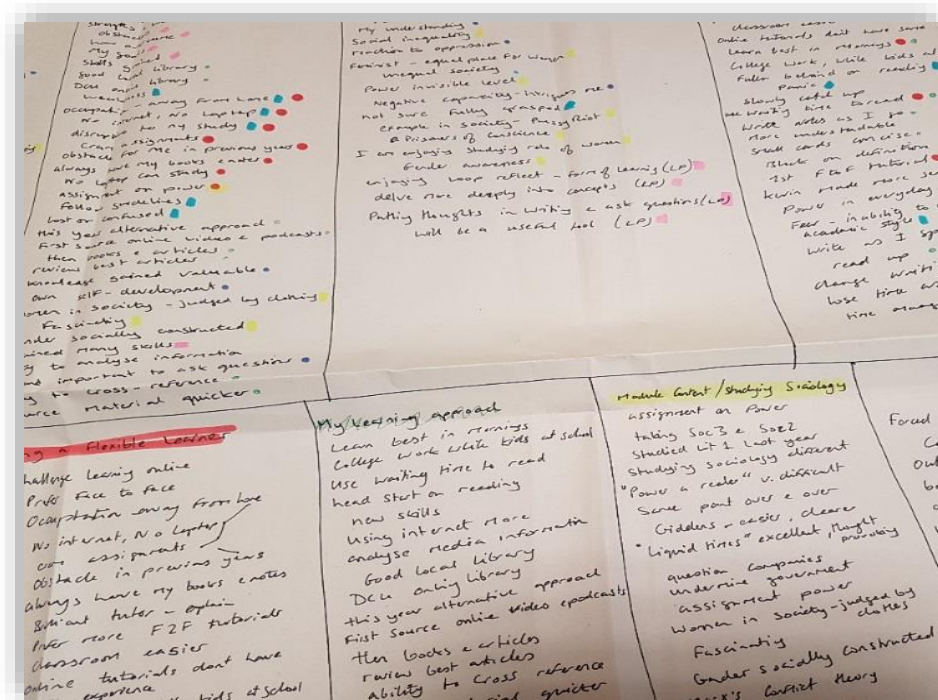


Figure 29 Generating initial codes

First cycle codes were generated which aimed to capture the essence of the research story and then clustered together into an initial list of code families (Lichtman, 2014; Saldana, 2009). After I felt the codes were well set, they were transferred into the computer assisted qualitative data analysis (CAQDAS) software programme NVivo 11 (Saldana, 2009). Nvivo facilitates the grouping of emerging themes and or ideas as nodes within the software.

Once the initial codes were set up as nodes in Nvivo, and further organised hierarchically into parent nodes and child nodes, data sources were coded under a number of nodes, if they fitted more than one node, this is shown in figure 30 below:

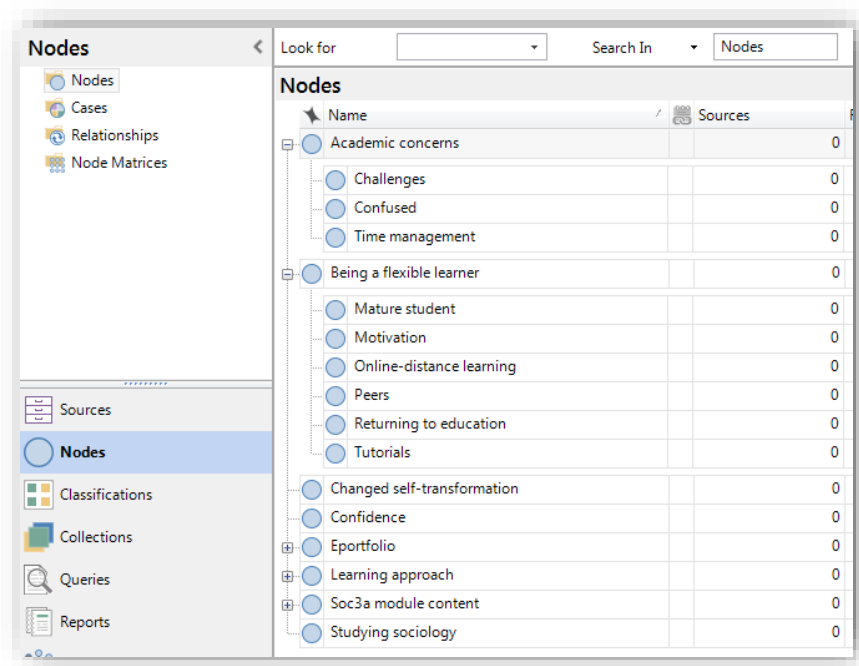


Figure 30 Initial codes in Nvivo November 2016

The two data sets of eportfolio data and interview data were integrated during the analysis process. Using the Nvivo software each data source was read through carefully and manually coded. Firstly, the eportfolio entry data set was coded in a systematic fashion, manually collating relevant data to each code. Then, the same approach was followed with the first set of interview data and subsequently for the second set of interview data, as the data became available and ready for analysis, over the period November 2016 to August 2017. As each data set was manually coded, the nodes were reviewed, refined and reorganised. A case node was created for each participant in Nvivo 11 and the data sources were coded to each participant case node, this enabled the analysis of the data at participant level as well as thematic node.

5.10.3 Phase 3

In phase 3, the potential codes were collated into candidate themes. At this point the initial themes were reviewed and refined, collapsed and renamed and

redundancies were removed (Lichtman, 2014). An initial thematic map was created to aid this process of sorting and grouping of candidate themes and sub themes (see figure 31 below).

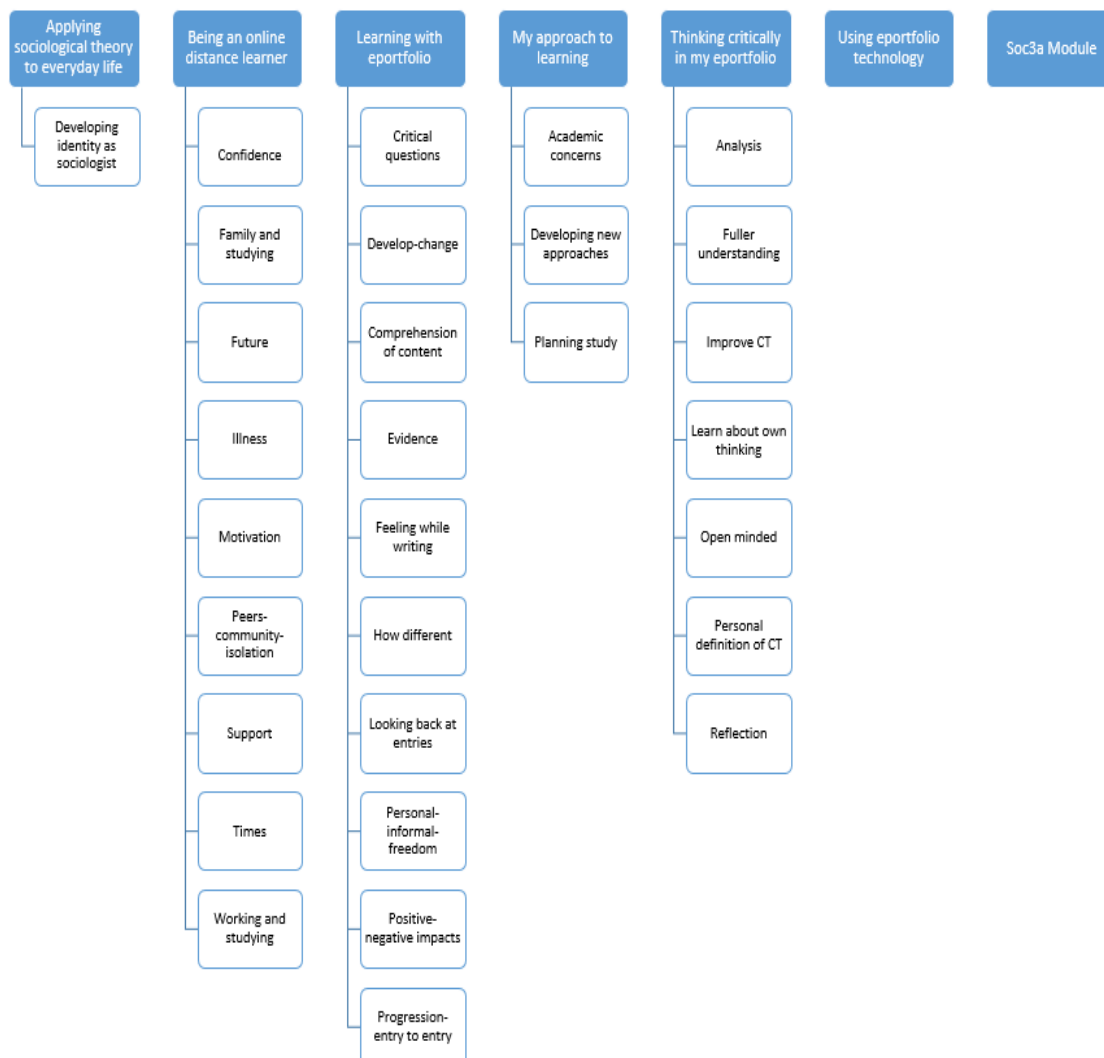


Figure 31 Initial thematic map

5.10.4 Phase 4

In phase 4, each theme was reviewed and refined further, each theme was examined in relation to the coded extracts and assessed for internal homogeneity and external heterogeneity (Braun & Clarke, 2006). Two levels of reviewing and refining themes were used, level one involved reading the coded data extracts in

each parent node and child node in Nvivo were reread and considered whether they fit in that node, if they did not fit, those data extracts were recoded or discarded (Braun & Clarke, 2006). Any additional data within themes that was missed in earlier coding stages was coded during this phase. A further candidate thematic map was then created (see figure 32 below).

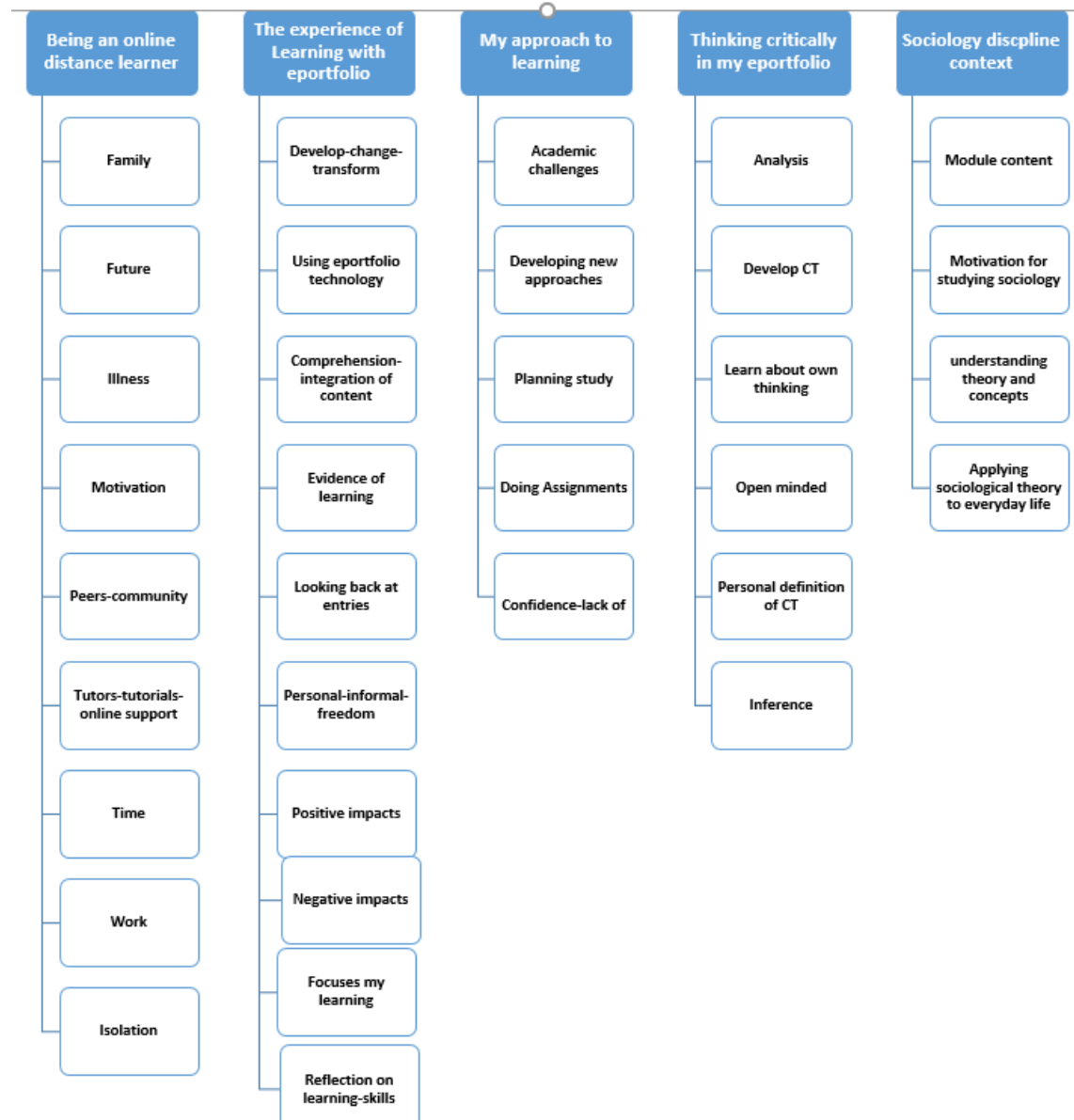


Figure 32 Further refined thematic map

Level two refining and reviewing themes was then carried out in relation to the entire data set, each theme was considered in relation to how it fit with the entire data set. Analytical tools in Nvivo 11 were used to aid this phase of the analysis. Coding queries were used to examine patterns in the data, such as the thematic child node developing critical thinking in relation to each participant case and graphs were created to visualise the patterns (see figure 33 below).

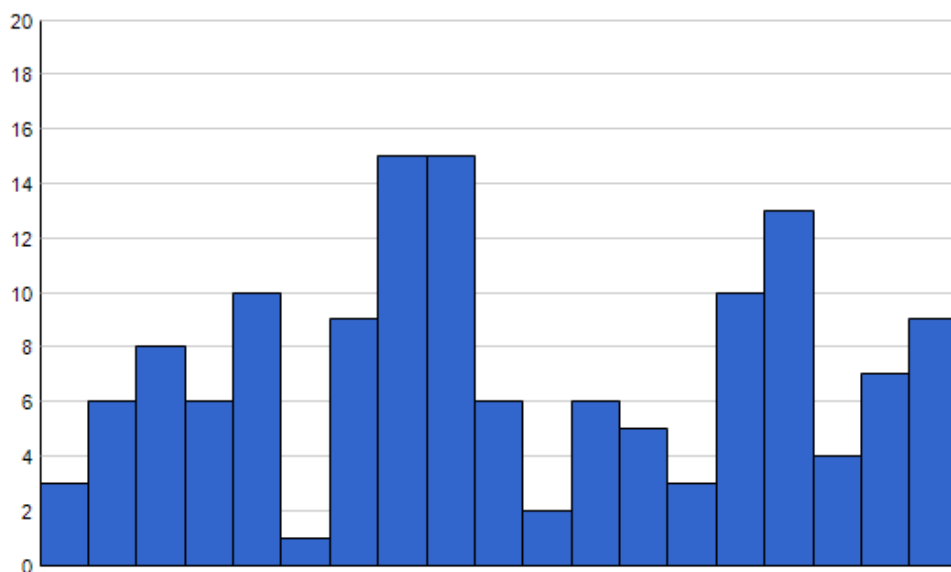


Figure 33 Coding query: participant cases and critical thinking

Further Nvivo 11 queries such as a framework matrix, word frequency and cluster analysis were used to examine patterns in the data and to examine the coherence of the themes and sub-themes. A cluster analysis of a thematic parent and child node which analyses coding similarity was used to examine the relationship within a theme of the sub themes (see figure 34 below).

After the themes, sub-themes and the entire data set were reviewed and refined, it was evident that further coding and recoding was not necessary and a point of saturation was reached, at that point phase four was deemed complete.

5.10.5 Phase 5

After the reviewing process described above was finished, a final thematic map of the data was created (See figure 36 below).

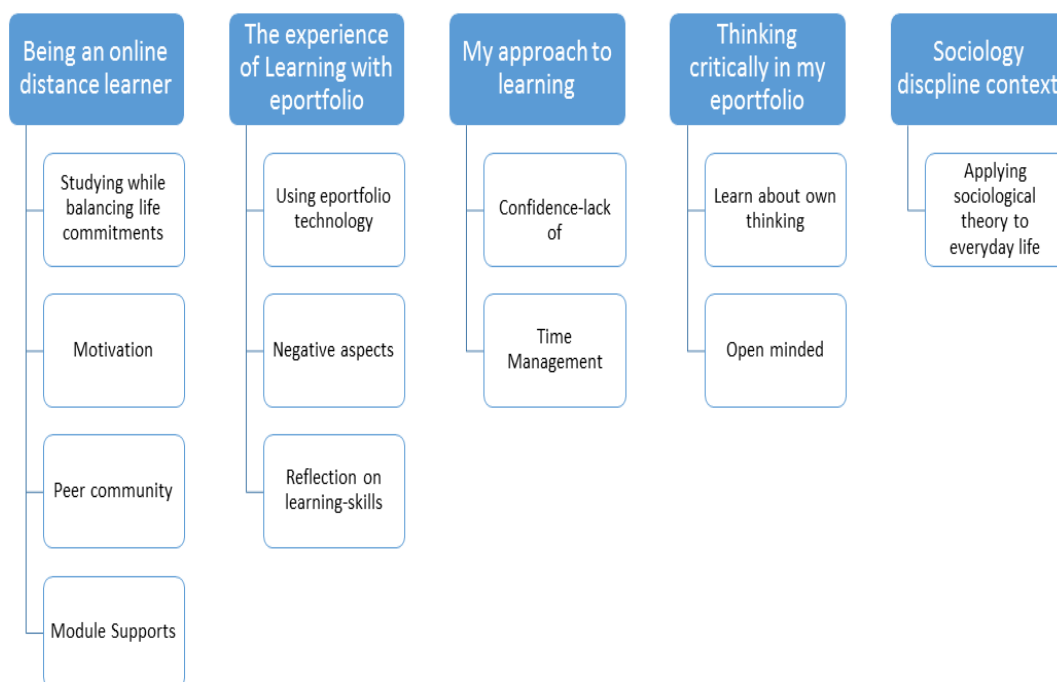


Figure 36 Final thematic map

Each of the five themes was defined and refined. A short definition which encapsulated the essence of each theme was created (Braun & Clarke, 2006). See figure 37 below.

	Theme	Definition
1	Being an online distance learner	This theme encapsulates the challenges of being an online distance learner in terms of balancing competing demands of family, work and illness, which impacted on learners' ability to find sufficient time for studying. The experience of being an online distance learner was described as being more isolated than a campus based context, however participants emphasized how the role of peer support, the tutor, tutorials, and online discussion fora enabled them to overcome this sense of isolation.
2	The experience of learning with an eportfolio	This theme captures the learner experience of learning with an eportfolio. The positive impacts of using an eportfolio on their learning with regard to evaluating their progress, engagement with the module, reflecting on their process of learning and for developing self-awareness of their academic development. Some negative aspects were noted such as the eportfolio is time consuming, stressful, of no benefit and repetitive. The experience of learning with an eportfolio was perceived as very different from other modes of assessment in terms of being personal, informal and having more freedom to express themselves. The eportfolio provided learners with a place to experiment with new ideas, to apply the sociological theory learned in the module to everyday life, to develop their sociological imagination.
3	My approach to learning	Personal approaches to planning, learning, study skills and doing assignment were detailed by participants, with regard to their development as learners. Reflecting on their learning prompted participants to identify academic challenge and try new study techniques which allowed them to grow in confidence about their personal approaches to learning.
4	Thinking critically in my eportfolio	The eportfolio provided a place for learners to think deeply and critically about themselves and their learning in relation to the module content. Both the module content and learning with an eportfolio had an impact on the development of their critical thinking skills with regard to self-regulation, open-mindedness, analysis and inference.
5	The Sociology discipline context	The discipline context of sociology is an important element to the learner experience of learning with an eportfolio. The sociological theory and content of the module shaped and framed the entire learning experience. The process of understanding the theory and content and applying sociological concepts to everyday life was enabled by learning with the eportfolio. The eportfolio provided participants with a place to experiment with new ideas, to apply the sociological theory learned in the module to everyday life, and to develop their sociological imagination.

Figure 37 Theme names and definitions

5.10.6 Phase 6

Once a set of fully worked out themes has been produced, the final phase in the Braun & Clarke (2006) approach to thematic analysis is the production of the report.

In the context of this study, that resulted in the writing of the findings and discussion sections.

5.11 ETHICAL CONSIDERATIONS

This doctoral study was guided by ethical principles throughout each step of the research process. This study was guided by the overarching ethical principles of avoid harm to participants, ensure informed consent, avoid the invasion of participants' privacy, and do not deceive participants (Bryman, 2008). In addition, my primary guide to ethics was the Trinity College School of Education Ethical Guidelines for Educational Research (2017) which sets out the following guidelines to be followed by researchers which are summarized below:

1. Research should be based on informed consent
2. Participants should be anonymous and pseudonyms used
3. The privacy of participants should be respected
4. Access and informed consent should not be taken for granted
5. Harm to participants should be avoided
6. Researchers should respect the cultural context of the research site
7. Confidentiality should be guaranteed where appropriate
8. Research records should be stored confidentially
9. Data should be stored securely

As an insider researcher, who works in the case study institution, this has limitations for the study. As issues of power and bias can emerge when "studying one's own backyard" (Sikes & Potts, 2008). Being an insider researcher can cause ethical dilemmas and concerns around the objectivity, validity and reliability of a research study. Research from the inside can be both scholarly and rigorous provided the researcher is aware of their potential influence and awareness of potential bias

(Sikes & Potts, 2008). This issue was dealt with by maintaining a distance from the participant cohort, I did not directly teach the group and I used institutional and programme level gatekeepers to access and interact with the cohort, so as not to exert influence.

Ethical approval was granted for the study by the Trinity College School of Education Research Ethics committee and by the DCU Research Ethics Committee, prior to the commencement of data generation.

Access to the student cohort for recruitment purposes was granted by the relevant institutional gatekeeper. All participants were invited to participate in the study on a voluntary basis; they had the right to withdraw at any time, to ask further questions about any aspect of the study and to obtain a summary of findings when the study concludes. Participants were provided with a plain language statement and completed a consent form which outlined the aims and objectives of the study. Withdrawing from the study and/or not taking part did not in any way affect the students' participation or assessment in the module.

Participants' data was collected, stored, processed in compliance with the 1988 and 2003 Data Protection Acts. Gathered data was treated with strict confidentiality and raw data was only available to Orna Farrell and Dr. Aidan Seery. Pseudonyms are used for participants when extracts from transcripts are used in the thesis, to ensure that the identities of the participants are adequately concealed. Data is stored securely, computer files comprising of raw data and a case study database is backed up and kept in a password protected computer to which only I have access in my locked office in DCU. Hard copies of raw data are kept in a locked cabinet in

my locked office in DCU to which only I have access. The data is retained for five years and then be destroyed. The hard copies of the data will be shredded by the researcher and the electronic files will be deleted by the researcher.

5.12 QUALITY CRITERIA

The concepts of the reliability and validity of research are positivist constructs, which are not appropriate for qualitative studies. Qualitative researchers have developed alternative terms of quality criteria which are better suited to qualitative research (Creswell, 2007). Trustworthiness and authenticity are well established quality criteria for rigour in qualitative research (Mertens, 2015). There are a number of different quality checklists and criteria for qualitative research and some controversy about these guidelines usefulness (Braun & Clarke, 2013). Within this context, two sets of quality guidelines were selected to apply to this present study, Braun & Clarke's (2006) 15-point checklist of criteria for good thematic analysis and Yardley's (2008, cited in Braun & Clarke 2013) Open-Ended Flexible Quality Principles.

15-point checklist of criteria for good thematic analysis- Braun & Clarke (2006)		
Process	Criteria	Applied to this research study
1. Transcription	The data have been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for 'accuracy'.	Yes, the transcripts were checked against the original recordings during the data preparation phase
2. Coding	Each data item has been given equal attention in the coding process	Yes, through multiple cycles of coding and recoding.
3. Coding	Themes have not been generated from a few vivid examples (an anecdotal approach), but instead the coding process has been thorough, inclusive and comprehensive.	No, the themes that were generated from a large number of supporting data chunks.
4. Coding	All relevant extracts for all each theme have been collated	Yes, this was done and checked during the review and refine processes during phases 4 and 5.
5. Coding	Themes have been checked against each other and back to the original data set	Yes, during the review process in phase 4 and 5
6. Coding	Themes are internally coherent, consistent, and distinctive.	Yes, although two themes overlap somewhat
7. Analysis	Data have been analysed / interpreted, made sense of / rather than just paraphrased or described.	Yes, this is evident in the findings chapters
8. Analysis	Analysis and data match each other / the extracts illustrate the analytic claims.	Yes, analysis and data are consistent.
9. Analysis	A good balance between analytic narrative and illustrative extracts is provided.	Yes a good balance was achieved.
10. Analysis	Analysis tells a convincing and well-organized story about the data and topic.	I think there is a consistent and organised narrative.
11. Overall	Enough time has been allocated to complete all phases of the analysis adequately, without rushing a phase or giving it a once-over-lightly.	Each phase was carefully carried out and the research process was documented in the above analysis section.
12. Written Report	The assumptions about, and specific approach to, thematic analysis are clearly explicated.	It was clearly stated that this study was following the Braun & Clarke (2006) six step approach to TA.
13. Written Report	There is a good fit between what you claim you do, and what you show you have done / i.e., described method and reported analysis are consistent.	There is consistency.
14. Written Report	The language and concepts used in the report are consistent with the epistemological position of the analysis.	Yes.
15. Written Report	The researcher is positioned as active in the research process; themes do not just 'emerge'.	The researcher was active in the analysis process, this is evident in the description of the process, in the section above.

Figure 38 Braun & Clarke's checklist applied to this study

Yardley's (2008 cited in Braun & Clarke 2013) Open-Ended Flexible Quality Principles focus on four areas; sensitivity to context, commitment and rigour, transparency and coherence and impact and importance. In figure 38, applying these quality principles to this study, with regard to sensitivity the research was contextualised both in the design chapter of thesis and the findings chapter, the researcher was sensitive to participants' perspectives by asking open ended questions, further I was sensitive to ethical issues by following the ethics guidelines set out by Trinity College School of Education. Commitment and rigour was demonstrated by methodical and careful research design data generation and in depth engagement with the research topic. Clarity and coherence are demonstrated by this study through the coherence between the research question, theoretical frameworks, and data generation and analysis techniques and by providing a transparent account of data collection and analysis in the sections above. This study has theoretical and practical impact as well as producing findings that have importance for eportfolio practice and critical thinking development (Yardley 2008, cited in Braun & Clarke, 2013).

5.12.1 Triangulation

The concept of triangulation is problematic in the context of qualitative research, as meaning is context bound for constructivists (Stake, 1995). "if you don't assume a single knowable truth, then using different data sources, methods, approaches or analysts cannot take you closer to the truth" (Braun & Clarke, 2013, p.286). As this study is positioned in the constructivist paradigm, the positivistic approach to triangulation is incompatible. Therefore, this study adopts Silverman (1996) approach to triangulation, which views it as an approach to capturing multiple truths about a topic, via data using different sources, via methods using different

methods of data collection and using a team of researchers to collect and analyse the data (Cited in Braun & Clarke, 2013). In this study, although the data sources were analysed simultaneously, the data was triangulated through the use of multiple data gathering methods; interview, eportfolio entries, eportfolio observational data, and detailed literature reviews. via from multiple (24) participants. Data extracts, analysis and findings were reviewed by the researcher and by her supervisor Dr. Aidan Seery.

5.13 LIMITATIONS

This case study explored the experiences of online distance learners with an eportfolio in one Irish University, and is not generalizable. The assumption cannot be made that the experiences of learning with an eportfolio for all online distance learners will be the same.

The researcher was aware of any personal bias which could have impacted on the subjective nature of this research and the way in which it was conducted.

5.14 REFLECTIONS ON THE RESEARCH PROCESS

This section details some personal reflections on the research process. The high points for me were seeing the first set of eportfolio entries and coding them using paper and pen, I felt like a proper researcher. Another high point was during the data analysis phase when I began to see the themes and patterns come together. The low points of the research process were the initial difficulties getting an appropriate eportfolio platform, technical failures during three online interviews and engaging participants to take part in the second interview.

I have learned a great deal through this research process, which will be beneficial to my future career. I have learned that I really enjoy qualitative research. I learned how to do thematic analysis and to use the software Nvivo. I learned when conducting an interview that I should try not to talk too much and allow the interviewee space and time to talk. I learned a great deal about what it like to be an online distance student, from both the interviews and analysing the participants' eportfolios. I hope to apply what I have learned during this thesis to future research projects.

5.15 CONCLUSIONS

Shaped and informed by the literature reviews of eportfolio, critical thinking and online distance learners in chapters two, three and four, and by the theoretical framework for the study, this chapter has detailed the design, methodology and methods implemented by this research project. The chapter began with the outline of the research questions and rationale for the study. The research design of qualitative case study was outlined, explained and justified. The data generation processes, approaches and instruments were detailed. Finally, this chapter discussed the ethical considerations and quality criteria for the study.

Having described the research process in detail in chapter five, the next chapter introduces the findings and discussion sections of the study. Chapter six adds to the rich thick description by detailing the case study context of Open Education, DCU, the setting of the Humanities programmes, the specific sociology module context

and the characteristics of the participant cohort. Further, chapter six introduces the five themes which were constructed in the data analysis process, which are followed by detailed findings and analysis are provided in chapters seven, eight and nine.

6 CHAPTER SIX INTRODUCTION TO FINDINGS & DISCUSSION

6.1 INTRODUCTION

This chapter introduces the findings and discussion section of the study which presents the analysis of the eportfolio and interview data. The data as presented are aimed at addressing the study's primary aim and research question, which has been divided into two parts:

- **Part 1: Can eportfolios enhance the nature of the learning experience among online distance learners?**
- **Part 2: Can eportfolios enhance the development of critical thinking among online distance learners?**

In order to contextualise the findings this chapter begins with a description of the research setting and the various stakeholders, followed by a short introduction to the five themes which emerged from the data analysis and then detailed presentation of the findings and discussion chapters which are combined and are organised around the research question, Chapters seven and eight addresses part 1 of the research question. In relation to the following themes:

- T1-The experience of learning with an eportfolio
- T2- Being an online distance learner
- T3- My approach to learning

Chapter nine addresses part 2 of the research question. In relation to the following themes:

- T4 Thinking critically in my eportfolio
- T5 Discipline Context-Sociology

6.2 THE CASE STUDY CONTEXT

Creswell (1998) recommends that when using a case study methodology, that the context of the case is described in detail, including the setting, the key stakeholders and the case participants. Therefore, prior to the presentation of the findings, this section provides a detailed description of the setting, the humanities degree programmes and the participants.

6.2.1 The Setting

The setting is the Open Education Unit in Dublin City University. Open Education is a provider of online, 'off-campus' programmes in a Dublin based university. The unit has as its core mission the provision of programmes that provide students with the opportunity to attain their educational goals without being required to attend campus based lectures on a regular basis. Following an Open and Distance Learning philosophy, it aims to afford educational opportunities to students who have not managed to access more traditional entry routes into higher education.

The National Distance Education Centre, later called Oscail and now Open Education was founded in 1982, with the aim of providing undergraduate and postgraduate degrees to Irish adult learners through the mode of distance learning. From 1982 to 2006, students learned by self-directed study of course materials that they received by post and by attending a small number of face to face tutorials in centres around Ireland (Delaney, 2017). In 2006, the unit began the process to evolving from a distance learning mode to a blended online delivery, by using the virtual learning environment (VLE) Web CT in combination with the previous mode of printed self-study course content and a small number of face to face tutorials. In 2011, the mode of delivery further evolved from distance to online by introducing some

synchronous live online tutorials and by delivering the course content electronically on the VLE called Loop (Delaney, 2017).

6.2.2 Programme Description

This case study relates to the undergraduate Humanities Programmes offered by Open Education, which includes two qualifications: the Bachelor of Arts (Hons) in Humanities and the Bachelor of Arts (Hons) in Humanities (Psychology Major). The original Humanities Programme began in 1993 while the Psychology major began in 2014. The Humanities programmes are designed for part time adult learners and have an open access admissions policy, candidates over the age of 23 are automatically granted a place, those under the age of 23 have to meet the university's minimum entry requirements.

The BA (Hons) in Humanities (BAH) is a level 8 modular humanities degree programme whereby learners can study a combination of history, sociology, literature, psychology and philosophy, see figure 39 below. There is a progression from foundation to intermediate to advanced level within each subject stream. Due to the modular nature of the degree, students have a high degree of flexibility in choosing how many modules to study, they can study between one and four modules per academic year, subject choices and combinations are up to the student and the number of years of study is open and flexible as the programme has no registration limit. 180 ECTS credit points are required to complete the degree; this involves studying twelve modules.

	Literature	History	Philosophy	Sociology	Psychology
Foundation	Lit1: Literature Foundation	His1: History Foundation	PH100: What is Philosophy?	SC100: Sociology Foundation	PY100: Psychology Foundation
Intermediate	Lit2: Literatures of the 20th Century	His2: Europe and a Wider World	Phil2: Reading Philosophers	Soc2: The Changing Social Environment	PY200: Social and Organisational Psychology
Intermediate	Lit3: Literatures of the 17th and 18th Centuries	His3: Land, Politics and Society in Ireland: 1800-1922	Phil3: Philosophy of Values: Ethics and Aesthetics	Soc3A: Power, Social Order, Crime, Deviance, Work and Employment	PY210: Developmental and Educational Psychology
Intermediate	Lit4: The Renaissance	His4: Politics, Culture and Society in Independent Ireland	Phil4: Language and Mind	Soc4: Social Inequality and Intergroup Relations	PY230: Cognitive Psychology and Biopsychology
Advanced	Lit5: Literatures of the 19th Century: Romanticism to Victorianism	His5: Women in Irish and European Society: 1789-1922	Phil5: Philosophy of Religion and Metaphysics	Soc5B: Language, Culture and Society	PY300: Individual Differences
Advanced	Lit6: Literatures of the Late 20th Century	His6: Researching Local History: People, Place and Time	Phil6: Contemporary Philosophy	Soc6B: Research Methods and Project	PY310: Abnormal Psychology and Psychological Counselling

Figure 39 BA Humanities Programme Structure 2016

The Bachelor of Arts (Hons) in Humanities (Psychology Major) is a level 8 modular psychology degree programme, which is made up of nine (15 ECT) psychology modules and three (15 ECT) sociology modules, see figure 40 below. There is progression from foundation to intermediate to advanced level within each subject stream. The BA in Humanities (Psychology Major) is less flexible than the BA in Humanities described above, students must progress through the twelve psychology and sociology modules to attain the degree worth 180 ECTS. The pace of study is flexible, students can decide to take from one to three modules per year and have up to eight years to complete the degree.

Bachelor of Arts (Hons) in Humanities (Psychology Major)			
Foundation	PY100: Psychology Foundation	PY110: Exploring Psychological Research	SC100: Sociology Foundation
Intermediate	PY200: Social and Organisational Psychology	PY210: Developmental and Educational Psychology	Soc3A: Power, Social Order, Crime, Deviance, Work and Employment
Intermediate	PY220: Quantitative and Qualitative Research in Psychology	PY230: Cognitive Psychology and Biopsychology	Soc4: Social Inequality and Intergroup Relations
Advanced	PY300: Individual Differences	PY310: Abnormal Psychology and Psychological Counselling	PY320: Advanced Research Methods and Project

Figure 40 BA Humanities Psychology Major Programme Structure 2016

6.2.3 The learning experience

At the beginning of the academic year, students are provided with access to self-study learning materials, resources, activities, online classroom, discussion fora on their module page on the university virtual learning environment (VLE) called Loop.

Students are supported academically through a variety of means: a personal tutor, the humanities programme team and the university student supports. Students are also supported in online discussion forums. These discussion forums are located on the institutional virtual learning environment Loop. They are the key medium through which students communicate with their tutor and fellow students.

Each module has a blend of face to face and online tutorials, there is typically two face to face tutorials on Saturdays on campus and seven online tutorials on week day evenings which results in fifteen hours of tutorials per module. Tutorials are activity-based sessions where tutors facilitate the discussion of the material

students have been studying. Students are assessed by a combination of continuous assessment and terminal exam. Assessment types include essays, case studies, group work, contributions to online forums and discussions, multiple choice questionnaires, and learning journals.

6.2.4 Module Description

The module setting for the study was an intermediate sociology module called Soc3a-Power, Social Order; Crime Deviance, Work and Employment. The module aims to examine the concept of power in various contexts such as social order, crime and work through the exploration of key thinkers such as Parsons, Gramsci and Foucault.

The module learning outcomes are outlined below:

- Analyse relevant theories on power with reference to social order
- Illustrate how the concepts of the state, civil society and social-order can be understood in Irish society through functionalist, conflict and post-structural perspectives
- Contrast the ways in which major sociologists saw social order as a voluntary activity with the perspective which sees social order as created through coercion
- Assess the difficulties in coming to an agreed definition of crime, the different theories regarding the causes of crime and the connections between crime, drug use and deprivation
- Criticise the explanations for the increased crime rates in Ireland, the involvement of particular groups in crime, including white collar crime, and the role of the media in creating particular perceptions of crime and the responses to it

- Examine the major issues in the sociology of work ranging from the traditional writings of the founding-fathers of sociology to more modern theorists
- Analyse recent concerns in the sociology of work such as work-life balance, emotional labour, unpaid work, and the decline of the trades unions

The module was assessed by continuous assessment which had four components, see figure 41 below.

Soc3a assessment plan 2016/17	Assignment 1	Assignment 2	Assignment 3	Assignment 4
Type	Literature review	Online Discussion	Reflections	Case study
Weighting	10%	20%	20%	50%

Figure 41 Soc3a assessment plan 2016-17

There were two module tutors who supported the students throughout the academic year via discussion forums and in the face to face and online tutorials. I was not a tutor on this module, my involvement was to only to provide support with the eportfolio platform.

6.2.5 The Participants

This section details demographic and contextual information about the twenty-four participants who consented to take part in the study. The demographic information was gathered in interview 1 which took place in January 2017.

There were seven males and seventeen females in the cohort, which is representative of the gender balance in the Humanities programmes which has on average 70% female students (Delaney, 2017).

Pseudonym	Age	Gender	Previous education	Course registered	Years of study
P1	45-64	Male	unknown	BAH	9
P2	25-44	Female	Some HE	BAPY	2
P3	45-64	Female	Leaving cert	BAH	12
P4	25-44	Female	Degree	BAPY	4
P5	25-44	Female	Vocational Qual.	BAPY	3
P6	18-24	Male	Some HE	BAPY	2
P7	25-44	Female	Degree	BAPY	2
P8	45-64	Female	Professional Qual.	BAH	3
P9	45-64	Male	Some HE	BAH	7
P10	25-44	Female	Some HE	BAPY	2
P11	45-64	Female	Some HE	BAPY	2
P12	24-44	Female	Degree	BAPY	2
P13	18-24	Female	Some HE	BAPY	2
P14	45-64	Female	Degree, Hdip	BAPY	2
P15	25-44	Male	unknown	BAH	3
P16	25-44	Female	Some HE	BAH	7
P17	25-44	Male	Leaving cert	BAPY	3
P18	25-44	Male	Degree, Hdip	BAH	4
P19	25-44	Female	Some HE	BAPY	2
P20	25-44	Male	Some HE	BAPY	2
P21	25-44	Female	Degree	BAPY	2
P22	25-44	Female	Professional Qual.	BAH	2
P23	25-44	Female	unknown	BAPY	2
P24	45-64	Female	Vocational Qual.	BAH	12

Figure 42 Participant demographics

The participants' ages ranged from 21 to 63, with an average age of 39 years old. In terms of geographic distribution, most lived in Leinster (19), and Munster (2), Ulster (2). Nine participants were registered on the BA in Humanities and fifteen on the

BA in Humanities (Psychology). The number of years of study varied considerably ranging from two to twelve years, see figure 42. Participants were asked in interview 1 for details of their education prior to studying with Open Education. One participant had completed the Leaving Certificate. All other participants had experience of further, higher or professional education. Nine participants had some previous experience of higher education, either at level 6 or level 7 or had started a degree and not finished. Three participants had already completed a university degree, two had postgraduate degrees, two had professional qualifications and two had vocational qualifications.

6.3 INTRODUCTION TO THE FIVE THEMES

This section provides a brief overview and summary of the five themes which were constructed in the data analysis process. Detailed findings and analysis are provided in chapters seven, eight and nine.

This study is about the journey of online distance learners through one sociology module and how learning with an eportfolio enabled them to understand and apply sociological theory to everyday life, to develop critical thinking skills and self-awareness about their learning processes. Five themes emerged from the data analysis process which was detailed in the previous chapter, see figure 43 below. While there five distinct themes in the findings of this study, there are overlapping contexts and elements between all five themes which cohere together to form the overarching story of the journey of twenty-four online distance learners studying sociology and their experiences of learning with an eportfolio. A brief outline and definition of each theme is set out below.

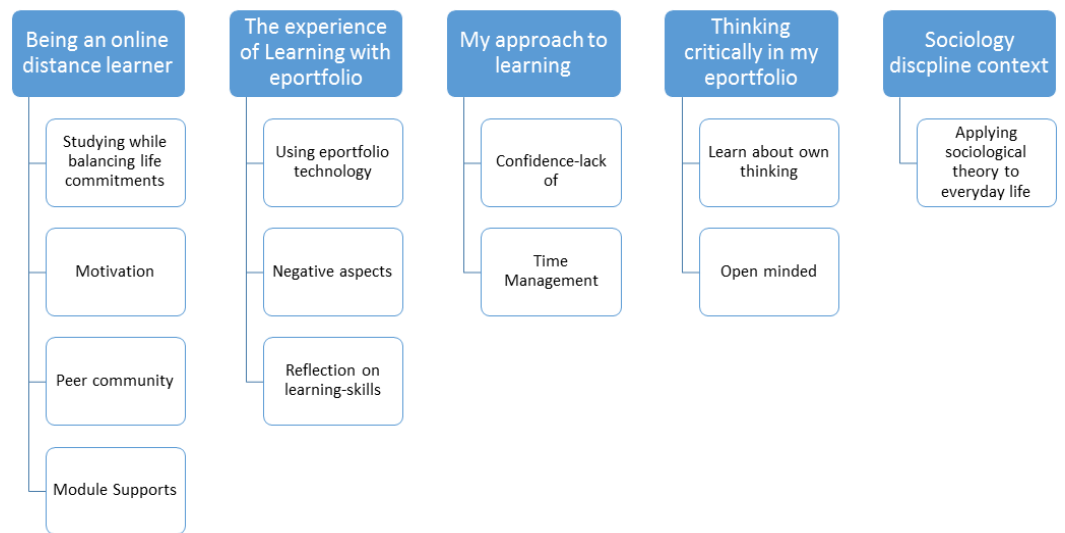


Figure 43 Final thematic map

6.3.1 Theme 1: The experience of learning with an eportfolio

This theme captures the learner experience of learning with an eportfolio. The positive impacts of using an eportfolio on their learning with regard to evaluating their progress, engagement with the module, reflecting on their process of learning and for developing self-awareness of their academic development. Some negative aspects were noted such as the eportfolio is time consuming, stressful, of no benefit and repetitive.

The experience of learning with an eportfolio was perceived as very different from other modes of assessment in terms of being personal, informal and having more freedom to express themselves. The eportfolio experience reflected that learning is a retrospective process, participants were thinking back on their learning and looking forward setting new goals. The eportfolio provided learners with a place to experiment with new ideas, to apply the sociological theory learned in the module to everyday life, to develop their sociological imagination.

There are three sub-themes in theme 1, they are:

- Using eportfolio technology
- Reflection
- Negative aspects

6.3.2 Theme 2: Being an online distance learner

This theme encapsulates the challenges of being an online distance learner in terms of balancing competing demands of family, work and illness, which impacted on learners' ability to find sufficient time for studying. The theme encompasses the experience of being an online distance learner. This was described as being more isolated than a campus based context, however participants emphasized how the role of peer support, the tutor, tutorials, and online discussion fora enabled them to overcome this sense of isolation.

There are four sub-themes in theme 2, they are:

- Motivation
- Peer community
- Module supports
- Studying while balancing life commitments

6.3.3 Theme 3: My approach to learning

Personal approaches to planning, learning, study skills and doing assignment were detailed by participants in their eportfolios, with regard to their development as learners. Reflecting on their learning prompted participants to identify academic challenge and try new study techniques which allowed them to grow in confidence about their personal approaches to learning.

There are two sub-themes in theme 3, they are:

- Time-management
- Confidence

6.3.4 Theme 4: Thinking critically in my eportfolio

The data reveals that the eportfolio provided a place for learners to think deeply and critically about themselves and their learning in relation to the module content.

Both the module content and learning with an eportfolio had an impact on the development of their critical thinking skills with regard to self-regulation, open-mindedness, analysis and inference.

There are two sub-themes in theme 4, they are:

- Being open-minded
- Learn about own thinking

6.3.5 Theme 5: The Sociology discipline context

The data also demonstrates that the discipline context of sociology is an important element to the learner experience of learning with an eportfolio. The sociological theory and content of the module shaped and framed the entire learning

experience. The process of understanding the theory and content and applying sociological concepts to everyday life was enabled by learning with the eportfolio.

The eportfolio provided participants with a place to experiment with new ideas, to apply the sociological theory learned in the module to everyday life, and to develop their sociological imagination.

There is one sub-theme in theme 5:

- Applying sociological theory to everyday life

6.4 CONTEXT IN THE FIVE THEMES

Considering the themes in relation to the overall context of the study, two contexts frame the study, the mode of study as a part-time online distance undergraduate degree and the sociology disciplinary context of the module. These layers of context frame the entire learning experience for participants and the research study itself and when examined in relation to the five themes can be compared to the layers of an onion. See Figure 44 below.

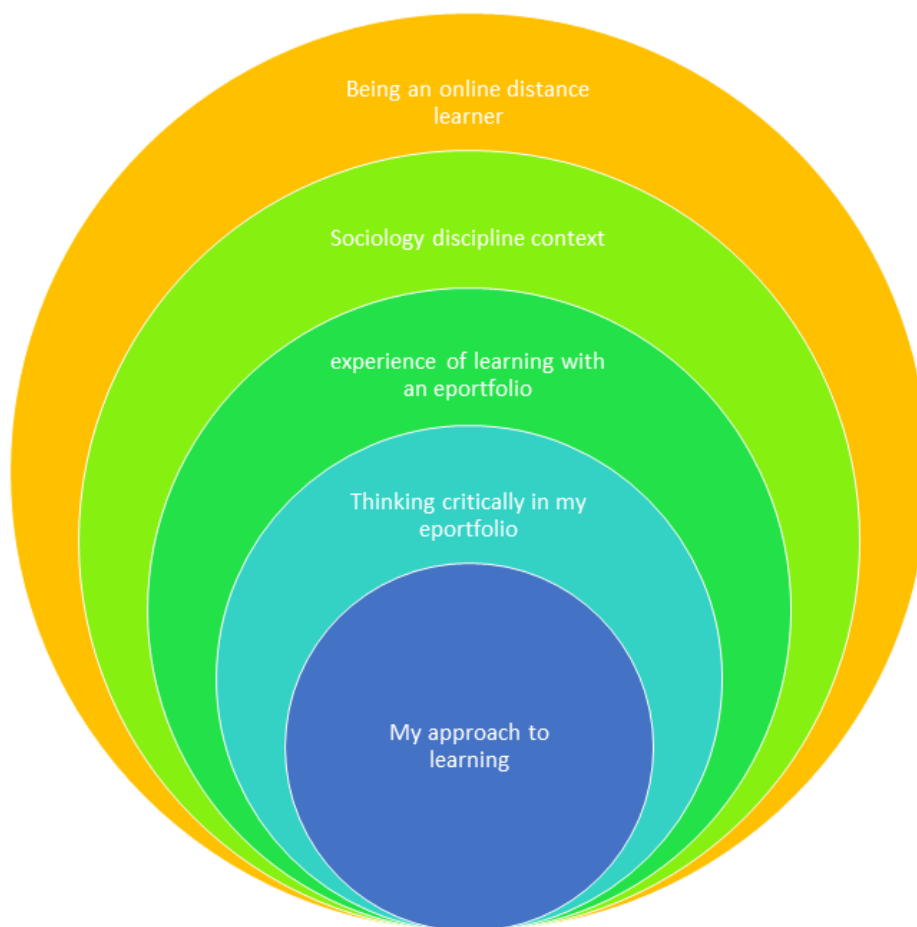


Figure 44 Themes and context onion diagram

6.5 CONCLUSIONS

This chapter adds to the rich thick description of this case study by detailing the context of Open Education, DCU, the setting of the Humanities programmes, the specific sociology module context and the characteristics of the participant cohort. This chapter has introduced the five themes which were constructed in the data analysis process. The detailed analysis of the themes is presented in the following three chapters of combined findings and discussion. In addition, the findings are discussed, analysed and interpreted in relation to the research questions, the literature on critical thinking, eportfolios, online distance learning and in relation to the critical folio thinking theoretical framework. In the next chapter, the findings in relation to the first theme: the experience of learning with an eportfolio are presented, analysed and discussed.

7 CHAPTER SEVEN FINDINGS & DISCUSSION PART 1

7.1 INTRODUCTION

This chapter presents the analysis of the eportfolio and interview data in order to address

part 1 of the research question: *can eportfolios enhance the nature of the learning experience among online distance learners?* The analysis is explored in relation to the conceptual frameworks of learning portfolio, and critical thinking, outlined in chapters two and three of the dissertation. The chapter follows a combined approach to the findings and discussion sections of the study. After each theme is introduced, it is followed by the discussion in relation to the research question and existing literature.

7.2 T1: THE EXPERIENCE OF LEARNING WITH AN EPORTFOLIO

This theme examines the student perspective on learning with an eportfolio, or what it was like for online distance students to learn with an eportfolio. The nature of learning with an eportfolio was described as a deeply personal, informal, real, and flexible experience which differed from participants previous learning and assessment experiences.

“I: And how does learning with the eportfolio compare to, I suppose other modes of learning or other assignment types you have done?”

P14: No, it is, I think the eportfolio entries are making me enjoy sociology that little bit more and making it more real. And to be able to write kind of in your own language, so you can kind of relax writing your eportfolio and

then you can think about sociology from a more relaxed way.” (P14, interview 1)

Being able to write in their own style, using their own informal language made learning with an eportfolio a more authentic experience, which seemed to participant 14 to have facilitated a deeper engagement with sociology.

Participants described the eportfolio as a safe and personal space to experiment with new ideas. A form of catharsis which gave them room to write about their thoughts, feelings and experiences in the context of the module.

“It is a great aide in my learning because it gives me a platform to express my thoughts and processes of my experiences. Normally coursework is so structured and formal; instead a learning portfolio is personal and I like that.” (P16, eportfolio entry 2)

The language used in participant narratives which described the eportfolio as *a place, a platform, a sounding board*, indicates that for some the eportfolio was more than a tool, but rather a place they felt comfortable writing personally, that enabled them to try out new ideas in a low stakes environment.

“I: Because of less planning. And here you talk about using the eportfolio here as a useful sounding board, I like that word, so can you tell me a bit more about that?

P10: By sound board what I mean is that when I'm sitting down to do the eportfolio I have to think about what I have done and I kind of almost creates a new form of study for me because I have to put it into a different form that I ever would have before. I did do a little bit of reflection last year but it was our first ever assignment that I've done since when I did massage it wasn't really assignment based.

I: So that was different?

P10: Totally different" (P10, interview 1)

The eportfolio gave participants a place to integrate their work, home life and student identities in one holistic self. Such expressions of self were perceived as rarely available in other assessment or learning experiences.

"I: So did it (the eportfolio) allow you more freedom?

P19: It's not more freedom. Ah I can't find the word, I'm getting frustrated.

It's not that it allows me more freedom, I feel more integrated. I feel like more of a whole person.

I: Ok

P19: The students we talk about ourselves, as a student today, just this one piece of me. Not your entire self is in here learning, and then your entire self is going to go to work." (P19, interview 1)

Academic assignments rarely allow students to include their life experiences. For online distance students who are managing many different selves, such as parent, student, worker, being able to integrate these identities, and reveal them in an academic context, was enabled by learning with an eportfolio. This integration of the personal and academic selves, is evident in the word cloud about learning with an eportfolio created by P16 in her final eportfolio entry. She describes her experience of learning with an eportfolio in the rationale for the word cloud as:

I have included a word cloud of the learning portfolio. This sort of adds a conclusion and summary of the main topics covered throughout my 5 reflective entries. The words include module topics as well as personal feelings and development. The topics and evidence covered differed

throughout the task of this reflective eportfolio allowed me to broadly touch on how my experiences related to the main Soc3A topics being covered, as well as my own personal growth and development as a learner.” (P16, eportfolio entry 5)



Learning portfolio Word Cloud (Participant 16 eportfolio entry 5)

Learning with an eportfolio, enabled participants to develop self-awareness about their own personal approaches to learning and to how they learned.

"In this way, the learning portfolio differs in comparison to other modes of learning; in other words, I am not simply learning and regurgitating information, I am also learning about myself." (P2, eportfolio entry 1)

This self-awareness seemed to allow students to take control of their academic development and by understanding how they learned, they could make positive efforts to improve deficits they had identified as a result of the reflective process.

For each of the five eportfolio entries, participants were asked to provide three pieces of evidence of their learning, to support their written reflection piece. They were asked to write a brief rationale for the inclusion of the evidence. The evidence

included in their eportfolios varied greatly from photos, to multimedia, to references to articles they were reading. The visual evidence in particular, added to the rich personal expressions of their experiences of learning with the eportfolio, and the module itself. The evidence of their learning made it feel tangible and visible to participants, and encouraged them to document their learning experiences.

"It has also made me realise that there should be tangible evidence of my study efforts. The learning portfolio has the potential to compel me to engage with the module to that greater extent that I instinctively desire to but haven't push myself to actually do up until now." (P18, eportfolio entry 1)

The use of the eportfolio to evaluate their own learning, was strongly articulated by participants. The frequency of the eportfolio entries, approximately once a month, was reported to have encouraged participants to take stock of what they had studied, and to consider how they felt they were progressing with their learning and assessments.

I: Do you ever look back on previous entries?

P20: Yeah, absolutely...yeah yeah...I mean I can see the value of it in terms of forcing you to actually take a stop at a certain point in time, do you know what I mean and I've actually thought about it now, since I got the appointment with yourself, em I was thinking eh do the eportfolio once a month is not really good enough' and I was thinking 'well you're not going to be doing it once a week

I: Yeah it's too much

P20: Too much, you know yeah, so it's probably...

I: About right yeah yeah well I was trying to aim for about once a month for the academic year...It was kind of my general plan

P20: Yeah, but at least force us to do that and then it generate few questions in our mind with regards to 'What am I doing' and 'what's the process'..." (P20, interview 1)

There is a temporal aspect evident in the participant narratives on learning with an eportfolio, which is both retrospective, and future focused. The retrospective aspect of reflecting back on their learning, was described by participants as beneficial for reviewing progress, revising and recapping module content, which led to a deeper learning experience.

"I find writing this learning portfolio very worthwhile. It is a few weeks now since I studied power and writing this is forcing me to refresh my memory on the subject which hopefully will help me imprint the information into my long-term memory." (P14, eportfolio entry 2)

The future focused aspect of learning with an eportfolio, was characterised by participant plans for study, and how reviewing their progress every month prompted future focused planning.

"P13: Yeah that one, and then I put in like plans, my to do lists. I started doing like multiple to do lists, like weekly, daily, everything like that. So that's really helped me get organised

I: That's really smart

P13: So I think I included one of those, and then I included I think em my style, my like kind of new style of studying and learning. So I go em like extra readings that I've done so I included kind of samples of those I think

I: And have you found this more successful?

P13: Definitely, yeah I find them a lot more structured in how I'm doing it"

(P13, Interview 1)

As participant 2 observes *"learning is largely a retrospective process."* (P2, eportfolio entry 3) This retrospective element of learning with an eportfolio, is key to the learners' development over time. By looking back at previous eportfolio entries, participants were made aware of their progress as a student, and how they had changed in attitudes, and approaches, over the course of the academic year.

"It felt quite strange to begin to piece together all my different reflections. I found myself reading through them from the first to the last and just noticing how my thoughts and opinions have changed since the beginning of this year. Truthfully I was quite indifferent to sociology last year, there were certain things that interested me but my main focus was on my major which is psychology. This year however I've found I'm looking at things slightly differently. I find that unbeknownst to myself I'm thinking with a more sociological imagination. "(P13, eportfolio entry 5)

7.2.1 T1-sub-theme 1: Negative aspects to learning with an eportfolio

The analysis above in the main theme of learning with an eportfolio largely analyses the positive experiences reported by participants. However, some negative aspects to learning with an eportfolio were outlined by participants. Two participants out of the twenty-four in the cohort consistently articulated negative aspects of the experience of learning with an eportfolio. The other twenty-two participants commented less frequently on the negative aspects.

The negative aspects described by participants 6 and 22 were that learning with an eportfolio was stressful, repetitive, not beneficial to their learning, not an academic task, and was of less value than an academic task.

"I have still not found this portfolio as functional as I probably should. It seems a bit droning and repetitive as I don't see how my learning patterns and processes could change so much in a space of a month or two. I have read over my past couple entries and I don't find myself amazed or inspired by what I've previously said and thought, so I don't feel that I'm being influenced at all by the learning portfolio other than struggling to manage my time to write it." (P6, eportfolio entry 3)

The negative aspects reported by the cohort as whole in their narratives on learning with an eportfolio, were noticeably different to those described by participants 6 and 22. The cohort narratives focused on two negative aspects: that eportfolio learning was time consuming and that reflection was challenging to do.

"My opinion on working with a learning portfolio is still divided. Currently, as I am under time pressure, I find the composition of this reflection frustrating as I would rather use this time to continue with study around the second assignment. However, ironically, the reflection does force me to step back and evaluate the approach I am taking to the work that I so desperately want to get on with." (P18, eportfolio entry 3)

Creating an eportfolio, might be considered more time consuming than completing a traditional assignment such as an essay. Also, the incremental nature of portfolio assignments may contribute to the student perception that they are time consuming. Further, this cohort of students who are balancing competing demands such as work, home and study are under considerable time pressure constantly.

This may have been a factor in their perception that the eportfolio was time consuming, as it was adding to their already significant workload.

The act of reflecting on their learning in their eportfolios was perceived as challenging and uncomfortable by some participants.

"I: Yes the online features, the reflective tone, how does compare to having to write an essay or a discussion forum activity

P7: for me I would prefer to write an essay because I find it really hard to reflect, like as you can see I don't know what to write, I think the questions are really clear by the way down the side, but this is just me, my study habits don't change, maybe they should I have a routine of how I do things, my reflections I don't think I could develop them very well if I was asked to write an essay I would be like sure that's grand I could just go and do the research and write the essay, I find it easier to write an essay, but is it as effective I don't know." (P7, interview 1)

Having had little experience of reflective activities in their previous studies, may have contributed to the perception that reflection was challenging, having had no previous experiences to draw on. The deeply personal nature of reflection and sharing personal information may have been why some participants found the experience uncomfortable. It is perhaps a reluctance to reveal perceived private information, in the context of a learning experience.

7.2.2 T1-sub-theme 2: Using eportfolio technology

After some initial anxieties about the technological aspects of using the eportfolio platform, participants quickly grew comfortable, and reported that the technical support provided at the start of the study was valued and alleviated their fears.

“At the outset I was pretty nervous when I became aware that one of our activities would involve a learning portfolio. However, I have now gotten comfortable with the Loop system for uploading assignments, previously I was a bit apprehensive about adopting to this change. The on-line “Loop reflect tutorial” on the 20/10/2016 was very beneficial to me as it gave a step by step guide to uploading our reflections to the portfolio. It also provided a platform to ask questions to resolve any issues.” (P17, eportfolio entry 1)

Participants reported that they found the eportfolio platform Loop Reflect user friendly, accessible, and uncomplicated to use, they liked the ability to personalise their eportfolio and include multimedia artefacts.

“I: And what about the technology itself, the platform...what’s it been like

P20: Yeah, fine...like again as I said, I wouldn’t be the best in general at tech and anything like this kind of takes me a little while to work out, yeah but I’m getting better and like it wasn’t that difficult, it’s fine, it’s grand” (P20, Interview 1)

7.2.3 T1-sub-theme 3: Reflection

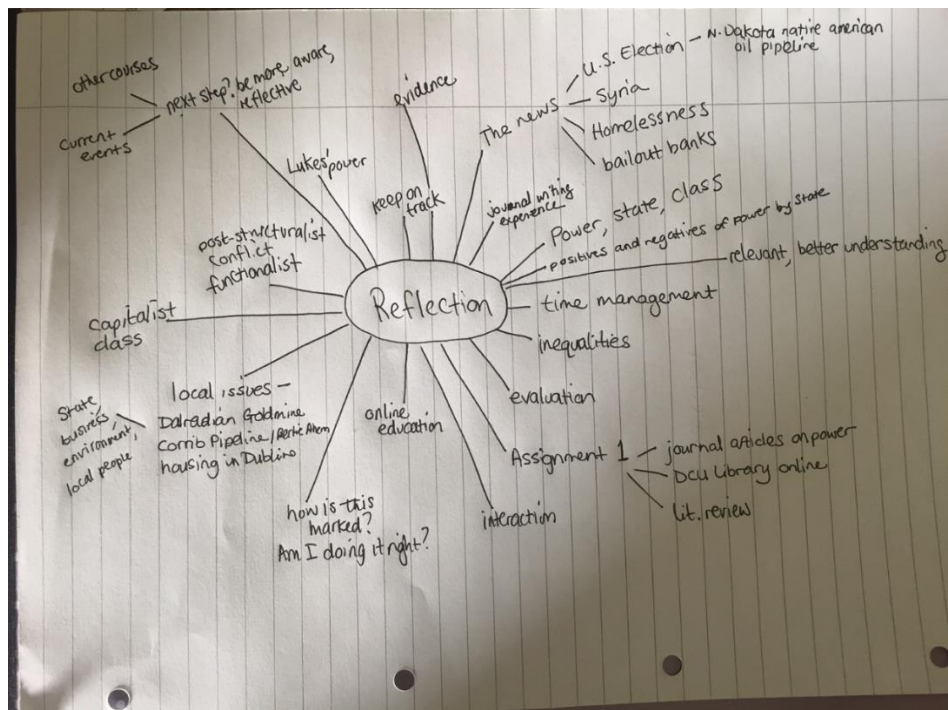
Reflective writing, is the central vehicle for expression in the participant eportfolios. Participants reflected on a wide range of areas in their eportfolios such as their experiences, their learning, challenges they faced, their study habits, and their thoughts, opinions and feelings on the module content.



Participant 24 eportfolio entry 1

Participants documented their individual approaches to planning and thinking about writing reflectively in their eportfolios. For example, participant 24 states *“I do most of my thinking a day or two after I have read something. I find walking my dogs in the mornings has been a great time to think of the reading that I’ve done, or a lecture I have listened to. I find it is in the quiet that I can hear my inner voice, which allows me to unravel the facts that I have taken in.”* (P24 eportfolio entry 1) Participant 24 further documents this approach by including a photo of her dog in her eportfolio evidence.

In contrast to participant 24’s organic approach to planning her reflective writing, participant 16 demonstrates a more systematic and visual method of planning for reflective writing in her mind map below.



Mind Map-P16 eportfolio entry 1

In the mind map above, there is evidence of higher order reflective thinking in the mind map, posing the question *"am I doing it right?"* indicates an analytical rather than descriptive approach to reflection.

The reported benefits of reflective writing articulated by participants were, developing an understanding of how they learn, the value of assessing study habits, and giving space and time to think about what they are thinking and learning.

"I hadn't fully understood the type of learner that I am until I undertook this task. I have always been a very practical person which I believe has contributed to my not being a naturally reflective person. The same I would apply to my studies and this module. Generally, if tasks are set for me, I will manage my time and my objectives by making a list and checking items off that list when they are completed. This manages the "how" aspect of study for me but it didn't account for the "why" aspect. The eportfolio encouraged me to question why I found aspects of the module more interesting than

others, why some methods of study were more challenging than others and how my own feelings and behaviours contributed to my overall learning process” (P12 eportfolio entry 5)

The process of reflection is more meaningful than memory alone, the act of considering retrospectively what has happened prompts revaluation, questioning and a deeper learning experience.

The benefits of reflective writing and reflection on learning overlap, with those presented in the main theme of learning with an eportfolio. This is because reflection, and learning with an eportfolio are interlinked. Reflective writing is a key vehicle for expression in an eportfolio.

7.2.4 Discussion of T1: The experience of learning with an eportfolio

This section discusses the findings of *T1: the experience of learning with an eportfolio* in relation to the research question and the existing literature. Relating the findings of *T1: the experience of learning with an eportfolio*, to the research question “*can eportfolios enhance the nature of the learning experience among online distance learners?*” This research question was largely satisfied by the findings presented in T1 above, and led to the first finding of the study. That learning with an eportfolio enhanced the learning experience for these online distance learners, by providing them with a safe and personal space to experiment with new ideas, to evaluate their own learning, to process their thoughts and experiences in the context of the sociology module. The experience was both retrospective and future focused.

Finding 1: Learning with an eportfolio enhanced the learning experience for online distance learners by providing them with a safe and personal space to experiment with new ideas, to evaluate their own learning, to process their thoughts and experiences in the context of the sociology module. The experience was both retrospective and future focused.

This study found that for online distance students, learning with an eportfolio was different to other types of learning and assessment that they had previously experienced in higher education, because it was personal, informal, relaxed and they could write in their own language. This means that the eportfolio was a real and authentic learning experience for the participants. This finding supports Eynon & Gambinos' (2017, p.98) argument that eportfolios can offer "richer artefacts for authentic assessment" generated by students. Further, it is in keeping with previous research carried out by Cheng & Chau (2010) which found that students valued the choice and sense of ownership was facilitated by an eportfolio task. However, the personal aspect reported by this study is a point of difference. The idea of the eportfolio as a space for students to try out new ideas reported by this study, supports Zubizarreta's (2012) theory of a learning portfolio as a vehicle for bringing together learning, rather than a technocentric tool. Therefore, the eportfolio is a sounding board, a space for enabling student learning, their place to experiment.

In this study, the eportfolio enabled participants to bring together their multiple identities as student, parent, worker into one holistic self, unlike previous learning or assessment experiences. This finding is consistent with previous theories (Cambridge 2008; Chen & Penny Light, 2011; Eynon & Gambino, 2017) which assert

that eportfolio based learning supports students' development of a sense of self through self-authorship. It is also supported by previous research (Bennett et. al., 2016; Hughes, 2010; Madden, 2015; Nguyen, 2013) which identified the eportfolio as a place for identity development and the articulation of a holistic self. These two approaches to identity construction within an eportfolio that of self-authorship (Cambridge 2008; Chen & Penny Light, 2011; Eynon & Gambino, 2017) and self-portrait (Nguyen, 2013) are of relevance to this study. However, the concept of self-authorship which is more process orientated is more aligned than that of self-portrait which is static.

From a developmental perspective, this study found that learning with an eportfolio, enhanced these online distance students' learning experiences by enabling them to develop self-awareness, by evaluating their own approaches to learning through the medium of reflective writing. This meant that participants experienced an evolution in understanding of how they learned. It highlighted to them the value of assessing their study habits, while allow them time and space to think about what they were thinking, and learning in the sociology module. These findings are generally compatible with previous research, which evidenced that students perceived that learning with an eportfolio made them more aware of their growth, and development as a learner, and that by recording their experiences in an eportfolio it made their development visible to themselves (Buyarski & Landis, 2014; Eynon & Gambino, 2017; Janosik & Frank, 2013; Kabilan & Khan, 2012; Parker, 2012; Wakimoto & Lewis, 2014). Further, the benefit of the evaluation and identification of strengths, and weaknesses, by students whilst learning with an eportfolio, is supported by the study carried out by Kabilan & Khan (2012).

The use of a wide variety of evidence in the eportfolio such as photographs, diagrams, mind maps, study plans, articles, video, audio, created a deeper, richer and more personalised learning experience for participants. The data suggests that collecting evidence of their learning, made the experience feel tangible and real. Looking back at their eportfolio entries, and being able to see the evidence of their learning and how it had evolved over the year, made their development more obvious for participants. These findings are broadly in line with those of researchers such as Eynon & Gambino (2017) who reported that eportfolio based learning makes student learning visible, and Chen, Penny Light, Ittelsons' (2011) argument that documenting learning promotes deeper learning.

The temporal aspect of learning with an eportfolio, had significant impact on the student learning experience. While it seems somewhat contradictory to be simultaneously looking back and forward in the same learning activity, this temporal aspect was a key element in the students' learning process. The retrospective act of reflecting back on their learning was beneficial for assessing progress, and revising sociological content, and the future focused element encouraged students to plan for study. There is very little existing research on the temporal nature of eportfolio based learning with the exception of one theory by Ayan & Seferoglu (2011, p.520) who conceptualised that "eportfolio act as a bridge between the past and the future" This study's finding with regard to the temporal aspect of eportfolio based learning, supports Ayan & Seferoglus' (2011) theory, but contends that this temporal element is more than a bridge between the past and future, that in fact the temporal aspect is one of the key drivers of effective eportfolio based learning.

7.2.5 Discussion of T1-sub-theme 1: Negative aspects to learning with an eportfolio

There were some aspects of learning with an eportfolio that students perceived as negative experiences. For two participants, learning with an eportfolio did not enhance their learning experiences but rather was stressful, repetitive and not considered an academic task. This finding is consistent with previous research into student perceptions of learning with an eportfolio as having no impact of on their learning (Contreras-Higuera et al., 2016; Lopez-Fernandez & Rodriguez-Illera, 2009; Ntuli et al., 2009; Singer-Freeman et al., 2014). For the wider cohort, there were two negative elements to learning with an eportfolio, that it was time consuming and that reflection was challenging. The student perception that creating and maintaining a portfolio is time consuming, is strongly supported by the existing literature, in fact it is the common student concern voiced in the literature after technological difficulties (Janosik & Frank, 2013; Kabilan & Khan, 2012; McWhorter et al., 2013; Parker, 2012).

For some participants writing reflectively, was challenging and uncomfortable, although they were provided with reflective prompts and some resources on reflective writing. Looking back on the study, participants would have benefited from further supports on reflection such as model eportfolios, samples of reflective writing, and a focused session on how to write reflectively. The provision of further supports may have mitigated some challenges with reflection for students, however the finding that students struggle with reflection is supported by the research of Landis, Scott and Kahn (2015).

7.2.6 Discussion of T1-sub-theme 2: Using eportfolio technology

The use of the eportfolio technology enhanced the learning experience for this cohort of online distance students by providing them with a stable, user friendly platform, which enabled them to personalise their eportfolios, and add a variety of rich text media artefacts in a supported environment. This means that the eportfolio technology was an enabler for learning rather than a barrier for the participants. This finding is in contrast with a large number of previous studies examining student views on eportfolios, which frequently found that eportfolio technology was a barrier to meaningful learning and that student have difficulty adapting to change (McWhorter, 2013; Scholz, 2017; Ntuli et al., 2009; Tosh et al., 2005; Wuetherick & Dickinson, 2015). However, if students are provided with training and support for the eportfolio platform at the point of need, as was carried out in this study, the technology has less negative impact (Parker et al., 2012; Ring & Ramirez, 2012; Wakimoto & Lewis, 2014).

7.2.7 Discussion of T1-sub-theme 3: Reflection

The eportfolio literature suggests that reflection is the engine which drives eportfolio learning (Eynon & Gambino, 2017; Zubizarretta, 2008). There is some overlap with this subtheme and *T2- the experience of learning with an eportfolio*, this is because reflection and eportfolio learning are strongly linked. Reflective writing within the context of an eportfolio seems to be the medium which facilitates learning and without the reflective entries an eportfolio would be a static repository of artefacts. There is clear evidence from the data that the reflective entries capture what a student was thinking, feeling and learning at a particular point in time, and gives contextual information which makes the evidence or artefact much more

meaningful. This finding is consistent with previous research which details the centrality of reflection to learning with an eportfolio (Barrett, 2007; Brandes & Boskic, 2008; Buyarski et al., 2015; Eynon & Gambino, 2017; Jenson, 2011; Landis, Scott, Kahn, 2015; Yancey, 2009; Zubizarreta, 2008).

This study found that students had a variety of approaches to reflective writing and planning for reflection. Writing and planning reflection with an eportfolio was a very individual endeavour, despite all participants having received the same critical question prompts, supporting resources and training. This is in keeping with Landis, Scott and Kahns' (2015) finding that staff and students viewed, interpreted and practiced reflection in a wide range of different ways.

Writing reflectively within their eportfolios was beneficial for student learning in this study. However, this finding significantly overlaps with the finding reported above that learning with an eportfolio enhanced the learning experience for online distance learners by providing them with a safe and personal space to experiment with new ideas, to evaluate their own learning, to process their thoughts and experiences in the context of the sociology module. However, one point of difference is that the reflective writing in this case was the medium which enabled learning within the context of the eportfolio. These findings are consistent with previous research with regard to the benefits of reflection in an eportfolio context (Brandes & Boskic, 2008; Jenson, 2011; Landis, Scott, Kahn, 2015; Yancey, 2009).

7.3 CONCLUSIONS

This chapter has presented the findings and discussion of *T1: The experience of learning with an eportfolio* in relation to the existing literature and addressed part 1 of the research question “*can eportfolios enhance the nature of the learning experience among online distance learners?*” The chapter presented and critiqued the first finding of the present study in relation to the research question.

Finding 1: learning with an eportfolio enhanced the learning experience for online distance learners by providing them with a safe and personal space to experiment with new ideas, to evaluate their own learning, to process their thoughts and experiences in the context of the sociology module. The experience was both retrospective and future focused.

This chapter has outlined two original findings originating from the first theme. Firstly, the impact of the personal aspect of learning with an eportfolio. Which was evident in the conception of the eportfolio as a personal space for students to try out new ideas, a sounding board, a space for enabling student learning, their place to experiment. Secondly, the temporal aspect of learning with an eportfolio had significant impact on the student learning experience. The retrospective act of reflecting back on their learning was beneficial for assessing progress and revising sociological content and the future focused element encouraged students to plan for study. In the next chapter, the findings in relation to the second theme: being an online distance learner are presented, analysed and discussed.

8 CHAPTER EIGHT FINDINGS & DISCUSSION PART 2

8.1 INTRODUCTION

This chapter continues the presentation of the analysis of the eportfolio and interview data in order to address part 1 of the research question: *can eportfolios enhance the nature of the learning experience among online distance learners?* The analysis is explored in relation to the conceptual frameworks of learning portfolio, and critical thinking, outlined in chapters two and three of the dissertation. The chapter follows a combined approach to the findings and discussion sections of the study. After each theme is introduced, it is followed by the discussion in relation to the research question and existing literature.

8.2 T2: BEING AN ONLINE DISTANCE LEARNER

This theme explores the experience of being an online distance learner, studying on the Humanities programmes and more specifically what it is like to be a learner in the sociology module Soc3a. The mode of study of part time online distance learning undergraduates in higher education is both a context and a theme within this study.

Participants perceived that the mode of study of online distance learning suited their lifestyle and was flexible, accessible and gave them freedom to work at their own pace.

“I am a busy mother of five so I find the learning portfolio suits my lifestyle, it would be difficult for me to get to classes so I find I work my study around the children. I keep books in my car and study while I wait at football

practice and I love the fact that I can look over an online class later in the evening.” (P14 eportfolio entry 1)

Although participants valued the flexibility that learning online afforded them, some expressed dissatisfaction about the degree transitioning from a distance mode with face to face tutorials to an online degree and placed a higher value on face to face interaction over online interaction.

“I think I would have preferred more face to face tutorials as I find the classroom environment an easier place to take in the information. The online tutorials, while good, don't have the same learning experience as the classroom does.” (P5 eportfolio entry 1)

This means that participant 5 placed a higher value on a transmission approach to learning which they associated with face to face tutorials.

Participants reported that getting to grips with the technological aspects of online learning was a challenge when they started the course. This involved becoming familiar with Loop (the institutional VLE) and the live online classroom.

“The whole aspect of the course being online has been one of my main challenges, even more so than the course material. I would not consider myself to be overly computer literate and the challenge for me all the way through has been dealing with online issues and coming to terms with learning new processes. I will admit to being very stressed with this aspect at stages.” (P1 eportfolio entry 5)

This highlights that the online distance learner requires a certain level of digital literacy in order to engage effectively with their course.

8.2.1 T2-Sub-theme 1-Peer community

This sub-theme explores the role of peers and community from the perspective of the learner. Participants placed a high value on the peer communities they formed over the course of the academic year. Three types of formal and informal peer communities were formed. The official institutional community which interacted on the Loop discussion fora, the student generated and student led class community which interacted on WhatsApp, and smaller cohorts of student generated study groups which interacted on WhatsApp and Facebook.

These peer communities were perceived by participants to be an essential source of support, reassurance, encouragement and human connection.

I: Ok that's interesting. And then evidence 2 is your WhatsApp group.

P19: I need those women, that's my cohort. We are in contact most days supporting one another. Like when I was feeling down and I was thinking I do not want to do this course anymore it's too much, they were like you're great and you're smart. I read your post, your post is really insightful. If I don't understand a concept we can discuss it. If WhatsApp isn't sufficient we can ring each other.

I: So your study group is really important.

P19: It's not a study group. My sister when she did her they give you a cohort you do all your classes together. You do all your study groups together, projects together. There's something about that approach that makes you feel like you're part of a supportive group.

I: You're in something greater than yourself?

P19: Yeah (P19 Interview 1)

This means that for participant 19, the peer support group was an integral part of their approach to learning in the module.

Discussing module theory and content with peers was beneficial to participants learning experiences, as hearing other perspectives, deepened understanding and enhanced their learning. These discussions took place in a variety of contexts, on the phone, in online discussion fora, on WhatsApp, in face to face tutorials and in online tutorials.

“I feel I am fortunate enough to be in a group with classmates that encourage and engage in debates around various topics in sociology, whether it be in class, between breaks or through the online forum.” (P12 eportfolio entry 1)

The importance of learning through discussion was further evidenced by Participant 19, by including the image below in her eportfolio, which she described as *“I amalgamate the knowledge I have acquired organically through discourse and debate. To this end, I have cultivated a small group of verbose, opinionated friends with whom I participate in regular discussions. Our impromptu meetings are reminiscent of seventeenth-century French Salons; we enjoy coffee, wine, and good food and deliberate sociological topics” (P19 eportfolio entry 2)*



Clean-up After Impromptu Breakfast Discussion. (P19 eportfolio entry 2)

In contrast with the positive peer community narratives discussed above, negative group interactions such as complaining, disagreements and bullying which took place in the class WhatsApp group were described by participants as stressful and overwhelming.

“P7: It also gears your thinking too, well I didn't agree with that and I wanted to go a different way, Jesus if everyone is jumping aboard that well maybe I'm wrong, I don't want to put up mine now, so anyway I came off those two WhatsApp groups, not the sociology one about a month ago and that definitely made it easier doing my assignment

I: Do you feel better for it?

P7: I do a hundred percent, you'd wake up some mornings and there would be over a hundred messages on your phone, you know from that one group, it became too much for me, I think that was a factor for that stress I was feeling about putting up posts, because one or two people would comment

negatively on people's posts who aren't on the WhatsApp group and I thought Jesus I don't want to be part of this "(P7 Interview 1)

This means that informal student support groups don't necessarily lead to positive interactions and feelings of belonging to a community.

Despite the active peer community found in the participants' narratives, feelings of isolation were expressed by some participants, Participant 22 in particular reported intense feelings of isolation over the course of the academic year.

"Isolation with studying throughout the year would definitely be one of the major challenges for me." (P22 eportfolio entry 3)

"Because it's very isolated and you've nobody to ask and say well what should I be doing about this or what resource could I be using or is this the right approach. Yeah, it's very isolated so ..." (P22 Interview 2)

8.2.2 T2-Sub-theme 2: Motivation

This sub-theme examines what motivated the participants to study for a Humanities degree. Participants clearly articulated their own personal motivations for studying in their narratives, giving them a strong sense of purpose as they navigated the academic, and personal challenges, of being an online distance learner. They described a range of motivations for studying the degree such as, change of career, personal development, the desire to learn more about a particular humanities subject like psychology, sociology, and history, missing out on third level education previously and getting a second chance at doing a degree. These personal motivations sustained participants throughout their learning experiences.

Some participants expressed an expectation that completing their degree would enable them to change career and this was their primary motivation for studying.

I: And here you are doing a second degree

P21: Yes, hopefully a masters eventually

I: And, and is it with the mind of you changing career or is it just for pleasure?

P21: Eh, career. I hate my job

I: Okay.

P21: With profound.

I: That's a strong motivation

P21: Oh I hate it....

I: Do you mind my asking what you do or...?

P21: I'm a database analyst

I: Okay

P21: Ehm for a well-known car rental company. (P21 Interview 1)

For others, their motivation for studying for a degree was for personal development, something for themselves, an escape, personal space, a break from the responsibilities of family and work.

P8: It is but I could have chosen to do revenue related like I could have a degree in tax or something, theres one thats accredited to UL and diploma and I get the weeks off to go in, it would be great but I've been in the job a long time and I would have a lot of the technical training so you still have to

put in a certain amount to your own time so I wanted it to be something I would enjoy.

I: Absolutely, sometimes it's a breath of fresh air to do something else

P8: Look, it's completely different so that was it, it was really for myself I wanted to do it (P8 Interview 1)

There is an emotional element evident in some participants' descriptions of motivation. A sense of being deprived of the opportunity of studying at third level was evident in some participant narratives on motivation.

"I: Do you want to tell me about the story of how you came to be studying with us here?

P24: Yes. I've always wanted to get a degree but I left school at 15 and went to work. I had a family very early and then couldn't afford it, if I'm honest, I had to work in order to get my kids through Uni. Got them both through Uni. and came to Ireland and then I have a job so I couldn't work out how I was going to study and have a job and most universities wanted you to do 2 nights study but you see I couldn't do until 9 o'clock at night in say Tallaght and come all the way back home here, I wouldn't get home until 11 so I looked at Open Learning and DCU were offering Open Learning and here I am." (P24 Interview 1)

In their narratives, some participants positively described their visions of their future selves, they visualised their future identities as graduates and post graduates.

"Ideally, I would like to be the sort of person who keeps a portfolio so my next step will be an attempt to structure and document my work a bit

more. In spite of my disorganised approach I am serious about the subject and would like to study further when I finish this degree” (P3, eportfolio entry 1)

8.2.3 T2-Sub-theme 3: Studying while balancing life commitments

The most challenging aspect of being an online distance learner is studying while balancing work, family and caring responsibilities, this is very clearly articulated in the participant narratives. Juggling these competing demands and finding sufficient time to study, and write assignments, put participants under severe pressure. As the students are already time poor, issues such as illness had a domino effect on participants’ ability to keep on track with their study. One or two unexpected problems in their personal lives can cause students to fall badly behind with their study and assignment work, thus impacting their learning experience.

“For the first time since taking up third level education again, I found it very difficult to juggle my work demands, assignment demands and minor ill health. However, the first three assignments were all due in November rather than December this year and the first sociology assignment, as well as the first psychology assignments, coincided with annual parent teacher meetings. As a primary school teacher, my job is my priority and I had prepared for the clash of assignment and meeting dates. What I couldn't prepare for was getting sick at the same time. It is fair to say that I felt very overwhelmed with everything happening all at once.” (P7, eportfolio entry 2)

Participant 20 captured the challenge of balancing study, work and life in the image below, which he described in his eportfolio as *“a very personal representation of the*

turmoil of the distance learning student as they attempt to drag themselves away from the drudgery of everyday life to enlighten themselves.” (P20 eportfolio entry 2)



P20 eportfolio entry 2

This sub-theme captured the most challenging aspect of being an online distance learner. For these participants balancing their life commitments with studying proved difficult.

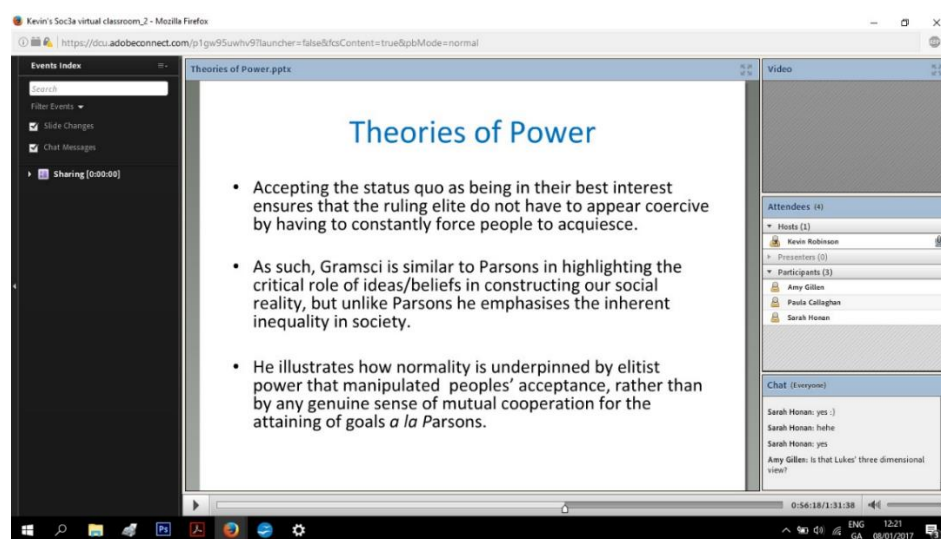
8.2.4 T2-Sub-theme 4: Module supports

Participants placed a high value on the supports offered by their modules tutors both in online and face to face tutorials and on the module discussion forum.

Attending and participating in tutorials was described by participants as fundamental to their learning, socialization and progression in the module. Tutorials provided them with reassurance, interaction with peers and clarification of difficult concepts and theories.

“However, since then I have completed the postings for Assignment two and have attended another online tutorial. The tutorial covered the codes, conventions, theories and perspectives of Social Order. As I had been studying these subjects in the unit notes, it was very useful to have a structured discussion on them. When our tutor gives real life examples of the application of these, it makes everything easier to understand and remember. I thought that tutorial was particularly useful, as there was good interaction among the group. We were in the middle of our postings for assignment 2 at that time. X (Tutor name) gave us useful pointers for the assignment, among which was to try to focus our examples on Irish society.”

(P8, eportfolio entry 4)



Screenshot of an online tutorial from P10 eportfolio entry 3.

The high value placed on tutorials is evident in participant 10's eportfolio entry which she described her rationale for including the image above of the tutorial in her eportfolio evidence that:

“Our tutorials are extremely important for me to engage with and learn what it is best to focus on in my studies. I have found that my other classmates have asked questions and made points that help me to reflect on

my own thoughts about the module content. I found the tutorial in December especially valuable for beginning my own comparison of different theorist involved in social power.” (P10, eportfolio entry 3)

The importance and centrality of the support provided by the module tutors was very clearly articulated in participant narratives. Although the mode of study of online distance learning is largely self-directed, the reassuring and supporting role of the tutor still remains very significant to the learning experience of participants in terms of clarification of concepts and assignments, encouragement, guidance on reading and approaches to study.

“One of my main difficulties in gathering my work for the first assignment, was my block on getting over what the definition of power is in sociology. When we had our first face to face tutorial with X (tutor name) it made more sense and I was actually surprised at how much power was evident in everyday life, in our relationships with people and in our interactions with pretty much everyone.” (P5, eportfolio entry 1)

Some participants described becoming more comfortable interacting on the online discussion fora, and perceived them to be a useful medium for interactive discussion and viewing other students’ questions and concerns on the class discussion forum, which alleviated feelings of doubt.

“I learned that I like the interaction of the online forum for learning and I found it interesting to read what other people had researched. I found I was reading with a focus of either agreeing or disagreeing with the points that people had made. I had to choose which posts to engage with. The type of work in forums and engaging with others is helping me with my critical thinking skills.” (P4 eportfolio entry 4)

While others felt nervous, exposed and disinclined to post on the discussion fora.

I: So I suppose the things that stand out to me are your pieces of evidence.

Do you want to talk about them a little?

P19: Oh I forgot I posted that. So one of them was my reply to X (tutor name) I think it is. It was about my confidence in using the forum, and participating in that way. Because I think you're hesitant, you don't know how people are going to take you up on the forums. And it's different from other bits of social media where you don't care how people take you up. You just have to be yourself. If somebody takes me up poorly, I'm going to come across poorly to my tutor. I might foster some kind of bias. (P19, Interview 1)

This means that discussion forums, which are central mechanism of support within the module, do not meet the support needs of some students.

8.2.5 Discussion of T2: Being an online distance learner

This section discusses the findings of the *T2: Being an online distance learner* in relation to the research question and the existing literature. The research question “*can eportfolios enhance the nature of the learning experience among online distance learners?*” was answered by the findings presented in T2 above. However, the manner in which the eportfolio captured online distance learners experience of being through the eyes of the learner, which is both a context, and a theme within this study, was more significant than expected. This led to the second finding of the study that learning with an eportfolio enabled online distance learners to document their lived experiences and learning approaches in an authentic and meaningful way.

Finding 2: Learning with an eportfolio enabled online distance learners to document their lived experiences and learning approaches in an authentic and meaningful way.

This study found that learning with an eportfolio, captured the experience of being an online distance learner, studying on the Humanities programmes, and more specifically what it is like to be a learner in the sociology module Soc3a. The eportfolio based learning enabled participants to evidence, describe and document their learning experiences in these contexts. The eportfolio enabled participants to bring together their multiple identities as student, parent, worker into one holistic self.

This finding is consistent with previous theories (Cambridge, 2008; Chen & Penny Light 2011; Eynon & Gambino, 2017) which assert that eportfolio based learning supports students' development of a sense of self through self-authorship. Further, the above finding supports Yancey (1998, p.18) theory of the multiple curricula of higher education, which argues that there are three intersecting curricula which she describes as "the students bring with them their lived curriculum, that is, the product of all their learning to date. In the classroom, they engage in the delivered curriculum, which is the planned curriculum, outlined by syllabi, supported by materials and activities, and so on. The delivered curriculum, however, is experienced quite differently by different students: it is the experienced curriculum." Building on Yancey's theory, Penny Light et. al (2011, p.8) argue that as eportfolios enable students to represent their own learning that they provide a "window into the lived and experienced curricula". The second finding of this study supports this theory. However, there is only one empirical study carried out by Shepherd & Bolliger (2014) which has touched on the documenting of the lived

experiences of online distance learners. Shepherd & Bolliger's (2014) study of online graduates' students found that learning with eportfolios personalised the experience for students and increased feelings of connectedness. However, no studies have examined the eportfolio as a window into the lived experiences of online distance learners, which is an original finding of this present study.

The learning experiences of online distance students, as documented in their eportfolios, are largely consistent with the online distance learning literature on student experiences. In this study, the mode of study of online distance learning was perceived by most participants as flexible, accessible, suitable for their lifestyle which enabled them to work at their own pace. This finding is consistent with previous research carried out by Simpson (2012) and Delaney & Fox (2013).

Although participants valued the flexibility that learning online afforded them, some expressed dissatisfaction about the degree transitioning from a distance mode with face to face tutorials to an online degree and placed a higher value on face to face interaction over online interaction. This is due in part to the modular structure of the humanities programmes and due to the fact that the BA in Humanities has no registration limit. This meant five participants had been studying for 6-12 years and had experienced the transition from distance to online learning during this time.

Whereas the majority of the participants (n19) had been studying for less than four years and had only experienced the online mode. Some participants placed a higher value on face to face tutorials and a more transmission approach to teaching. This finding is consistent with Platt, Amber, Yu (2014) study which found that student perceived online courses to have fewer opportunities for interaction than face to face courses. With regard to the higher value placed on face to face transmission teaching perceived by some participants, according to Pauler-Kuppinger & Jucks

(2017) this can be attributed to students' expectations, and preconceptions, about teaching and learning at university level, and a lack of learner autonomy.

In this study, becoming comfortable and competent with the technological aspects of online learning was a challenge for some participants when they started the course. This indicates the necessity for online distance learners to have a level of digital literacy in order to engage effectively with their course, this finding is consistent with previous research carried out by O'Shea et al., (2015) and Brown et al. (2015).

8.2.6 Discussion of T2-Sub-theme 1: Peer community

Another important finding was that participants placed a high value on the peer communities they formed over the course of the academic year. Three types of formal and informal peer communities were formed, the official institutional community, the student generated and student led class community, and smaller cohorts of student generated study groups. These peer communities were perceived by participants to be an essential source of support, reassurance, encouragement and human connection. This finding is consistent with previous research on peer interaction in online courses carried out by O'Shea, Stone, Delahunty (2015) and Andrews & Tynan (2012). In addition, the value of informal student networks for online distance students has been evidenced by Zembylas et al. (2008). However, there are no studies which have investigated the negative impact of informal student networks as was found by this present study. This indicates that informal student support groups don't necessarily lead to positive interactions and feelings of belonging to a community.

This study found that for a small number of participants, being an online distance learner was an isolating experience despite the presence of strong community within the cohort. This is in line with previous research which evidenced that feelings of isolation were often experienced by online distance students (Barbera, 2009; Bolliger & Shepherd, 2010; DiRamio & Wolverton, 2006; Phirangee & Malec, 2017; Shaw & Polovina, 1999).

8.2.7 Discussion of T2-Sub-theme 2: Motivation

Four motivations for studying for a humanities degree were identified in the data: change of career, personal development, the desire to learn more about a particular humanities subject, and missing out on third level education previously. This is broadly in line with research conducted by Brown et al. (2015), who found three motivations of online distance learners which were, the prospect of career progression, having missed out on higher education previously and self-development. However, one aspect of motivation which is not investigated in the literature which was found in this study, is the desire to learn more about a particular humanities subject.

8.2.8 Discussion of T2-Sub-theme 3: Studying while balancing life commitments

The current study found that the most challenging aspect of being an online distance learner was studying while balancing work, family and caring responsibilities. This finding is consistent with previous research which found that trying to fulfil multiple roles and juggle professional, family, social life, and study can cause online distance students to feel considerable stress (Brown et al., 2015;

Zembylas et al., 2008). These findings call into question the human cost of online distance learning, while increasing access to education, it may be placing unrealistic demands and stress on adult learners.

8.2.9 Discussion of T2-Sub-theme 4: Module supports

This data indicates that participants placed a high value on the supports offered by their modules tutors both in online, and face to face tutorials, and on the module discussion forum. Although the mode of study of online distance learning is largely self-directed, the reassuring and supporting role of the tutor still remains very significant to the learning experience of participants. This finding is broadly in line with O'Shea, Stone, Delahunty's' (2015) study which found that positive engagement with a teacher who was responsive, active and engaged was valued by students. Tutorials were fundamental to student learning, socialisation and progression in this study. This finding is consistent with previous research carried out by Buck (2016) and Gauvreau (2016) which highlighted the role of active communication between students and instructors using asynchronous discussion forums, and synchronous online classes to promote interaction and social presence. However, there is one point of difference, in this study, there were mixed reactions from participants about the usefulness of discussion forums. For some participants, discussion forums were useful for interactive discussion and viewing other students' questions and concerns. While other participants felt nervous, exposed and disinclined to post on the discussion fora. This finding is consistent with previous research on discussion forums (Baxter, 2012; Selwyn, 2011). This means that discussion fora which are a central mechanism of support in online courses do not meet the support needs of some students.

8.2.10 Summary of Discussion of T2: Being an online distance learner

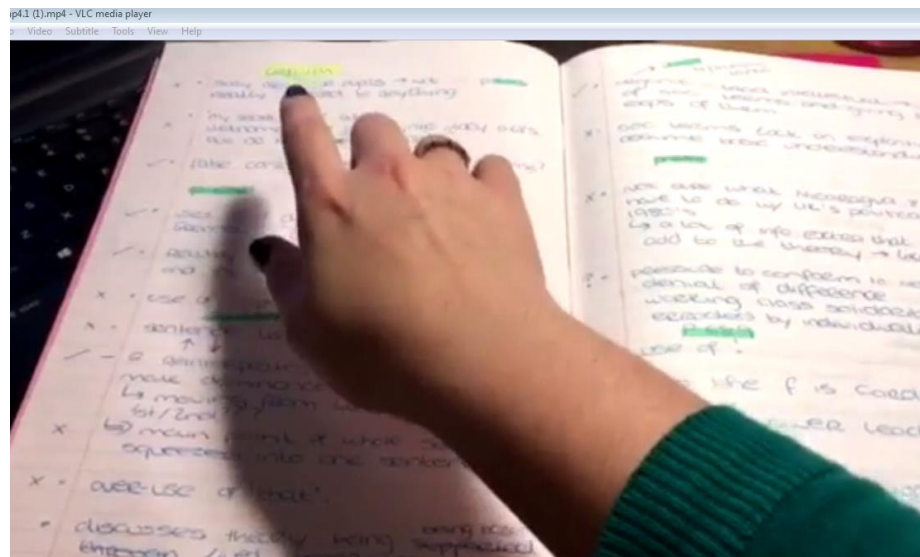
The second finding of the study that *learning with an eportfolio enabled online distance learners to document their lived experiences and learning approaches in an authentic and meaningful way*, has been shown to be an original finding of this study, no previous studies have examined the eportfolio as a window into the lived experiences of online distance learners. However, the learning experiences of participants as documented in their eportfolios was shown to be broadly consistent with previous research which was outlined in the discussion above.

8.3 T3: MY APPROACH TO LEARNING

In their narratives, participants described their highly personal approaches to learning, this provides a detailed insight into their study techniques, when, where and how they learned.

As the mode of delivery of the module is largely self-directed, the participants own approaches to managing their learning was crucial to their academic success in the module.

The participants detailed their study techniques in their eportfolio entries, which included their approaches to reading and varied personal approaches to note taking such as highlighting, mind maps, flashcards, colour coding, and annotating pdfs online. Participants included many visual examples of their notetaking approaches in the evidence part of their eportfolio entries, what is striking is how individual each note taking approach was. Participant 21 in her second eportfolio entry created a short video explaining her approach to notetaking.



Note taking video P21, eportfolio entry

Quite a different approach to note taking was taken by Participant 18, who annotated PDFs online, adding in comments and notes.

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occupations, the absence of male comparators has limited the usefulness of equal pay legislation (see O'Connor, 1998). Work which is predominantly done by women is consistently valued less than work which is predominantly done by men (anecdotally it is useful to compare general nursing, a predominantly female occupation with computing, a predominantly male occupation). At national level such differential valuing has become embedded in pay differentials which have become an accepted part of national wage negotiations. Such practices are not helpful as regards implementing the EU Code of Practice on the abolition of the implicit gender bias in job classification schema (O'Connor and Shortall, 1999).

It is widely recognised that, overall, women's low pay is related to their concentration in occupational groups which are predominantly female, defined as low skilled and poorly paid. Across the EU it is three times more likely that a woman in paid employment will be in low paid work than a man and it has been estimated that 20-30 per cent of working women have low paid jobs (EC, 1997b). Furthermore the over-representation of women amongst the low paid persists even when part-time employment, which is even more likely to be poorly paid, is excluded (Rubery and Fagan, 1993).

Across the EU the difference in the economic activity rates of women and men is becoming smaller — particularly amongst younger and more educated men and women (the difference in the economic activity rates of men and women aged 25-59 who had received higher education was only 10 per cent (85 per cent v 95 per cent respectively: EC, 1997a, p. 4)). Ironically, in a context where men's definition of themselves has revolved around paid employment, it is women who are increasingly attractive to the market. This is partly because of the increased importance of the service sector, its persistent gendered character and the lower level of women's wages. Over the last 20 years, women have accounted for the entire growth in the EU's labour force. This trend is likely to continue (EC, 1997b). In Ireland, over the past 25 years (1971-1996), 90 per cent of the increase in employment was due to increases in women's employment. This is what has lain behind the Celtic Tiger phenomenon in the 1990s: indeed O'Connell (1999, p. 217) has noted that talk of the Celtic Tiger has "misconstrued the gender of the animal".

The cultural depiction of men as the appropriate authority figures can be seen as part of the processes through which male control is maintained. Male authority is very clearly reflected in men's and women's differential occupancy of positions of authority in the economic system. Davies (1995, p.32) has rather perceptively noted that by exerting power on behalf of women, men's own self interest is obscured and "greatness" achieved: "In pursuit of a cause, the struggle for power is ennobled and becomes worthy". Such a position is increasingly seen as problematic, although it is very difficult to change. In any case, if we look at management positions then, depending on how we define them, women hold 15

04/12/2016 19:15:46

Is this because male employment was at capacity? Has this changed over the past 16 years?
What is gender divide in service sector now?

Note taking P18, eportfolio entry 2

As the majority of study was self-directed, participants had to develop individual techniques to aid their understanding of the sociological content, theory and concepts. These techniques were varied, and innovative, and were heavily orientated towards online resources such as YouTube videos, online lectures, podcasts, glossaries, online articles, and watching recordings of previous online tutorials.

"I find if I cannot grasp a piece of information through one format, i.e. reading a text, sometimes watching a YouTube video regarding the topic can really help me comprehend the material better." (P2, eportfolio entry 3)

Some participants communicated the positive impact that doing the module assignments had on their learning and on the development of their academic skills. The detailed research that participants conducted for their assignments gave them in-depth knowledge on specific topics such as law, improved understanding, and encouraged them to write analytically, and to develop their research skills using the library online databases.

"This learning process involved taking a topic that I wanted to use in my online discussion regarding how law affects an individual, for example, prostitution laws and writing down a list of how I perceive it to affect individuals. I then read journal articles that studied, for instance, work quality of prostitutes and noted how it corresponded with my opinions and how it differed from what I had assumed before researching. This process of listing familiar information and new information, was interesting as a learning process as it reinforced what I already believed and I remembered

new information particularly well as some of the information that I gathered surprised me.” (P2, eportfolio entry 3)

A number of participants experienced academic difficulties related to completing assignments. They reported on their academic challenges with writing and referencing and how these were negatively impacting on their learning and coursework. Struggling to write in an academic style, and feeling that their writing was not up to university standard, was the most frequently reported difficulty experienced by participants.

“If I am to be totally honest, writing has always been a bit of an issue for me. Throughout school, I had difficulty trying to get the information from my head onto the paper. It appears that I still have that issue, the only difference now is, trying to extract the information from my head, get it onto the paper and write it in an academic style. I'm not sure if this is mental block, I am finding it quite stressful as it is adding an extra dimension of work for me that I really shouldn't be finding this difficult.” (P5, eportfolio entry 4)

8.3.1 T3-sub-theme 1: Time Management

The issue of time management is very strongly articulated by participants in their narratives, the pressure of finding sufficient study time, the stress and worry they felt about falling behind, was a persistent difficulty faced by participants throughout the academic year.

“I’m beginning to worry that I won’t have time for a more in depth look at everything in this section, before having to move on to Crime and Deviance

in advance of Assignment 2. It all comes down to time management, which I remember was an issue at this time last year. With all the extra pressures of Christmas from a work and family point of view the study can get squeezed. I may have to do less(no?) housework to facilitate my learning this month. This idea has not been negotiated with my partner and may have to be revised! Perhaps a self-imposed ban on TV for the month is a more acceptable strategy. However, all work and no play!" (P20, eportfolio entry 2)

The challenge of fitting study time into their busy lives was described by participants when detailing when they studied. At the weekend, every evening, in the morning when the kids were at school, early morning before work, on days off, between shifts. Finding time to study was a recurring challenge for participants, which required developing creative strategies to try and carve out study time in their already busy lives.

"My learning process is still haphazard and I struggle to block off sufficient time to study. I have dealt with this to some extent by spending longer hours in my office in work to catch up on my modules. The downside of this is I am available to work colleagues even though I am technically finished work and situations often arise that require my attention." (P3, eportfolio entry 3)

In addition, participants reported studying in a wide range of places. They studied at home, in the library, on their phone while commuting to work, in cafes, in work, and sitting on the side of football pitch. In their eportfolio entries, many participants included images of their study spaces, for example participant 18 evidenced his

study space in the image below, which he described as *“the view from the window of my attic office”* (P18, eportfolio entry 5)



The view from my attic office. P18, eportfolio entry 5

The majority of participants proactively planned their study, many created study schedules and task lists which they included in their eportfolio entries. For some participants this systematic approach to planning study was effective, and the establishing of regular study routines enabled them to cope with coursework. Participant 17 demonstrated his approach in his study plan for January.

January 2017

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	~~X~~	1 Soc 3A 7:00 - 10:00	~~X~~	3 Soc 3A 8:00 - 10:00	4 Soc 3A 20:00 - 22:00	5 Soc 3A 7:30 - 9	6 Soc 3A 13:00 - 15:00
2	Write 3rd reflection 18:00 - 22:00	8 Post 3rd reflection 7:00 - 19:00 19:00 - 22:00	~~X~~	10 Online Post 1 19:00 - 22:00	~~X~~	12 Online Post 2 20:00 - 23:00	13 DC6 P1210 3-6
3	15	16	17	18	19	20	21
4	22	23	24	25	26	27	28
5	29	30	31				

Study plan: P17 eportfolio entry 3

For other participants, despite good intentions about creating a regular study schedule, their challenges with time management persisted which continued to cause them considerable stress and anxiety.

"My learning process this year involved two strategies: firstly, snatching time whenever I could to get my college work done and secondly, descending into a blind panic at the last minute before having to submit work. These are not approaches that I would recommend or indeed intend to replicate as I go forward with this course." (P7: eportfolio entry 5)

8.3.2 T3-sub-theme 2: Confidence

Many participants expressed feelings of self-doubt, fear, apprehension, uncertainty and lacked confidence about own academic abilities and approaches to studying.

"I am very happy to see that over the past few months my reading skills have vastly improved. Before I started my journey of third level education, my reading skills were below average at the best of time, I had a lack of confidence in myself and I could not abstract information from a text on the best of days." (P15, eportfolio entry 3)

Some participants grew in confidence as the module progressed. Getting good assignment results and positive feedback validated their perceived abilities, and enabled them to overcome their feelings of uncertainty.

"Previously, I was unaware that self-doubt affected new writing challenges such as the SOC3A A1 article review. However, I was aware of a drive to learn and demonstrate knowledge of sociology to myself. I believe the grades validated my ability and I was no longer distracted or made anxious by self-doubt. Therefore, I have discovered growth in my confidence impacted my study habits and did not uncover contrary study habits." (P19, eportfolio entry 3)

By proactively addressing and overcoming their perceived academic weaknesses, some participants gained confidence in their academic abilities and felt well prepared for future study.

I: And do you feel more ready for next year?

P13: Totally. I mean, I think if you had asked at the start of the year how I would feel about third year I was just very overwhelmed, I was finding it so daunting and I feel like it is going to be fine, I really do. I feel like it is just going to be the same as this year with different assignment titles.

I: So, your confidence has grown?

P13: Oh, without a shadow of a doubt, yeah. I feel like I know how to study now, I know how to reference, I am organised, I have my diary for doing my timelines, I feel very ready.

I: That is great, so a big jump.

P13: Yeah. Big, big jump but I mean, I feel like it is progressing very well.

(P13, interview 2)

This proactivity was stimulated by the process of reflection, planning and self-assessment as part of learning with an eportfolio.

8.3.3 Discussion of T3: My approach to learning

This section discusses the findings of the *T3: My approach to learning* in relation to the research question and the existing literature. With respect to the research question “*can eportfolios enhance the nature of the learning experience among online distance learners?*” this question was answered by the findings presented in T3 above. However, *T3: My approach to learning*, significantly overlaps with *T2: Being an online distance learner*. While T2 focuses on the experiences of being an online distance learner, T3 reports on the learning approaches of online distance learners as documented in their eportfolios. Thus, theme 2 and theme 3 together contributed to the second finding of the study, that learning with an eportfolio enabled online distance learners to document their lived experiences, and learning approaches in an authentic and meaningful way.

The nature of the learning experience for online distance learners was enhanced by reflecting on their personal approaches to learning in their eportfolios. As discussed

in the previous section, the online distance learners' eportfolios give a unique window into their learning approaches which according to Watkins et al. (2015) the majority of their learning takes place outside of the teacher's view. These highly personal approaches to learning provide a detailed insight into online distance learners study techniques, when, where and how they learned. As the mode of learning in the module is largely self-directed, the participants own approaches to managing their learning was crucial to their academic success in the module. These findings are consistent with previous research carried out by Bolliger & Shepherd (2014) and Brandes & Boskic (2008) which found that the key benefit of learning with an eportfolio, was the developmental reflection on their learning processes that it enabled. This study found that participants documented the development of their highly personal approaches to studying in their eportfolios. This is consistent with previous research carried out by Eynon & Gambino (2017) and Kabilan & Khan (2012). One point of difference is that there are no studies which examine online distance learners learning approaches, and study habits, using eportfolio. However, there are several empirical studies which investigated the study habits of online distance learners, which are now discussed in relation to the findings of T3 above.

Although the approaches to learning and the study techniques of online distance learners in this study, were highly individual, they still conformed to traditional approaches to study such as note taking, reading, assignment preparation and writing. This is broadly in line with previous research carried out by Orton-Johnson (2007) and Cakiroglu (2014) which found that the study habits of online distance students follow traditional study activities such as reading, note taking and writing assignments and are similar to campus based students. Individuality was particularly noticeable in the many visual examples of note taking approaches in the evidence

part of their eportfolio entries. The prevalence of note taking examples in participants' eportfolios indicates that note taking formed an integral and important element of their approaches to learning. This finding is in contrast with research conducted by Watkins et. al. (2015) which found that online students were less likely to take notes.

This study found that online distance learners developed individual techniques to aid their understanding of the sociological content, theory and concepts. These techniques were varied and innovative and were heavily orientated towards online resources. This is broadly in line with previous research that higher education students are increasingly using online resources such as videos, open educational resources, and wikis to aid their comprehension of course content (Henderson, Selwyn, Finger, Aston, 2015).

Completing assignments had a mixed impact on the learning experiences of participants in this study. For some participants doing the module assignments had a positive impact on their learning and on the development of their academic skills. For other participants, writing assignments highlighted their deficiencies with writing, research and referencing. This finding is in conflict with the underlying philosophy of assessment in the module which is that "assessment drives learning" (Hassan, 2011). It would indicate that for those participants who struggled with the academic skills necessary to complete the assignments, that this was a demotivating factor.

8.3.4 Discussion of T3-sub-theme 1: Time Management

In this study, effective time management was a persistent challenge and source of stress faced by online distance learners. There is an overlap between this sub theme and *T2-Sub-theme 3: Studying while balancing life commitments*. The majority of participants proactively planned their study, and many created study schedules and task lists which they included in their eportfolio entries. For many students, this systematic approach to planning study was effective and they established regular study routines. For a minority of students, their challenges with time management persisted, which continued to cause them considerable stress and anxiety. These findings are in line with previous research which identified the importance of a sustainable study routine for online distance learners (Brown et al., 2015; Buck, 2016). In addition, the persistent challenge for online distance learners to follow a regular study schedule is well documented in the literature (Brown et al., 2015; Buck, 2016; Blackmon & Major, 2012; Darmody & Fleming, 2009; Sun, 2014; Zemblyas et al., 2008).

Online distance learners developed creative strategies to try and carve out study time in their already busy lives. This is evident in unusual and personal study patterns and locations described in their eportfolios. This finding is consistent with the literature, which found that online distance learners were resourceful and highly individual in their study patterns (Buck, 2016; Andrews & Tynan, 2012).

8.3.5 Discussion of T3-sub-theme 2: Confidence

Online distance learners expressed feelings of self-doubt, fear, apprehension, uncertainty and lacked confidence about own academic abilities and approaches to studying in their eportfolio entries. Getting good assignment results and positive feedback resulted in a growth in confidence for some participants. This is in keeping

with O'Shea et al. (2015) and Baxter (2012) research which found received good marks in assignments and exams provided students with evidence which supported their decision to study. Confidence was gained by some participants by proactively addressing and overcoming their perceived academic weaknesses. This finding is also consistent with Baxter (2012) who found that student confidence grew by overcoming challenges.

8.3.6 Summary of Discussion of T3: My approach to learning

The second finding of the study that *learning with an eportfolio enabled online distance learners to document their lived experiences and learning approaches in an authentic and meaningful way*, has been shown to be an original finding of this study, no previous studies have examined the eportfolio as a window into the learning approaches of online distance learners. However, the learning experiences and study habits of participants as documented in their eportfolios was shown to be broadly consistent with previous research which was outlined in the discussion above.

8.4 CONCLUSIONS

The findings and discussion of T2: *Being an online distance learner*, and T3: *My approach to learning* have been presented and discussed in this chapter. The second finding of this study has been critiqued in relation to the research question

Finding 2: Learning with an eportfolio enabled online distance learners to document their lived experiences and learning approaches in an authentic and meaningful way.

The learning experiences of online distance students as documented in their learning portfolio are largely consistent with the online distance learning literature on student experiences. This study found that the most challenging aspect of being an online distance student – studying while balancing competing responsibilities – is consistent with previous research which found that trying to fulfil multiple roles can cause online distance students to feel considerable stress. The nature of the learning experience for online distance students was enhanced by reflecting on their personal approaches to learning in their eportfolio. The online distance students' eportfolios give a unique window into their learning approaches. These highly personal approaches to learning provide a detailed insight into online distance students' study techniques, when, where and how they learned. This study found that participants documented the development of their highly personal approaches to studying in their learning portfolio. No previous studies have examined online distance students' learning approaches and study habits, as documented by eportfolio based learning.

Building on the findings and discussion from chapters seven and eight, the next chapter discusses the findings and discussion in relation to critical thinking, eportfolio and the sociology discipline context.

9 CHAPTER NINE FINDINGS & DISCUSSION: PART 3

9.1 INTRODUCTION

This chapter presents the analysis of the eportfolio and interview data in order to address part 2 of the research question: *can eportfolios enhance the development of critical thinking among online distance learners?* The analysis is constructed in relation to the conceptual frameworks of the learning portfolio, and critical thinking outlined in chapters two and three of the dissertation. The chapter follows a combined approach to the findings and discussion sections of the study. After each theme is introduced, it is followed by the discussion in relation to the research question and existing literature.

9.2 T4: DEVELOPING CRITICAL THINKING IN MY EPORTFOLIO

The data suggests that the combination of learning with an eportfolio and the discipline context of sociology enabled participants to develop their critical thinking skills. There was a symbiotic relationship between the eportfolio and the discipline context of sociology. The eportfolio provided a place for learners to think deeply, and critically about themselves and their learning, in relation to the sociology module content. Without the sociological content to reflect upon, the experience would have lacked depth, context, ideas and theories to interact with. Without the eportfolio, the participants would have had no place to capture their thoughts, feelings and ideas about learning sociology. Therefore, the eportfolio alone did not impact on the participants' development of critical thinking, but rather the combination of the eportfolio and the discipline context of sociology had a positive impact on the development of critical thinking skills, as documented in the

participant narratives. With the exception of the last sub-theme called learning about my own thinking, in this sub-theme there is clear evidence of the impact of learning with an eportfolio on the development of participants' self-regulation.

Most participants described how their critical thinking had changed, developed and improved over the course of the academic year. These were described as changes in outlook or thinking, improved analytical approaches, a greater appreciation for source quality, and an increased understanding of different perspectives. Finally, the most strongly articulated change in critical thinking was increased self-awareness about their own thinking.

In interview 1, participants were asked to outline their personal definition of critical thinking, all of those interviewed demonstrated an understanding of the concept of critical thinking. Therefore, students could make informed interpretations of their own development of critical thinking skills.

"I: first of all do you know what's meant by the term critical thinking?"

P7: Looking at something to see the pros and the cons, weighing up both sides, in terms of assessing different journal articles and seeing if it's an evenly based argument or a balanced argument, could more detail have been put in or not, are there different sides that could be explored." (P7, interview 1)

This personal definition of critical thinking from participant 7 demonstrates a clear understanding of critical thinking and how to apply critical thinking in the context of higher education study.

Students reported that studying the sociology module and learning with the eportfolio encouraged them to question the world around them, to question sources, to argue against the current, to develop a critical eye.

“Finally, I am enjoying this form of learning with loop reflect eportfolio, it allows me to delve more deeply into these concepts by putting my thoughts in writing and to ask questions. I think it will be a useful tool in my study this year!” (P23. eportfolio entry 1)

This means that by asking questions, participant 23 was developing a more critical mind-set about her own learning, which was enabled by the eportfolio.

The development of more analytical approaches to thinking, were evident in participant narratives which described evolving from binary thinking to a more directional approach which acknowledged multiple perspectives and examined opinions.

“While completing the first assignment, it became evident to me that defining a concepts such as Power can be quite complex. Similarly, while reading for assignment two, the concept of Crime and Deviance offers a vast range of definitions. Each viewpoint makes very strong, interesting and persuasive arguments however, none appear to be without fault. Therefore, when reading the literature I have learned to keep an open mind to the various explanations on offer and not accept one viewpoint as concrete.”
(P17, eportfolio entry 3)

This skill of analysis of argument is evident in participant 17’s above description of his analysis and assessment of argument of crime and deviance.

Developing more effective approaches to analysis was expressed by participants in terms of developing skills by comparing ideas, contrasting theorists, and examining competing arguments, in their reading of academic texts in preparation for assignments.

“So far I’ve been learning a lot about labelling theory in preparation for the fourth assignment. Researching the original studies and comparing them to more recent ones have been the most interesting part of the assignment so far as sociologists have come to develop so many more aspects in this field and the strong link between it and psychological theories is attracting plenty of my attention.” (P6, eportfolio entry 4)

This is evident in the approach to examining ideas outlined above by participant 2 in her eportfolio entry.

In addition, the development of a greater understanding of source quality, and of the importance of using quality evidence in their assignment work, was detailed by participants.

I: Okay, no that’s very interesting. Do you think your critical thinking skills have changed or improved?

P2: I think they’ve probably improved because I only really started, well I’ve been always interested in politics and sociological topics without realising they were I suppose but I think they’ve definitely improved but with learning how to expand on them I suppose. Like I suppose like looking up information and getting like valid sources and being like this is information that was studied and it was true.

I: Evidence.

I: It was evidence yeah. So I think I've gotten better at it this year. It's almost more complex though, the more you learn the more you're like oh there so many different ways of looking at things and different ways of validating things even, you know.

(P2, interview 1)

This demonstrates a development of the critical thinking skill of inference by participant 2, in particular the sub skill of querying evidence.

9.2.1 T4 sub-theme 1: Being open-minded

Over the course of the academic year, participants reported becoming more open minded in considering others points of views, to learning and understanding different perspectives and more open to using technology.

"Studying the subject of power has encouraged me to look more closely when reviewing current affairs such as the U.S. presidential campaign. In a discussion with my brother I noticed that while he was siding with a particular candidate, I was interested in the pros and cons of both. In the past perhaps, I would have been quicker to jump to conclusions with little thought to the bias of what information the media are manipulating." (P10, eportfolio entry 1)

Taking part in an online discussion, as part of their assessment, prompted participants to realise the value in considering multiple viewpoints on the role of law in society. Participants describe their realisation of the value of considering other perspectives on module topics such as law, and power. This highlighted to

participants, areas they hadn't previously considered and enabled them to try and understand both sides of an issue before forming a conclusion.

"Sociological imagination has an influential role in life and this is something I have learned from doing this course and this has been one of the most valuable lessons I can take from my learning to date, and it is only through using it that we have the capacity to look beyond and view things from a different perspective. Reflecting on my learning journey, everything that I have learned about sociological imagination has allowed me to have a diverse view on everything that I come across, and whenever I come across a situation, I now try to look beyond and understand the other side of a problem, before, drawing a conclusion." (P11, eportfolio entry 4)

This means that through self-examination in their eportfolio entries, participants became aware of the value of considering different perspectives. In their eportfolio entries, by examining and reflecting on their thinking processes, students demonstrated an awareness of their own personal biases, and how bias influenced their thinking, and development of arguments.

"Thinking about the concept of personal bias, it's impossible to completely eliminate this. Ideally one should try to look at an argument from different angles with the aim of strengthening it. However, at some point you have to accept that the sum total of who you are and your lived experiences have to influence your interaction with the theory and research that provide the starting point for your own work." (P20, eportfolio entry 4)

It would seem that self-examination, within their eportfolios, enabled participants to detect and address their biases.

9.2.2 T4-sub-theme 2: Learn about own thinking

Learning with an eportfolio, prompted participants to think and examine their own thought processes, feelings and experiences. The eportfolio provided them with a space to document the changes in their beliefs, opinions, understanding and attitudes. Self-examination stimulated participants to assess their strengths, weakness and challenges to formulate approaches to improving, and overcoming the issues they identified.

Participants documented their personal thinking processes in their narratives, and described how they thought, and reflected, on their learning during their daily lives.

“I do most of my thinking a day or two after I have read something. I find walking my dogs in the mornings has been a great time to think of the reading that I’ve done, or a lecture I have listened to. I find it is in the quiet that I can hear my inner voice, which allows me to unravel the facts that I have taken in.” (P24, eportfolio entry 1)

This means that writing reflectively in their eportfolio encouraged the critical thinking skill of self-regulation in participants, by documenting their thinking processes.

Learning with an eportfolio prompted participants to assess their strengths and weaknesses, and to identify and record problems they were having, and to make proactive plans to resolve these problems.

“One implication I think the learning portfolio will have on my future approach to learning is that, as stated earlier, as I have discovered that I

find it difficult to confidently put my thoughts to paper for assignments, I have decided to discuss module or assignment topics with people I know or fellow students after I take notes on the module text or attempt an assignment as I feel it is an effective way for me to express my knowledge on a subject and solidify my thoughts about it. I think that if I could write down a few notes after these conversations will be beneficial for my confidence in academic writing.” (P2, eportfolio entry 2)

This indicates that the eportfolio prompted participants to self-examine, and self-correct issues identified through the process of reflecting on their learning. This is evident in participant 2 narrative above, as they identified a difficulty with writing, and then formulated a strategy to correct the problem.

Many participants articulated a strong desire to proactively improve their academic skills, in their narratives are frequent descriptions of developing new study skills, and experimenting with new approaches to learning, research, referencing, note taking, reading techniques and writing skills.

“At the beginning of this year I began reviewing assignments I submitted last year in order to see where I could improve. Referencing seemed to be my biggest issue. I found the Harvard referencing guides quite inaccessible as there was far too many options and material to scroll through before finding what it was I was looking for. I decided over the last month to focus on referencing. I made a shorter version of the referencing guide and I’ve since been using it and find I’m referencing certain things without looking at the guide. I definitely feel more confident in my academic writing abilities.” (P13, eportfolio entry 4)

The eportfolio entries captured a snapshot of student' learning at a particular time, and being able to look back on their eportfolio entries, enabled participants to notice change and development in their thoughts, feelings and learning habits.

"Sociological imagination has an influential role in life and this is something I have learned from doing this course and this has been one of the most valuable lessons I can take from my learning to date, and it is only through using it that we have the capacity to look beyond and view things from a different perspective. Reflecting on my learning journey, everything that I have learned about sociological imagination has allowed me to have a diverse view on everything that I come across, and whenever I come across a situation, I now try to look beyond and understand the other side of a problem, before, drawing a conclusion." (P11, eportfolio entry 4)

This retrospective aspect of looking back at eportfolio entries, facilitated self-regulation in the participants, by capturing their development over time. Having a written record to look back at and reflect upon enabled participants to more effectively examine their own thinking.

Participants strongly articulated a greater awareness of the value of self-examination to their learning, and understanding of their learning and thinking processes. The experience of learning with an eportfolio helped online distance students to learn about themselves.

"I hadn't fully understood the type of learner that I am until I undertook this task. I have always been a very practical person which I believe has contributed to my not being a naturally reflective person. The same I would

apply to my studies and this module. Generally, if tasks are set for me, I will manage my time and my objectives by making a list and checking items off that list when they are completed. This manages the “how” aspect of study for me but it didn’t account for the “why” aspect. The reflective journal encouraged me to question why I found aspects of the module more interesting than others, why some methods of study were more challenging than others and how my own feelings and behaviours contributed to my overall learning process.” (P12, eportfolio entry 5)

This awareness in participants, of how valuable self-examination using an eportfolio is to learning, demonstrates the development of critical thinking skill of self-regulation.

9.3 DISCUSSION OF T4: THINKING CRITICALLY IN MY EPORTFOLIO

In this section, the findings of the *T4: thinking critically in my eportfolio* are discussed in relation to the research question and the existing literature. The research question “*can eportfolios enhance the development of critical thinking among online distance learners?*” was largely answered by the findings of *T4: thinking critically in my eportfolio*. However, the fundamental role of the discipline context of sociology, to the development of critical thinking skills within the context of eportfolio learning was more significant than expected. This led to the third finding of the study, that studying sociology combined with learning with an eportfolio, supported the development of critical thinking skills and dispositions, in online distance learners.

Finding 3: Studying sociology combined with learning with an eportfolio

supported the development of critical thinking skills and dispositions in online distance learners.

Additionally, it led to the fourth finding of the present study, that learning with an eportfolio supported the development of the critical thinking skill of self-regulation for online distance learners.

Finding 4: Learning with an eportfolio supported the development of the critical thinking skill of self-regulation in online distance learners.

Most participants described that their critical thinking had changed, developed, and improved, over the course of the academic year. These were described as changes in outlook or thinking, improved analytical approaches, a greater appreciation for source quality, and an increased understanding of different perspectives. Finally, the most strongly articulated change in critical thinking was, increased self-awareness about their own thinking.

In this study, learning with an eportfolio in conjunction with studying sociology, aided the development of a critical mind-set in some participants, which encouraged them to question the world around them. This finding supports the theories of the dispositional side of critical thinking as defined by Ennis (2016), the APA Delphi (Facione, 1990) conception of a “critical spirit” and Facione, Facione, Giancarlos’ (2000, p.30) definition of disposition as “consistent internal motivation to engage problems and make decisions by using critical thinking”. This finding is consistent with Eynon & Gambino (2017) argument that eportfolio pedagogy, encourages inquiry, by gives students freedom to investigate questions about which

they are curious, and that their eportfolios gives students a place to showcase the process, and products, of their inquiry.

In addition, the critical mind-set found by this study is in keeping with the Giancarlo & Facione's (2001, p.35) definition of the disposition of truth seeking as "the courageous desire for best knowledge in any situation, the inclination to ask challenging questions and to follow reasons and evidence wherever they lead". There are no empirical studies which investigate the relationship between critical thinking dispositions and eportfolio learning. In the absence of this research a similar strategy using reflective writing and critical thinking dispositions by Naber & Wyatt (2014) is discussed. This study's finding with regard to the development of the critical thinking disposition of truth seeking, supports Naber & Wyatts' (2014) result that the experimental group had a significant increase in the disposition of truth-seeking, following the intervention using reflective writing.

The data indicates that learning with an eportfolio while studying sociology, facilitated the development of more effective analytical approaches such as examining ideas, detecting arguments and analysing arguments in some participants. In this case study, analysis is defined as "to identify the intended and actual inferential relationships among statements, questions, concepts, descriptions, or other forms of representation intended to express beliefs, judgements, experiences, reasons, information or opinions" (Facione, 1990, p. 7). In addition, some participants in this study demonstrated a development in the critical thinking skill of inference which included a growth in their awareness of source quality and the importance of using quality evidence in their academic work. Linking this finding back to the critical thinking theoretical framework for the study, inference is defined as "to identify and secure elements needed to draw reasonable

conclusions; to form conjectures and hypotheses; to consider relevant information and to deduce the consequences flowing from data, statements, principles, evidence, judgements, beliefs, opinions, concepts, descriptions, questions or other forms of representation” (Facione, 1990, p.9).

There is no empirical research about the specific skills of critical thinking such as analysis and inference in relation to eportfolio based learning, but there is a small body of research in relation to critical thinking generally and eportfolio based learning. This study’s findings in relation to analysis and inference are in line with Penny Light et al. (2012, p.7) theory that eportfolio based learning can develop students’ critical thinking skills. Further, it is in keeping with research carried out by Morreale et al. (2017) who found that a capstone eportfolio can promote critical thinking. Finally, the above finding is in keeping with results from the C2L Core survey taken by 10,170 students which found that 64% of respondents stated that building their eportfolios helped them think more deeply about the content of the course, 69% of respondents stated that building their eportfolios helped them make connections between ideas, 66% answered that using eportfolio has allowed them to be more aware of my growth and development as a learner (Eynon & Gambino, 2017). More generally, Abrami et. al. (2015) found that approaches which were authentic, situated and involve real world examples were the among the most effective strategies for promoting critical thinking. The eportfolio intervention from this study meets these features, and therefore could be considered an effective strategy for promoting critical thinking within a discipline context.

9.3.1 Discussion of T4 sub-theme 1: Being open-minded

There is some overlap between this sub-theme: *being open-minded* and *T4 sub-theme 2: learn about own thinking*. Through self-examination, participants reflected

on their personal views, and biases, in the context of being open-minded. This study found that learning with an eportfolio, combined with the study of sociology, facilitated the development of the critical thinking disposition of open mindedness. This means that through self-examination in their eportfolio entries, participants became aware of the value of considering different perspectives, and developed an awareness of their own personal biases, and how bias influenced their thinking and development of arguments. This finding is in keeping with the Giancarlo & Facione (2001, p.35) definition of the disposition of open-mindedness as “tolerance for new ideas and divergent views”. This study’s finding, with regard to open mindedness, is consistent with the only other related empirical study by Peet et al. (2011) which investigated open mindedness as an element of integrative knowledge development through eportfolio based learning. This study found that by learning with an eportfolio participants made significant gains in being able “to identify and discern one’s own and others’ perspectives” (Peet et al. 2011, p.11).

There are no further empirical studies which investigate the relationship between critical thinking dispositions and eportfolio learning. In the absence of this research similar strategies are examined. This study’s finding with regard to the development of the critical thinking disposition of open-mindedness, is consistent with a study conducted by Song (2008) investigating the impact of online blog games, on language learners’ critical thinking skills and dispositions, found that the blogs encouraged open-mindedness by giving them the freedom to explore their own bias with other students. In addition, this study’s finding with regard to awareness of bias is consistent with Grauerholz & Bouma-Holtrop (2003) framework of critical sociological thinking.

9.3.2 Discussion of T4 sub-theme 2: Learn about own thinking

The data suggests that learning with an eportfolio, supported the development of the critical thinking skill of self-regulation in online distance learners. In the context of this study, self-regulation is defined as “self-consciously to monitor one's cognitive activities, the elements used in those activities, and the results educed, particularly by applying skills in analysis and evaluation to one's own inferential judgments with a view toward questioning, confirming, validating, or correcting either one's reasoning or one's results” (Facione, 1990, p.10). This finding supports the theories of Abrami & Barrett (2005), Zubizarreta (2008), Penny Light et al. (2012), which connect eportfolio based learning with the development of self-regulation in students. Further, it is in keeping with previous research carried out by Nguyen & Ikeda (2015), Stoten (2016), Jenson (2011), Morales et al. (2016) Dominguez et al. (2014) who found that learning with an eportfolio, supported the development of self-regulation in higher education students.

In this study, the way in which self-regulation was developed by students was through the process of self-examination, and self-correction, in their eportfolio entries. This means that the eportfolio prompted participants to self-examine, and self-correct issues, identified through the process of reflecting on their learning. In the context of this study these sub-skills of self-regulation; self-examination and self-regulation adhere to the APA Delphi definitions (Facione, 1990) but are called metacognition by some theorists (Bokser et al., 2016; Bowman et al., 2016; Chen, Penny Light, Ittelson, 2011). These findings in relation to self-examination and self-correction are consistent with previous research carried out by Bokser et al. (2016) and Bowman et al. (2016) who found that eportfolio, which focused on the learning process could foster metacognitive skills such as “developing an awareness of their

learning and thinking processes as well as the ability to monitor, assess, control and change those processes” (Flavell 1987, cited in Bosker et al. 2016).

The retrospective aspect of looking back at eportfolio entries, facilitated self-regulation in some participants, by capturing their development over time. This finding is somewhat consistent with Penny Light, Chen, Ittlesons’ (2011) conception of documenting learning and Zubizarreta’s (2008) theory that the “payoff for students will come when they recognize that reflecting on and documenting their progress as learners reinforce the foundational elements of significant learning.” However, there is one significant difference, they don’t emphasize the temporal aspect of retrospection, which greatly impacts on the development of self-regulation.

9.3.3 Summary of Discussion of T4: Thinking critically in my eportfolio

This section has discussed the findings of T4: thinking critically in my eportfolio in relation to the research question and the existing literature, it has introduced the third and fourth findings of the present study:

- *Finding 3: Studying sociology combined with learning with an eportfolio supported the development of critical thinking skills and dispositions in online distance learners.*
- *Finding 4: Learning with an eportfolio supported the development of the critical thinking skill of self-regulation in online distance learners.*

These have been shown above to be broadly consistent with previous research.

With the exception of these original elements: firstly, the importance of discipline context in relation to the development of critical thinking while learning with an eportfolio. Secondly, within the context of a discipline, learning with an eportfolio

can promote the development of the critical thinking skills of analysis and inference and the dispositions of truth seeking and open mindedness.

9.4 T5: THE SOCIOLOGY DISCIPLINE CONTEXT

The discipline context of sociology, and more specifically the module context of Soc3a: Power, Social Order, Crime, Deviance, Work & Employment, framed the learning experience for the participants in the study. The concepts, content, theory and assignments they were learning throughout the module, was the material that stimulated consideration and reflection in their eportfolios. Without the sociological knowledge to learn, interact with, understand, read and think about, the participants would have had very little to write about in their eportfolios. The sociology discipline context was fundamental to meaningful learning with an eportfolio.

Studying sociology was described in positive terms as interesting, stimulating, engaging and intriguing. Participants valued the module's freedom to explore own ideas, form own opinions and apply them to real life. The module content was perceived as relevant and interesting, in particular the topics of power, feminism and crime and deviance.

"Upon reading about 'charismatic authority' in chapter 22 and noting the authors use of example between Jesus Christ and Hitler I was irreversibly intrigued. I find I have spent much of my free time outside of study lightly researching this concept and reading about this deeply interesting comparison and looking at other ideas linked to this such as cult leaders and politicians power." (P13, eportfolio entry 1)

While studying sociology was perceived as interesting, it was very clearly articulated in the participant narratives as a very challenging subject. Understanding sociological theory and concepts was reported by participants to be difficult, abstract, confusing and heavy. At the start, participants struggled to understand the module theories and concepts, but over time developed strategies which aided their understanding.

"I then went through a process of not understanding what sociology was about as I could not understand why it was significant to talk about Karl Marx in relation to religion in Ireland today, but as I delve more into the area I am now beginning to see why the work of Marx and other founders of sociology are important. At the beginning of this year I had to refresh my memory as to what each of the theories mean such as social conflict theory and I believe I am now coming to grips with the importance of theory within sociology. Theories help explain why groups of people choose to perform certain actions and why and how societies function and transform in certain ways." (P14, eportfolio entry 1)

One effective strategy, promoted by the module tutor to improve understanding of sociological theory, was to encourage students to apply it to real examples. This is evident in participant 20's description below:

"I found the theories challenging in terms of complexity of ideas but managed to grasp almost all quite well. The one that gave me most problems was Giddens structuration which probably requires further reading and more concrete examples. I've asked my tutor for help – I've realised that the key to really understanding theory are good examples of how it

translates into reality. Reading the theorists' perspectives hasn't changed my essential view, but has allowed me to conceive of the mechanisms by which inequality is produced and maintained in more detailed, specific ways." (P20, eportfolio entry 1)

By encouraging the application of theory to real life, the module tutor was inducting students into the sociological discipline culture, where the application of theory to real life is perceived as the means to develop sociological imagination.

In their eportfolios, participants described that studying sociology challenged their pre-existing ideas and assumptions, and encouraged them to examine issues from multiple perspectives, and look for deeper explanations.

"At the outset of this course, I was rigid in my thinking, but that has changed, I still think how I always have. However, I spend more time analysing and thinking through and trying to understand from a differing perspective. This has been the greatest of all learning for me, and I have discovered that we are all in fact products of a learned value system, in which we have been taught to think what we believe as opposed to thinking freely. We are raised with others beliefs and values systems, and while this is not a bad thing, it can prevent us from developing an individual understanding of the world and the society that we live in. I feel I have now developed my Sociological Imagination and that I fully understand what this means now." (P11, eportfolio entry 5)

In the above extract participant 11 shows her interpretation of how her thinking has changed and evolved in relation to sociology. Her conception of critical thinking is

closely linked to the theory of sociological imagination and the development of critical mind-set.

9.4.1 T5: sub-theme 1: Applying sociological theory to everyday life

The eportfolio gave participants a place to reflect on how the sociological theory applied to everyday life. Reflecting on, and applying their sociological theory in their eportfolios seems to have clearly enhanced participants' learning experience of sociology. By applying their theoretical knowledge to real examples, participants were consolidating and deepening their learning of those theories. In the participant eportfolio entries there were frequent examples of their applied knowledge. Thus the eportfolio became a unifying medium for the expression of applied understanding of the sociological theory and concepts.

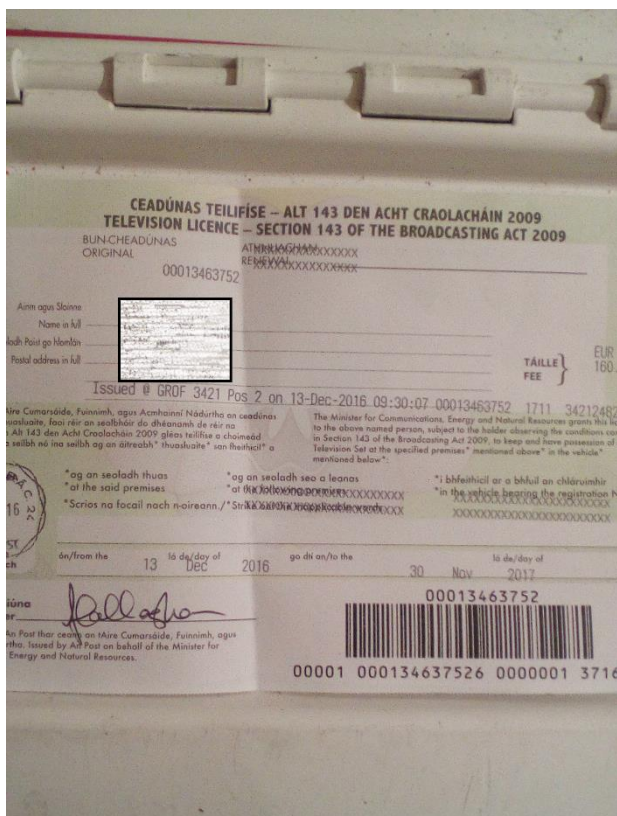
By applying the sociological theory to everyday examples in their eportfolios, participants demonstrated their understanding of the theory. It enhanced and deepened their learning of sociology by turning theory into practice. This application of theory is evidence of higher order thinking in participants.

"In exploring my study of negative power, conflict theory and feminist sociology and in an attempt to further understand the concepts, I sought an example in society that would demonstrate all. I believe I found it in the form of the Russian feminist lesbian/gay rights group called Pussy Riot. I believe what they did was a form of negative power, even though they ultimately did not change anything for women or lesbian/gays in their home country. Pussy Riot made a stand in their resistance to Russian President Vladimir Putin's discriminatory practices against women and lesbian/gay community. They held protests throughout Russia and ultimately went to

prison for the views but garnered international support and attention.

“(P23, eportfolio entry 1)

In addition, participants applied sociological theory to their own personal lives also, participant 20 illustrated this in his example in the image below, which he described as *“I am now a contributor to the overinflated salaries of the RTE glitterati. I feel my previous violation of social conformity in not owning a Licence was an adaptation to the structurally induced failure of the system to allow me to feel a sense of ownership towards or democratic contribution to the state media organ.”* (P20 eportfolio entry 3)



TV Licence (P20 eportfolio entry 3)

This example indicates the increased understanding of sociological theory afforded through the application of life examples, is an effective strategy for the development of sociological imagination.

Many participants described the development of their sociological imaginations over the course of the module. How they began to observe and take note of sociological theory all around them, in work, in the media, in everyday social interactions, in the health system. These were frequently documented in their eportfolios. The ability to apply social theory to their lives, made the subject more interesting, engaging and tangible for participants, and enhanced their understanding of the module content.

“This has been the greatest of all learning for me, and I have discovered that we are all in fact products of a learned value system, in which we have been taught to think what we believe as opposed to thinking freely. We are raised with others beliefs and values systems, and while this is not a bad thing, it can prevent us from developing an individual understanding of the world and the society that we live in. I feel I have now developed my Sociological Imagination and that I fully understand what this means now.” (P11, eportfolio entry 5)

Participants valued the awareness and insight they felt they had gained through their study of sociology. They began develop a discipline identity, seeing themselves as sociologists.

I: And do you feel like you’ve changed or developed as a learner?

P10: Yeah I have, even in that small way of changing techniques, I think it does because I’d notice sociology in life being more obvious now but I

wouldn't necessarily reflect that I'm doing that, as aware. So this is kind of making me aware oh I'm actually almost becoming a mini sociologist just doing this. (P10, interview 1)

The development of discipline identity, evident in the extract above, is indicative of the experience of being inducted into the disciplinary culture, which occurs during undergraduate higher education.

9.5 DISCUSSION OF T5: THE SOCIOLOGY DISCIPLINE CONTEXT

In this section, the findings of *T5: the sociology discipline context* are examined in relation to the research question and the existing literature. The research question was addressed by the findings presented in T4 above. However, the fundamental role of the discipline context of sociology to the development of critical thinking skills within the context of eportfolio learning was more significant than expected. This led to the fifth finding of the study that the sociology discipline context was fundamental to meaningful learning with an eportfolio for online distance learners. Learning with an eportfolio supported the development in participants of discipline specific critical sociological thinking.

Finding 5: The sociology discipline context was fundamental to meaningful learning with an eportfolio for online distance learners. Learning with an eportfolio supported the development in participants of discipline specific critical sociological thinking.

The data revealed that the discipline context of sociology and more specifically the module context of Soc3a: Power, Social Order, Crime, Deviance, Work & Employment, framed the learning experience for the participants in the study. The sociological concepts, content, theory and assignments that participants learned

throughout the module was the material that stimulated consideration and reflection in their eportfolios. Therefore, the sociology discipline context was fundamental to meaningful learning with an eportfolio. There are very few empirical studies which have investigated the relationship between the subject discipline and how the discipline shaped student learning with an eportfolio, and none that examine this within the discipline context of sociology. However, this finding is broadly in line with Turns et. al. (2012) study which examined eportfolio based learning in the context of engineering education. This found that eportfolio in specific disciplines align with the characteristics of discipline, the student population and nature of knowledge within the discipline. In the absence of studies relating to sociology and eportfolio based learning, three studies which investigated portfolio assessment in sociology are discussed. The finding with regard to the importance of the discipline context to framing the learning experience, is broadly in line with research carried out by Johnson et. al. (2013) and Clarke & Hornyak (2012). This study found that the eportfolio documented participants' reported increased understanding of sociological theory, afforded through application to real life examples. This is consistent with Johnson et. al. (2013) study which found that the portfolio assessment was associated with increased sociological thinking.

9.5.1 Discussion of T5: sub-theme 1: Applying sociological theory to everyday life

The data indicates that learning with an eportfolio supported the development in some participants of discipline specific critical sociological thinking. This finding is broadly in line with theories of Bailin (1999), McPeck (1990) and Willingham (2007) that critical thinking skills are best taught and learned within a discipline context. Further, this finding is consistent with empirical studies carried out by Niu et. al. (2013) and Tiruneh et. al. (2016) which found that the development of critical thinking skills was subject specific.

In this study, critical thinking development was closely linked with the application of sociological theory to real life, and the growth in sociological imagination. This finding is in keeping with Grauerholz & Bouma-Holtrop (2003) theory that critical thinking within sociology requires sociological knowledge, and awareness, and employs the sociological imagination. It is also in line with Abrami et al. (2015) findings that exposure to authentic problems was an effective strategy for developing critical thinking skills.

Studies conducted by Jones (2009a, 2009b, 2007) found that critical thinking was highly context dependent, and was shaped by disciplinary culture and epistemology, in which it is taught and learned. Therefore, in the context of the discipline culture of sociology where Mill's (1959) idea of the sociological imagination is a fundamental disciplinary framework. The conceptions of sociological imagination, and critical thinking, are interlinked. In addition, many of the participant narratives, documented in their eportfolios meet many of the criteria for critical sociological thinking as defined by Grauerholz & Bouma-Holtrop (2003). For example, the criteria for critical sociological thinking such as the use of examples, application of theory, demonstrates sociological imagination, bias, reasoning, presenting two sides of an issue.

Finally, in this study, learning with an eportfolio in combination with studying sociology, facilitated the development of discipline identity among some participants. Some students began to see themselves as sociologists. This is consistent with research carried out by Johnson et. al. (2013) with regard to portfolio assessment and undergraduate sociology students.

9.5.2 Summary of Discussion of T5: The sociology discipline context

This section has discussed the findings of T5: thinking critically in my eportfolio in relation to the research question and the existing literature, it has introduced the fifth finding of the present study:

- *Finding 5: The sociology discipline context was fundamental to meaningful learning with an eportfolio for online distance learners. Learning with an eportfolio supported the development in participants of discipline specific critical sociological thinking.*

This has been shown above to be broadly consistent with previous research. With the exception of these original elements: firstly, the importance of discipline context in relation to the development of critical thinking while learning with an eportfolio, and secondly that learning with an eportfolio can support the development of discipline specific critical thinking.

9.6 CONCLUSIONS

In this chapter the findings and discussion of T4: *Developing critical thinking in my eportfolio*, T5: *The sociology discipline context* were discussed. In addition, three further findings of the present study were presented and critiqued in relation to the research question:

- *Finding 3: Studying sociology combined with learning with an eportfolio supported the development of critical thinking skills and dispositions in online distance learners.*

- *Finding 4: Learning with an eportfolio supported the development of the critical thinking skill of self-regulation in online distance learners.*
- *Finding 5: The sociology discipline context was fundamental to meaningful learning with an eportfolio for online distance learners. Learning with an eportfolio supported the development in participants of discipline specific critical sociological thinking.*

This chapter has presented three original findings. Firstly, the importance of discipline context in relation to the development of critical thinking and learning with an eportfolio. The discipline context of sociology and more specifically the module context framed the learning experience for online distance students. These findings support the emphasis on the development of critical thinking skills grounded in discipline context, which are key elements of the critical folio thinking theoretical framework for this study. Secondly, that learning with an eportfolio can support the development of discipline specific critical thinking. As there is a dearth of research in this area, this study makes an original contribution in demonstrating that learning portfolio practice supported the development of critical thinking skills within a discipline context for online distance students. Finally, that within the context of a discipline, learning with an eportfolio can promote the development of the critical thinking skills of analysis, and inference, and the dispositions of truth seeking and open mindedness.

10 CHAPTER TEN CONCLUSION OF FINDINGS AND DISCUSSION

The previous three chapters have presented the findings of the study and critiqued them in relation to the literature and the research questions of the study. This short chapter concludes the findings and discussion chapters by providing a summary of the key findings and original contributions made by this study.

This study has contributed five findings:

- Finding 1: learning with an eportfolio enhanced the learning experience for online distance learners by providing them with a safe and personal space to experiment with new ideas, to evaluate their own learning and to process their thoughts and experiences in the context of the sociology module. The experience was both retrospective and future focused.
- Finding 2: Learning with an eportfolio enabled online distance learners to document their lived experiences and learning approaches in an authentic and meaningful way.
- Finding 3: Studying sociology combined with learning with an eportfolio supported the development of critical thinking skills and dispositions in online distance learners.
- Finding 4: Learning with an eportfolio supported the development of the critical thinking skill of self-regulation in online distance learners.
- Finding 5: The sociology discipline context was fundamental to meaningful learning with an eportfolio for online distance learners. Learning with an

eportfolio supported the development in participants of discipline specific critical sociological thinking.

In addition, this study contributes a six original findings which are:

1. The personal aspect of learning with an eportfolio, the idea of the eportfolio as a personal space for students to try out new ideas, to act as a sounding board, a space for enabling student learning, their place to experiment.
2. The temporal aspect of learning with an eportfolio had significant impact on the student learning experience. The retrospective act of reflecting back on their learning was beneficial for assessing progress, revising sociological content and the future focused element encouraged students to plan for study.
3. Learning with an eportfolio enabled online distance learners to document their lived experiences and learning approaches.
4. The importance of discipline context in relation to the development of critical thinking and learning with an eportfolio.
5. Learning with an eportfolio can support the development of discipline specific critical thinking.
6. Within the context of a discipline, learning with an eportfolio can promote the development of the critical thinking skills of analysis, and inference, and the dispositions of truth seeking and open mindedness.

11 CHAPTER ELEVEN CONCLUSION

11.1 INTRODUCTION

This doctoral study explored the nature of the experience of learning with an eportfolio, and whether it enhanced the development of critical thinking among online distance learners. The study adopted a case study approach, following twenty-four online distance learners studying an intermediate sociology module as part of the BA (Hons) Humanities/ BA (Hons) Humanities (Psychology Major) at Open Education, DCU, over the course of one academic year. The study focused on the case of the learner experience of eportfolio based learning and the process of developing critical thinking.

Data were generated using the participant eportfolio entries and two-time semi structured interviews. The participants were interviewed with their eportfolios. The written, visual and physical artefacts from the participant's eportfolios were used as stimulus during the interviews. The analytical approach for the study was thematic analysis, a data led approach following the Braun & Clarke (2006) six phases of thematic analysis. Five themes emerged from the data; being an online distance learner, the experience of learning with an eportfolio, my approach to learning, thinking critically in my eportfolio, the sociology discipline context.

Detailed analysis of the themes was conducted in relation to the research questions and existing literature, which resulted in the five findings of the study. These findings are revisited in relation to the research questions in the next section.

11.2 REVISITING THE RESEARCH QUESTION

This section revisits the research questions posed by this study at the outset and proposes some answers to these questions in the form of conclusions.

- Can eportfolios enhance the nature of the learning experience and the development of critical thinking among online distance learners?

The research question as two interlinked parts:

- Part 1: Can eportfolios enhance the nature of the learning experience among online distance learners?
- Part 2: Can eportfolios enhance the development of critical thinking among online distance learners?

11.3 CAN EPORTFOLIOS ENHANCE THE NATURE OF THE LEARNING EXPERIENCE AMONG ONLINE DISTANCE LEARNERS?

The nature of the learning experience for online distance learners was enhanced by learning with an eportfolio in a number of ways. The eportfolio was a personal, real and authentic space for learners to reflect, and process their thoughts and experiences, in the context of a sociology module. Learners developed self-awareness by evaluating their own learning through writing reflectively and providing evidence in their eportfolio entries. The temporal aspect of looking back at their eportfolio entries, and being able to see the evidence of their learning and how it had evolved over the year, made their development more obvious for these learners.

Learning with an eportfolio enabled learners to document their experiences of being an online distance learner, studying on the Humanities programmes, and more specifically what it is like to be a learner in the sociology module Soc3a.

Eportfolio based learning enabled them to evidence, describe and document their learning experiences in these contexts. The eportfolio provided the learners with a personal space to bring together their multiple identities as student, parent,

worker, into one holistic self. The eportfolio entries documented the lived experiences and learning approaches of online distance learners; their highly personal approaches to learning, study techniques, when, where and how they learned, their peer communities, motivations, interactions, confidence and challenges. Due to the self-directed nature of online distance learning, the participants own approaches to managing their learning was crucial to their academic success.

For a small minority of the cohort of online distance learners, learning with an eportfolio did not enhance their learning experiences but rather they considered the eportfolio to be stressful, repetitive and not an academic task. For the wider cohort, there were two negative elements to learning with an eportfolio, that it was time consuming and that reflection was challenging.

Although this study is based on a small sample of participants, the findings suggest that learning with an eportfolio can enhance the nature of the learning experience. By providing learners with a personal space to evaluate their own learning, to process their thoughts and experiences, and to document their lives and learning in an authentic and meaningful way.

11.4 CAN EPORTFOLIOS ENHANCE THE DEVELOPMENT OF CRITICAL THINKING AMONG ONLINE DISTANCE LEARNERS?

Learning with an eportfolio enhanced the development of critical thinking for online distance learners in a number of ways. Most online distance learners perceived that that their critical thinking had changed, developed and improved over the course of the study. These were described as changes in outlook or thinking, improved

analytical approaches, a greater appreciation for source quality, and an increased understanding of different perspectives. Finally, the most strongly articulated change in critical thinking was increased self-awareness about their own thinking. However, the fundamental role of the discipline context of sociology to the development of critical thinking skills within the context of eportfolio learning was more significant than expected. Within the context of the discipline of sociology learning with an eportfolio aided the development of a critical mind-set, and the critical thinking skills of analysis and inference, and the dispositions of truth seeking and open mindedness.

Through self-examination in their eportfolio entries, learners became more open-minded and developed an awareness of their own personal biases, and how bias influenced their thinking and development of arguments. Further, learning with an eportfolio supported the development of the critical thinking skill of self-regulation in online distance learners through the process of self-examination, and self-correction, in their eportfolio entries. This means that the eportfolio prompted learners to self-examine and self-correct issues, identified through the process of reflecting on their learning. For some learners the retrospective aspect of looking back at eportfolio entries, facilitated self-regulation by capturing their development over time.

The discipline context of sociology and more specifically the module context of Soc3a: Power, Social Order, Crime, Deviance, Work & Employment framed the learning experience for online distance learners. The sociological concepts, content, theory and assignments that they were learning throughout the module was the material that stimulated consideration and reflection in their eportfolio. Therefore, the sociology discipline context was fundamental to meaningful learning with an

eportfolio. The eportfolio documented learners improved understanding of sociological theory through their application of theory to real life examples.

Learning with an eportfolio supported the development in some learners of discipline specific critical sociological thinking. In this study, critical thinking development was closely linked with the application of sociological theory to real life, and the growth in sociological imagination. Therefore, in the context of the discipline culture of sociology where Mill's (1959) idea of the sociological imagination is a fundamental disciplinary framework, the conceptions of sociological imagination and critical thinking are interlinked. Finally, in this study, learning with an eportfolio in combination with studying sociology, facilitated the development of discipline identity among some learners, who began to see themselves as sociologists.

Although this current study is based on a small sample of participants, the findings suggest that learning with an eportfolio can enhance the development of critical thinking skills and dispositions within the disciplinary context.

11.5 CONTRIBUTION

This thesis makes a significant contribution to the body of knowledge on the development of critical thinking skills, the nature of eportfolio based learning and the learning journeys of online distance students. This study's original contributions are made on a number of fronts; empirical evidence, theoretical, methodological, contextual and practice.

The case study findings demonstrated that learning with an eportfolio, supported the development of critical thinking skills and dispositions within the discipline context for online distance learners. Further, the study showed that the eportfolio

was more than a technological tool for online distance students, that it was a deeply personal space where students experimented with new ideas and approaches. In addition, this case study demonstrated the significance of the temporal aspect of learning with an eportfolio. The retrospective act of reflecting back on their learning and the future focused planning, had a positive impact on the student learning experience. Finally, learning with an eportfolio enabled online distance learners to document their lived experiences and learning approaches, which gave a unique picture of what it is like to be an online distance student.

The theoretical model for learning portfolio practice developed by this study contributes new theorising on developmental/process eportfolios and the relationship to critical thinking skill development and disciplinary context. The existing theoretical models had not considered the role of discipline or the relationship between eportfolio based learning and critical thinking.

This study has taken a new methodological approach to data generation, using the participant eportfolio entries and two-time semi structured interviews. Although previous studies (Ayan & Seferoglu, 2011; Chau & Cheng, 2010) have used this approach to data generation, no previous study has used participants eportfolio as stimulus during interviews.

There are a number of original contexts in which this study contributes to the body of knowledge. In Ireland, to date only five journal articles related to eportfolio have been published and none related to online distance learners. Worldwide, there are no previous empirical studies which have examined the relationship between critical thinking skills development, and eportfolio based learning. Also there are no previous studies on eportfolio in the discipline of sociology, and very few which

examined the role of discipline in eportfolio based learning. Very little is known about the experiences of online distance learners in Ireland, with only one previous study conducted.

This study makes a number of recommendations for practice which to date have not been considered as important for implementing effective eportfolio practice, which supports student learning and develops critical thinking.

11.6 RECOMMENDATIONS

A number of recommendations for online distance practice, higher education practice, eportfolio researchers and future research originate from this doctoral study and are detailed below.

11.6.1 Recommendations for online distance learning practice

The evidence from this study suggests that it would be beneficial to the student learning experience to include developmental learning portfolios in online distance degree programmes. As the nature of the learning experience for online distance students was enhanced by reflecting on their personal approaches to learning in their eportfolio, giving a unique window into their learning approaches. Further, the findings of this study indicate that practice enhanced online distance students' learning experiences by facilitating them to develop self-awareness through the evaluation of their approaches to learning articulated through the medium of reflective writing.

Online distance learning practitioners should consider the use of eportfolio to support introverted students. As the evidence from this study indicates that eportfolio might be a better assessment alternative for introverted learners who

don't like required formal discussion forums or overwhelming informal What's app groups.

11.6.2 Recommendations for higher education practice

The findings of this study indicate the learning portfolios should be located within a discipline context to encourage critical thinking development. Overall this study strengthens the idea of student ownership of their eportfolios, which enables personalisation. The evidence from this study indicates that the design of learning portfolio activities which prompt learners to look back and reflect on previous entries can enhance the learning experience. Finally, the findings of this study suggests that the design of learning portfolios which use of critical question prompts may stimulate the development of critical thinking skills.

Eportfolios are becoming more prevalent in Irish higher education, therefore, universities must focus on the pedagogy and the learning opportunities that a well-designed eportfolio can enable. Institutional initiatives should be underpinned by explicit and robust government policy. Academic staff must be supported in their professional development in relation to eportfolio use. Finally, funding for empirical research on eportfolio has to be provided along with the need to develop and facilitate greater understanding of eportfolio purposes and pedagogy sector wide.

11.6.3 Recommendations for eportfolio researchers

This study has found that through an analysis of the eportfolio literature the need to re-examine and redefine the purpose and definition of eportfolio that shifts from a technocentric conception toward a pedagogical, student centred and learner orientated definition of eportfolio and calls on eportfolio researchers to actively engage with the development of learning oriented definitions and a clear eportfolio typology of purpose.

Eportfolio researchers can adopt the innovative data generation design approach crafted by this study, which used eportfolio critical thinking prompts and participant generated eportfolio entries as data and stimulus for semi-structured interviews. This approach demonstrated that eportfolio could be used as a data generation instrument but also a way to enhance interviews and enrich qualitative narrative analysis

11.6.4 Recommendations for future research

A key area of future research that would build upon this study would investigate the relationship between discipline context, eportfolio based learning and the development of disciplinary critical thinking in different academic disciplines. Several questions remain unanswered: In a different discipline, does learning with an eportfolio impact on the development of discipline specific critical thinking? How are disciplinary identity and conceptions of knowledge impacted by eportfolio based learning?

The evidence from this study indicates that there is a relationship between the temporal aspect of eportfolio based learning and self-regulation. Building upon this study, a further study could explore the link between the temporal aspect of reflection and the development of self-regulation in students. A further area of future research is the development of identity and how its documented by eportfolio based learning. This would build on the evidence of this study which indicated that learning with an eportfolio enabled participants to bring together their multiple identities.

11.7 FINAL REFLECTION

As eportfolio based learning becomes more prevalent in Ireland, we must focus on the pedagogy and the learning opportunities that well designed eportfolio can enable. Eportfolio based learning can be a powerful medium for empowering meaningful and authentic learning for students.

“In this way, the learning portfolio differs in comparison to other modes of learning; in other words, I am not simply learning and regurgitating information, I am also learning about myself.” (P2, eportfolio entry 1)

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13 APPENDICES

13.1 APPENDIX 1. EPORTFOLIO DATA GENERATION INSTRUMENT

Eportfolio entry template Date: No.
Critically Reflect Write a piece (500 words) which critically reflects on your recent work in Soc3A. Use these guiding questions to structure your response: • What have you learned doing this module? {explain} • Describe your learning process throughout this module and discuss the skills you are still developing. {explain} • What challenges with the module have you faced so far? {analysis} • What does your work on the module illustrate about you as a learner of Sociology? {interpret} • How have you found the eportfolio process? {analysis}{interpret} • What is it like working with an eportfolio? {evaluate} • How does learning with an eportfolio compare to other modes of learning? {evaluate} • What implications will your eportfolio experience have on your future approach to learning? {inference}
Evidence Provide 3 pieces of evidence to support your reflection. Write a brief rationale (100 words) for their inclusion Evidence might include: • Photographs-relevant to the module • Diagrams/infographics • Audio/Video • A section of work
What next... What is the next step in your eportfolio?

13.2 APPENDIX 2. INTERVIEW SCHEDULE V.1

Demographics

Gender

Age

Previous education, prior to studying with Open Education

Part 1: General questions

1. Can you tell me the story of how you got here, how you came to be studying in DCU?
2. How is your module going?
 - a. What is the most interesting topic you have learned so far?
 - b. Has it been easy or difficult so far?
 - c. What stage are you at now in the module?
3. Can you tell me about your eportfolio? {RQ1, RQ4}
 - a. What have you written about?
 - b. What evidence have you included?
 - c. Has it been easy or difficult to do?
4. What is it like working with an eportfolio? {RQ4}
 - a. How does learning with an eportfolio compare to other modes of learning?
 - b. Do you feel like you have changed or developed as a learner?.How?
 - c. How have you found using the technology?
 - d. Have you enjoyed the experience?
5. Do you know what is meant by the term critical thinking? {RQ2, RQ3}
6. Do you think your critical thinking skills have improved?
 - a. Can you give me an example of a change in your critical thinking?
7. Have you gained a fuller understanding of the topics in the module? {RQ1, RQ2, RQ3}
 - a. What are you more careful about?
 - b. Are you more open-minded in your approach to learning?
 - c. What did you learn about your own thinking?
 - d. What are the strengths and weaknesses of the eportfolio approach?

e. What would you like to learn more about?

8. In terms of everything we've been talking about, do you have any final thoughts, anything you think might be missing from the discussion or anything like that?

Part 2: Guided tour/walk through of your eportfolio

Let's look at your eportfolio together {RQ1, RQ2, RQ4}

9. Tell me about the entries
10. What parts of the eportfolio are you most proud of?
11. What would you change or improve?

13.3 APPENDIX 3. INTERVIEW SCHEDULE V.2

1. How did your module go?
 - a. What was the most interesting topic you have learned?
 - b. Was it easy or difficult?

2. Can you tell me about your eportfolio? (eportfolio open as we talk)
 - a. What have you written about?
 - b. What evidence have you included?
 - c. Was it easy or difficult to do?
 - d. Which entry are you most proud of and why?
 - e. Were the critical questions helpful to shaping your entries?

3. What is it like working with an eportfolio? (eportfolio open as we talk)
 - a. How does learning with an eportfolio compare to other modes of learning?
 - b. Do you feel like you have changed or developed by your experience of using an eportfolio? How?
 - c. Did the eportfolio integrate your learning?
 - d. Did you ever look back over your eportfolio entries? If yes, was it useful? Did you notice any development?
 - f. Did using the eportfolio affect your comprehension of the module content?

4. Do you think your critical thinking skills have improved? And Why?
 - a. Did the eportfolio stimulate your critical thinking skills?
 - b. Can you give me an example of a change in your critical thinking?
 - c. What were you thinking and feeling while writing your eportfolio entries?

5. Have you gained a fuller understanding of the topics in the module?

- a. How important is having quality evidence and research to support your academic work for you?
 - b. Are you more open-minded in your approach to learning?
 - c. What did you learn about your own thinking?
 - d. What are the strengths and weaknesses of the eportfolio approach?
 - E. Do you feel more confident in your own reasoning skills?
 - D. Do you follow a systematic approach to solving problems?
6. In terms of everything we've been talking about, do you have any final thoughts, anything you think might be missing from the discussion or anything like that?

13.4 APPENDIX 4. PLAIN LANGUAGE STATEMENT

An exploration of the development of criticality and the nature of the learning with an eportfolio among flexible learners

**Researcher: Orna Farrell, Open Education, NIDL, DCU
orna.farrell@dcu.ie**

I am conducting research based in DCU as part of my Ph.D. at Trinity College Dublin's School of Education under the supervision of Dr. Aidan Seery.

This research project examines the nature of the learning experience of using an eportfolio and whether it enhances the development of criticality among flexible learners. It aims to interrogate the process of the development of criticality rather than the product.

Participation in this study involves engaging with eportfolio reflective entries and two interviews. Participants will complete five eportfolio entries over the course of one academic year at key points in your learning for Soc3A. The eportfolio entries will follow a prescribed structured template of critical questions intended to encourage reflection about your learning on Soc3A, include samples of your coursework and pieces evidence to support your reflection. Evidence might include:

- Photographs-relevant to the module
- Diagrams/infographics
- Raw data/statistics
- Audio/Video

Participation is completely voluntary and so you are not obliged to take part, you have the right to withdraw at any time. If you do take part and any of the questions do raise difficult feelings, you do not have to answer that question, and/or continue with the interview/eportfolio.

Participation is confidential. If, after the interview/eportfolio has been completed, you wish to have your interview/eportfolio removed from the study this can be accommodated up until the research study is published.

Participants' data will be collected stored processed in compliance with the 1988 and 2003 Data Protection Acts. It is intended to treat gathered data with strict confidentiality and raw data will only be available to Orna

Farrell and Dr. Aidan Seery. Pseudonyms will be used for participants when extracts from transcripts are used in the thesis, to ensure that the identities of the participants are adequately concealed. Data will be stored securely, computer files comprising of raw data and a case study database will be backed up and kept in a password protected computer to which only I have access in my locked office in DCU. Hard copies of raw data will be kept in a locked cabinet in my locked office in DCU to which only I have access. The data will be retained for five years and will then be destroyed. The hard copies of the data will be shredded by the researcher and the electronic files will be deleted by the researcher.

There are no anticipated risks for participants as the study is just exploring student experience of assessment.

To find out more about the project in the future, email orna.farrell@dcu.ie and request a written project update.

If participants have concerns about this study and wish to contact an independent person, please contact:

The Secretary, Dublin City University Research Ethics Committee, c/o Research and Innovation Support, Dublin City University, Dublin 9. Tel 01-7008000, e-mail rec@dcu.ie

13.5 APPENDIX 5. CONSENT FORM

An exploration of criticality, reflective learning and eportfolio among higher education learners

My name is Orna Farrell and I am conducting research based in DCU as part of my Ph.D. at TCD School of Education under the supervision of Dr. Aidan Seery which explores the criticality and eportfolio in higher education learning.

You are invited to take part in this study and participation involves engaging with eportfolio reflective entries and two interviews. You will complete five eportfolio entries over the course of one academic year at key points in your learning for Soc3A. The eportfolio entries will follow a prescribed structured template of critical questions intended to encourage reflection about your learning on Soc3A, include samples of your coursework and pieces evidence to support your reflection.

Evidence might include:

- Photographs-relevant to the module
- Diagrams/infographics
- Raw data/statistics
- Audio/Video

I am aware that my participation is completely voluntary and that I am not obliged to take part, I have the right to withdraw at any time. If I do take part and any of the questions do raise difficult feelings, I do not have to answer that question, and/or continue with the interview/eportfolio. My participation is confidential. If, after the interview has been completed, I wish to have your interview removed from the study this can be accommodated up until the research study is published. The eportfolio, interviews and all associated documentation will be securely stored and stored on a password protected computer.

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

Should you require any further information about the research, please contact Orna Farrell orna.farrell@dcu.ie

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: _____

13.6 APPENDIX 6 EPORTFOLIO DEFINITIONS

Eportfolio Definitions	Citation	Classification
"An eportfolio is a digital container capable of storing visual and auditory content including text, images, video and sound. Eportfolio may also be software tools not only because they organize content but also because they are designed to support a variety of pedagogical processes and assessment purposes."	Abrami & Barrett, 2005	Learning oriented & Techno-centric
An eportfolio "refers to an electronically stored collection (or archive) of a student's experiences, achievements and artefacts, together with their reflections on learning."	Australian Eportfolio Project 2009	Student centred
"A Netfolio is configured through a set of eportfolio produced by different students who at a given time and through online communication, provide the other students with new content and different perspectives. This collaborative approach in the form of a network offers students the ability to compare eportfolio as another stage in the construction of their own personal eportfolio. "	Barbera, 2009	Collaboration focused
"An electronic portfolio uses technologies as the container, allowing students or teachers to collect and organize portfolio artefacts in many media types (audio, video, graphics, text). Hypertext links organize the material, connecting evidence to appropriate outcomes, goals, or standard."	Barrett, 2007	Techno-centric
"Essentially an electronic version of a paper based portfolio created in a computer environment, and incorporating not just text but graphic, audio and video material as well."	Butler, 2006	Techno-centric
"As in the discourses of employability and the learning organization, the network individual focuses on making rational choices that lead to the accumulation of links that make them more valuable. This is the first kind of self that is important to consider for integrative learning through portfolios, the Network Self, the self of making connections" "E-portfolios have a clear affinity with this way of expressing identity. From the beginning, portfolios have been about combining and recontextualizing diverse kinds of documents. The ability to create hyperlinks, both internal and external, is one of the most readily identifiable advantages of the digital medium. Many systems designed specifically to facilitate electronic portfolios include spaces for interaction that allow for collaborative connection-making, and social networking capabilities are increasingly finding a place in e-portfolio software and practice." "Capitalizing on these capabilities, e-portfolios can be used to promote employability and lifelong learning. However, they fall short of what distinguishes	Cambridge, 2008	Student centred

portfolio composition from other kinds of technologically-mediated self-representation. Portfolios distinguish themselves through another dimension of integration that produces another kind of self. It is in this second face of integrative learning and e-portfolios that we can see how portfolios might serve as more than a means to enhance employability that puts the ideology of individualized, reflexive identity into action. The portfolio is a highly individually-focused genre and is unlikely to be helpful in reversing the trend towards individualization. However, it can offer an alternative version of individualism that better accounts for the complexity of meaning and satisfaction in people's lives."		
"Broadly, the product (e-portfolio) is a purposeful selection of items (evidence) chosen at a point in time from a repository or archive, with a particular audience in mind. The processes that are required to create e-portfolios – for any purpose – include capturing and ongoing storage of material, selection, reflection and presentation."	Hartnell-Young, 2007	Techno-centric
"A repository, a means of representing oneself and ones skills, qualities and achievements, a guidance tool, a means of sharing and collaborating and a means of encouraging a sense of personal identity"	Centre for Recording Achievement, 2008	Student centred
"Defines an eportfolio using five criteria: 1. Selective and structured collections of information 2. Gathered for specific purposes and showing evidence 3. Stored digitally and managed by appropriate software 4. developed by using appropriate multimedia and customarily within a web environment 5. retrieved from a website or delivered using a CD-Rom or DVD."	Challis, 2005	Techno-centric
"The value of eportfolio lies not in the specific tool itself but in the processes and in the ways in which the concept and the related activities and practices are introduced to the students"	Chen & Penny Light, 2010	Learning oriented
"Portfolio elements, we frame their functions with the following six elements: (1) The repository: A collection of all artefacts of a student's work, including all academic assignments and materials, including those related to fieldwork/clinical supervision, etc.; any relevant material about extracurricular activities and, progressively, items generated from other programme activities. It is not assessed (although items within it may have been) and remains private to the student. (2) Portfolio tasks: A structured continuous task or sets of tasks that regularly engages the student in some educational work, perhaps each week, through their entire programme. This 'portfolio entry' might consist of an ongoing reflective journal piece relating broadly to an educational experience of significance to the student, a blog, a feedback task or a reflection	Clarke & Boud, 2016	Assessment focused

on an item of coursework. In our work, the weekly portfolio task is to write half a page of self-assessment on any piece of submitted work from the previous four weeks to build their capacity to judge their work over time. (3) Coursework: All students' coursework tasks contribute to the portfolio repository. They can then use any repository items (or combine new materials and repository items) to curate a collection supporting the particular learning outcomes for the course or course unit. (4) Competencies: Students add proof of competence in various attributes to the repository as they are attained. They can then draw from it, progressively over the programme, to curate collections evidencing development in both their professional competencies as well as their learning skills. At interim levels, they can be formatively assessed and aspects of the collection opened up for feedback. After working with the feedback and considered complete, these can serve as records of achievement. (5) Feedback: An ongoing collection where feedback comments from all assessment tasks, whether graded or not, can be easily accessed and built up over time, and where giving, receiving and working with feedback from teachers, peers and others is required, valued, evidenced and included at some point(s) in the assessments. (6) Curated collections of evidence: Students draw relevant evidence from the repository"		
"A system that belongs to the learner, not the institution, populated by the learner not their examiner; primarily concerned with supporting learning not assessment; for life-long and life-wide learning not a single episode or a single course; that allows learners to present multiple stories of learning rather than just a simple aggregation of competencies; and importantly, where access to them is controlled by the learner who is able to invite feedback to support personal growth and understanding."	Duncan-Pitt& Sutherland, 2006	Learning oriented & student centred
"eportfolio are student-owned dynamic digital workspaces wherein students can capture their learning and their ideas, access their collections of work, reflect on their learning, share it, set goals, seek feedback and showcase their learning achievements."	EUFOLIO, 2015	Learning oriented
"Student eportfolio are web-based student generated collections of learning artifacts and related reflections, focused on learning and growth."	Eynon & Gambino, 2017	Learning oriented
"Eportfolio are a set of materials selected by us to help in the presentation of ourselves to others in a way we choose. An eportfolio then is a product and this implies process and practice, in other words, what is done in the course of, and leading up to producing these eportfolio for presentation."	Grant, 2009	

"It can be helpful to think about eportfolio in terms of when the work is organized relative to when the work is created. This results in three types of eportfolio: The showcase ePortfolio: organization occurs after the work has been created. The structured ePortfolio: a predefined organization exists for work that is yet to be created. The learning ePortfolio: organization of the work evolves as the work is created. Whereas a showcase ePortfolio is used to organize and present accomplishments and a structured ePortfolio can ensure that specified work will be done, the organization of a learning ePortfolio is dynamic. The organization of work evolves over time as tasks are identified, worked on, and completed in response to the author's changing interests, requirements, and understanding. The ePortfolio author can reach back in time across official and unofficial projects to make new connections. This ongoing reorganization of work can be well-thought-out and clear, or it can be spontaneous and messy."	Greenberg, 2004	Product focused & learning oriented
"Eportfolio can draw together the different elements of professional competencies and lifelong learning, with the ultimate goal of developing an engaged and productive workforce that can support innovation and productivity to ensure ongoing national economic development and growth."	Hallam & Creagh, 2010	Product focused
"An online collection of student work that will ultimately be evaluated by an audience of some kind- either the student authors themselves, peer readers, teachers, parents, administrators, evaluation experts or mixed audiences representing more than one of these groups. "	Hawisher and Selfe, 1997	Assessment focused
"The ePortfolio as a personal, lifelong content-management system for collecting, reflecting on, selecting, and presenting learning outcomes and other professional accomplishments."	Jafari, 2004	Learning oriented & student centred
"An e-portfolio is the product, created by the learner, a collection of digital artefacts articulating experiences, achievements and learning. Behind any product, or presentation, lie rich and complex processes of planning, synthesising, sharing, discussing, reflecting, giving, receiving and responding to feedback."	JISC, 2008	Techno-centric
"e-portfolios refer to artefacts in the form of textual and/or multimedia files that are documented in an online system to demonstrate student learning outcomes in academic course."	Klenowski, Askew, Carnell, 2006	Assessment focused
"A portfolio is a purposeful collection of artefacts to demonstrate effort, progress and achievement. Within an educational setting a portfolio can be prepared in the context of a course, a program, or an institution, the author of the portfolio can be a student, a faculty member, an administrator, or an organisation; and the purpose of the portfolio may be	Knott et al., 2005	Learning oriented

developmental, evaluative, and/or representative. With the ever increasing use and advancement of technology, the electronic portfolio is emerging as a viable option to the traditional paper portfolio."		
"Eportfolio are a process of reflecting on the growth of one's knowledge and capabilities over time with an emphasis on ...providing structured time and space for learners to consider and document the process of their learning not just the product."	Light, Chen & Ittleson, 2012	Learning oriented
"A virtual space containing a collection of digital products, artefacts and reflections to demonstrate competencies in a field of knowledge to a teacher, a colleague, a professional or community."	Lopez-Fernandez & Rodriguez-Lllera, 2009	Assessment focused
"An e-portfolio is a digitized collection of artefacts including demonstrations, resources, and accomplishments that represent an individual, group, or institution." And/or "personalized, web-based collections of work, responses to work, and reflections that are used to demonstrate key skills and accomplishments for a variety of contexts and time periods"	Lorenzo & Ittelson 2005 Educause	Techno-centric
"An electronic portfolio is a digital collection of authentic and diverse evidence, drawn from a larger archive, that represents what a person has learned over time, on which the person has reflected, designed for presentation to one or more audiences for a particular rhetorical purpose."	National Learning Infrastructure-USA, 2003	Techno-centric
"with a digital portfolio it is easy to rearrange, edit and combine materials, the learner's work can be edited and collated to suit different needs and audiences using a variety of appearances and layouts of the same content. Eportfolio are connected documents, various media and document types can be linked together, increasing the range of associations between different subject areas, learning experiences and artefacts. Finally eportfolio are portable."	Stefani, Mason, & Pegler, 2008	Student centred
"The primary motive of a learning portfolio as being "to improve student learning by providing a structure for students to reflect systematically over time on the learning process and to develop the aptitudes, skills and habits that come from critical reflection"	Zubizarreta 2004	Learning oriented
"The learning portfolio provides a vehicle for bringing together judiciously selected samples of students' work and achievements inside and outside the classroom for authentic assessment over time. "The learning portfolio, then, becomes more than a product, a simple repository of artefacts; it becomes a process of reflection, of organizing, prioritizing, analysing, and communicating one's work and its value, which may prompt insights and goals"	Zubizarreta 2012	Learning oriented

13.7 APPENDIX 7 EPORTFOLIO RESEARCH DATABASE

Reference	Type	Definition	Purpose	Method	Findings
Abrami, P.C, Barrett, H., (2005) Directions for Research and Development on Electronic Portfolios. Canadian Journal of Learning and Technology , 31(3).	journal article	Own- Abrami & Barrett 2005	Explore research & development issue of eportfolio. Self-regulated learning	Theory	pedagogical value of using ep as a learning tool, portfolios are in their nature, since a portfolio represents a certain period of growth in a student's growth and learning. The process of reflection is what makes portfolios a tool for lifelong learning and professional development
Alexiou, A., Paraskeva, F., (2010) Enhancing self-regulated learning skills through the implementation of an eportfolio tool. Procedia Social and Behavioral Sciences, 2, 3048-3054.	journal article	Abrami & Barrett 2005, Sutherland & Powell 2007	Support self-regulated learning, empower students to enhance knowledge, academic skills	Experiment, pre-questionnaire, self-assessment, mixed methods analysis	higher levels of motivation, affective factors in self-regulation
Ambrose, A.G. (2014) Campus Conversations: Alex Ambrose. AAEEBL Learner Review, Fall.	non peer reviewed journal article-interview		badges and eportfolio	Description of practice	
Ambrose, A.G. & Chen, H. (2015) 360 Folio Networking : Enhancing	journal article	Barrett 2007	Advising	theoretical	360 folio networking framework

Advising Interactions and Expanding Mentoring Opportunities with Eportfolio. Theory into Practice, 54(4), 317-325.					
Ambrose, G.A., Ambrose, L.W., (2013) The Blended Advising Model: Transforming Advising with Eportfolio. International Journal of Eportfolio, 3(1), 75-89.	journal article	Barrett 2007	advising	theoretical	Blended advising model
An, H., Wilder, H., (2010) A Bottom-Up Approach for Implementing Electronic Portfolios in a Teacher Education Programme. Journal of Computing in Teacher Education, 26(3), 84-91.	journal article		student teacher perspectives		Students perceived the ep to be beneficial for development of CT and creativity and showcasing work. Technical challenges and amount time needed- challenges outweighed the benefits
Anderson, J., Austin, R. (2015) Eportfolio: A review of Policy and Developments in Northern	Book chapter in edited collection	Lorenzo and Ittleson, Becta	Policy in Northern Ireland- Te-PNI project	mixed methods	Eportfolio was positively viewed by students, three themes emerged, action planning, formative and career entry profiling

Ireland. In D.Butler, K.Marshall & M. Leahy. (Eds). Shaping the Future: How Technology Can Lead to Educational Transformation. (pp.92-117). Dublin: Liffey Press.					
Arend, C., Strydom, S., (2017) Eportfolio as Reflection Tool during Teaching Practice: The Interplay between Contextual and Dispositional Variables. South African Journal of Education, 37(1), 1-10.	journal article		teaching practice		South Africa, teacher training, school placement, professional accreditation requirement, case study which investigate use of eportfolio as reflective tools during teaching practice. Eportfolio were generally viewed as valuable in terms of professional development, in particular the value of peer support within an online community, learned from one and other-gained insight into other contexts by reading about peers experiences in other schools reduced sense of isolation,
Ayan,D., Seferoglu, G., (2011) Using Electronic Portfolios to Promote Reflective Thinking in Language Teacher Education.	journal article	Hartnell-Young & Morris 2007	Using ep to foster preservice teacher reflective thinking	Case Study- Qualitative-eportfolio data and interviews	Findings show eportfolio gave participants a sense of ownership, fostered reflective thinking, supported collaboration and allowed them to make connections between theory and practice

Educational Studies, 37(5), 513-521.					
Bahreini, M., Moattari, M., Shahamat, S., Dobaradaran, S., Ravanipour, M., (2013) Improvement of Iranian Nurses' Competence Through Professional Portfolio: A Quasi-Experimental Study. Nursing & Health Sciences, 15, 51-57.	journal article		To determine the effect of a portfolio based professional development program on nurses competencies- paper based	Quasi experimental	The study shows that the professional portfolio is an effective tool for improving nurses' competences. The professional portfolio helped nurses update their knowledge, skills and competencies.
Baird, K., Gamble, J., Sidebotham, M., (2016) Assessment of the Quality and Applicability of an Eportfolio Capstone Assessment Item with a Bachelor of Midwifery Program. Nurse Education in Practice, 20, 11-16.	journal article		Assessment . design and introduction of a capstone eportfolio assessment into the final year of a BMid degree at an Australian University, use of capstone to integrate knowledge, theory and practice.	Quantitative	Findings were that the quality of eportfolio assessment was highly valued by the academics on the programme in terms of acceptability, educational impact, cost and efficiency, authenticity, transparency, cognitive complexity, meaningfulness, generalizability.
Barbera, E. (2009) Mutual Feedback in e-portfolio assessment : An Approach	journal article	Own netfolio	peer collaboration	exploratory, quantitative	Using netfolio leads to more revisions both by the students, of their work, and amongst students and this in turn leads to better final results.

to the Netfolio System. British Journal of Educational Technology , 40 (2), 342-357.					
Beckers, J., Dolmans, D., Van Merriënboer, J., (2016) Eportfolio enhancing Students' Self-Directed Learning: A Systematic Review of Influencing Factors. Australasian Journal of Educational Technology , 32(2).	journal article	Smith & Tillema 2003	Self-directed learning, goal directed self-controlled learning behaviour	Literature-systematic review	A portfolio success greatly depends on the level of integration into the educational routine, portfolios should not exist parallel to the curriculum but rather integrated into them. Process orientated portfolios over learning product portfolios to facilitate student development of self-directed learning skills. Motivation is important, lack of motivation is an issue when it comes to using eportfolio to facilitate SDL skill development
Belcher, R., Jones, A., Smith, L., Vincent, T., Naidu, S., Montgomery, I.H., Gill, D. (2014) Qualitative Study of the Impact of an Authentic Electronic Portfolio in Undergraduate Medical Education. BMC Medical Education, 14, 1-7.	journal article		To evaluate the impact of an authentic Ep in two undergrad medical schools	Qualitative-questionnaire, focus groups-thematic analysis	Five major themes-purpose use and acceptability, advantages of using Ep, barriers to the use of Ep, impact on learning, professional identity. Students struggled to understand the purpose of Ep. Ep helped develop professional identity. Supervisor engagement was key to student ease of use. change from paper to electronic not a simple transition.
Bennett, D., Rowley, J., Dunbar-	journal article		identity creation	qualitative, grounded theory	students use of ep transitions from archive to self-

Hall, P., Hitchcock, M., Blom, D., (2016) Electronic Portfolios and Learner Identity: An Eportfolio Case Study in Music and Writing. Journal of Further and Higher Education, 40(1), 107-124.					portrait, ep emerged as medium through which identity is negotiated and constructed, prompted future orientated thinking
Birks, M., Hartin, P., Woods, C., Emmanuel, E., Hitchins, M., (2016) Students' Perceptions of the use of Eportfolio in Nursing and Midwifery Education. Nurse Education in Practice, 18, 46-51.	journal article		nursing student perspectives	quantitative	students found ep frustrating, in particular the technology and logistical aspects. Found useful as repositories for documents, reflections and learning experiences
Bokser, J.A., Brown, S., Chaden, C., Moore, M., Cleary, M.N., Seifert, E., Zecker, L., Wozniak, K. (2016) Finding Common Ground: Identifying and Eliciting Metacognition in Eportfolio	journal article	Yancey 2009, Chen 2009	To identify evidence of metacognition across eportfolio in three distinct populations : traditional undergrads , graduate education, adults returning to undergrad	Qualitative-eportfolio data	Identified four metacognition markers across student eportfolio, which could be used to design assessment which encourages metacognition

Across Contexts. International Journal of Eportfolio, 6(1), 33-44.					
Bolliger, D.U., Shepherd, C.E. (2010) Student Perceptions of Eportfolio Integration in Online Courses. Distance Education, 31(3), 295-314.	journal article	Zubizarreta 2009	Create connectedness, community for online students	Mixed-questionnaire, discussion fora	Results indicate eportfolio positively impacted some student's perceptions of communication, connectedness and learning. Most participants valued eportfolio. Eportfolio can foster learning communities in online grad programmes.
Bowman, J., Lowe, B.J., Sabourin, K., Sweet, C.S. (2016) The Use of Eportfolio to Support Metacognitive Practice in a First Year Writing Program. International Journal of Eportfolio, 6(1), 1-22.	journal article	Yancey 2009	metacognition	Qualitative case study. comparative paper v electronic	students completing an eportfolio showed higher levels of metacognition to connections to learning and connections to career and personal goals
Brandes, G.M., Bosckic, N.(2008) Eportfolio: From Description to Analysis. International Review of Research in Open and Distance Learning. 9(2),1-17.	journal article	Yancey (2006)	enhance reflection	Qualitative, eportfolio	When students understood the tech tools and how to use them their ep were richer and more complex, became more nuanced in their organisation. Metaphors and hypertext moved students towards new organisational modes-better showed processes.

Bryant, L., Chittum, J. (2013) Eportfolio Effectiveness: A(n Ill-fated) Search for Empirical Support. International Journal of Eportfolio, 3(2), 189-198.	journal article	Lorenzo & Ittleson 2005	Eportfolio lit meta-analysis	meta-analysis	More evidence based research required
Buckley, S., Coleman, J., Davison, I., Khan, K.S., Zamora, J., Malick, S., Morley, D., Pollard, D., Ashcroft, T., Popovic, C., Sayers, J., (2009) The Educational Effects of Portfolios on Undergraduate Student Learning: A Best Evidence Medical Education (BEME) Systematic Review. BEME Guide No.11. Medical Teacher, 31, 340-355.	journal article	Challis 1999, Driessen 2007	Systematic review of evidence for the educational effects of the use of portfolios in undergrad education	Systematic lit review	Main effects of portfolio use identified were-improvement in student knowledge and understanding, greater self-awareness and encouragement to reflection, ability to integrate theory into practice. Time commitment required to collate a portfolio was the major drawback identified. Strength of evidence not great
Buente, W., Winter, J.S., Kramer, H., Dalisay, F., Hill, Y.Z., Buskirk,	journal article	Lorenzo and Ittleson	assessment	case study	Eportfolio helped make connections between modules, more coherent learning experience, student eportfolio

P.A., (2015) Program-Based Assessment of Capstone Eportfolio for a Communication BA Curriculum. International Journal of Eportfolio, 5(2), 169-179.					demonstrated met benchmarks for five of seven programme learning outcomes-going to address the gaps it showed, try to better align LOs with rubrics.
Buyarski, C.A., Landis, C.M., (2014) Using an Eportfolio to Assess the Outcomes of a First-Year Seminar: Student Narrative and Authentic Assessment . International Journal of Eportfolio, 4(1), 49-60.	journal article		student experiences and attitudes	qualitative	development of self-awareness, goal setting, planning
Buyarski. C.A., Aaron, R.W., Hansen, M.J., Hollingsworth, C.D., Johnson, C.A., Kahn, S., Landis, C.M., Pedersen, J.S., Powell, A.A., (2015) Purpose and Pedagogy:	journal article	Own model-draws on Zubizarreta 2004, Cambridge 2010, Chen 2009	Conceptual model to guide the use of ePdP-developmental portfolio-integration	Theory-case study	Students who completed the ePDP had a higher first to second year retention. Model of ePDP- provides clarity of purpose-guidance for implementation

A Conceptual Model for an Eportfolio. Theory into Practice, 54(4), 283- 291.					
Chau, J., Cheng, G., (2010) Towards Understand ing the Potential of Eportfolio for Independe nt Learning: A Qualitative Study. Australasia n Journal of Educational Technology , 26(7), 932-950.	journal article	Hartnell- Young 2007, Stefani, Manson, Pegler 2007, Jisc 2008	Use of ep to develop independen t learning	Qualitative- interviews, eportfolio data- thematic analysis	Five major themes- choice and ownership, feedback, technological competence, self- improvement and strategies, both students and teachers perceived ep use a tool conducive to learning as both a product and process geared toward developmental performance.
Cheng, G., Chau, J. (2009) Digital Video for Fostering Self- Reflection in an eportfolio environme nt. Learning, Media and Technology , 34(4), 337-350.	journal article	Barrett 2005	self- reflection using video, motivation	case study, survey	Evidence supports use of video as a reflective tool in an eportfolio context
Cheng, G., Chau, J., (2013) A Study of Goal Orientation on the Reflective Ability of Electronic Portfolio Users.	journal article	Barrett 2007, Abrami & Barrett 2005	To explore the effects of different goal orientation s on students' reflective ability as demonstrat ed in their	eportfolio	Most participants tended to set mastery goals rather than performance goals in their showcase ep, some had both

Internet & Higher Education, 16, 51-56.			electronic portfolios		
Clarke, J., Boud, D., (2016) Refocusing Portfolio Assessment : Curating for Feedback and Portrayal. Innovations in Education and Teaching International.	journal article	own definition /model	Whole programme approach to use of portfolios	Theory	portfolio must be core to a course not an add on. Model, planning framework for different stages of portfolio development
Contreras-Higuera, W.E., Martinez-Olmo, F., Rubio-Hurtado, M.J., Vila-Banos, R., (2016) University Student's Perception of Eportfolio and Rubrics as Combined Assessment Tools in Education. Journal of Educational Computing Research, 54(1), 85-107.	journal article		student perceptions of ep as assessment tools	quantitative	students found the ep had little impact on their motivation to learn, or to continue using it, or on its usefulness in boosting transferable skills
Dalton, V., Grant, B., Smith-Ruig, T., Hemsall, K., (2015) Developing the Virtuous	journal article	Cambridge 2008	Provide an account of a leadership development eportfolio in a programme	case study	Scaffolding reflective practice as part of the online learning experience is contributes to t development of virtuous self

Self in an Online MBA: Reflections on Instruments and Processes. International Journal of Business and Management, 10(10).			of online leadership skill development		
Dominguez, A.S. Morales, L. Tarkovska, V. (2014) The Role of Eportfolio in Finance Studies: A Cross-Country Study. Higher Education Studies, 4(1), 18-25.	journal article	Abrami (2010)-ep and self reg, Huang 2012 ep and metacognition	Cross-country study looking at the role of eportfolio in DIT and Unversitat Jaume I in Spain in Finance Studies. Look at ep as enhancer of student learning experience, and role in preparing students for professional careers	Qualitative, observation, Questionnaire	Finding suggest that eportfolio could be used ep could be used to facilitate and enhance students self-regulated learning experiences, where the role of the instructor is fundamental at the early stages. Use of ep helps students to become more disciplined and self-regulated learners and enhances their autonomy.
Ehiyazaryan-White, E. (2012) The Dialogic Potential of Eportfolio: Formative Feedback and Communities of Learning within a Personal Learning Environment. International Journal of	journal article	PLE-Brown 2010	The potential of eportfolio to support learners in engaging in feedback	Action Research- Qualitative, eportfolio, focus group. Grounded theory approach to data analysis	The ep was more successful than discussion fora in offering learners a space to construct a reflective narrative around their personal learning processes and offering learners an opportunity to revisit and reflect on this process. Culture of sharing and support which development in the group helped build community.

Eportfolio, 2(2), 173-185.					
Gaitan, A., (2012) Understanding Students' Experiences of e-PDP and the Factors that Shape their Attitudes. International Journal of Eportfolio, 2(1), 29-38.	journal article		student experiences and attitudes	qualitative, grounded theory	Clarity of purpose for producing a portfolio is essential- students attitudes are strongly related to their perception of a purpose for producing an ep technical aspects and guidance
Gencel, I.E. (2017) The Effect of Portfolio Assessment on Metacognitive Skills and on Attitudes toward a Course. Educational Sciences: Theory & Practice, 17(1), 293-319	journal article		Determine effects of a portfolio assessment on teachers metacognitive skills and attitudes towards a course	Mixed methods	Portfolio assessments had a positive effect on participants metacognitive skills and positively affected their attitude towards course
Huang, J.J.S., Yang, S.J.H., Chiang, P.Y.F., Tzeng, L.S.Y., (2015) Building an Eportfolio Learning Model: Goal Orientation and Metacognitive Strategies. Knowledge Management	journal article	Barrett 2007	using goal orientation theory to investigate the relationship between goal orientation, metacognitive strategies and enjoyment when students use eportfolio	quantitative	The ep can help students develop a variety of metacognitive strategies, can provide students with a more stress free environment

nt & E-Learning, 4(1).					
Imhof, M., Picard C. (2009) Views on Using Portfolio in Teacher Education, Teaching and Teacher Education, 25, 149-154.	journal article	Campbell 2004-teaching portfolio	Effects of portfolio on preservice teacher professional attitudes and competencies	Quantitative-questionnaire	the portfolio method depends both on personal competencies and the framing within the training programme
Janosik, S., Frank, T., (2013) Using eportfolio to measure student learning in a Graduate Preparation Program in Higher Education. International Journal of Eportfolio, 3(1) 13-120	journal article	Abrami & Barrett 2005	graduate skills and experience	Qualitative, focus group, interview	Students have difficulty adapting to change. Reflection and decision making takes time. Students need regular reassurance. students learn a great deal about themselves. the eportfolio is a very powerful experience
Jenson, J. (2011) Promoting Self-regulation and Critical Reflection Through Writing Students Use of Electronic Portfolio. International Journal of Eportfolio, 1(1), 49-60	journal article		self-regulation and reflection	qualitative, reflections	Results found that using surveys and class discussion in conjunction with eportfolio assignments increased the depth of reflection/thinking
Kabilan, M.K., Kan, M.A., (2012) Assessing	journal article		Pre-service teachers practice and connection	qualitative-eportfolio data, questionnaire	Participants appreciative of eportfolio as their performance and achievements are

Pre-Service English Language Teachers' Learning using Eportfolio: Benefits, Challenges and Competencies Gained. Computers & Education, 58, 1007-1020.			with teaching competencies	e-thematic analysis	traced over time, helps recognise their learning and identify strengths and weaknesses.
Kecik, I.,Belgin, A.,Dikdere, M.,Aydun,S., Yuksel,I.(2012) Determining the Feasibility of an Eportfolio Application in a Distance Teaching Practice Course. International Review of Research in Open and Distance Learning, 13(2), 161-180.	journal article	Imhof & Pichard 2009, Gibson & Barrett 2003, Barrett 2011	Teaching practice	mixed	eportfolio applications can meet the majority of the planning, teaching and reflection needs in the teaching process.
Kitchenham, A., Chasteauf, C., (2009) An Application of Mezirow's Critical Reflection Theory to Electronic Portfolios. Journal of	journal article	Use Mezirow's framework to examine reflection in teacher candidates eportfolio		qualitative, eportfolio, 3 year study	Mezirows taxonomy of critical reflection is a solid model to evaluate reflection by preservice teachers in their eportfolio.

Transformative Education, 7(3), 230-244.					
Klenowski, V., Askew, S., Carnell, E., (2006) Portfolios for Learning, Assessment and Professional Development in Higher Education. Assessment & Evaluation in Higher Education, 31(3), 267-286.	journal article	Own framework	learning and professional development in HE	action research, 3 case studies	Shift from traditional view of portfolio as a collection of work to a learning portfolio which focuses on learning and how the participant is learning.
Landis, C., Scott, S., Kahn, S., (2015) Examining the Role of Reflection in Eportfolio: A Case Study. International Journal of Eportfolio, 5(2), 107-121	journal article	Chen & Penny Light 2010	reflection-instructor experience of using ep	case study, interviews	few of those adopting ep began with reflection as main goal, most realised importance of reflection after initial use, Instructors surprised at students limited ability to reflect
Lopez-Fernandez, O., Rodriguez-Illera, J.L., (2009) Investigating University Students Adaption to a Digital Learner Course Portfolio. Computers	journal article	Barrett 2004	Student attitudes to using an ep to support learning and assessment	Mixed methods	Students had positive opinions and self-efficiency through the eportfolio as a tool to manage their learning and assessment. The expected impact on their learning was not so significant, but the students emphasised that the eportfolio was valuable as a

& Education, 52, 608-616.					personal developmental learning tool
Matthews-DeNatale, G., (2013) Are We Who We Think We Are? Eportfolio as A Tool for Curriculum Redesign. Journal of Asynchronous Learning Networks, 17(4), 1-16.	journal article	C2L catalyst for learning model-design principles-Inquiry, reflection, integration	Programmatic eportfolio-developing professional identity, narrative of growth	case study	Redesign of Masters programme with eportfolio at centre
McWorter, R.R., Delello, J.A., Roberts, P.B., Raisor, C.M., Fowler, D.A., (2013) A Cross-Case Analysis of the Use of Web-based eportfolio in Higher Education. Journal of Information Technology Education, 12, 253-286.	journal article	Lorenzo and Illeson	student voice, looking at disciplinary aspect	mixed methods	5 themes- career focused, big picture of learning, social and visual learning, enablers of eportfolio, barriers of eportfolio
Morreale, C., Van Zile-Tamsen, C., Emerson, C.A., Herzog, M., (2017) Thinking Skills by Design: A Capstone Eportfolio to Promote	journal article	Cambridge et al 2009, Eynon & Gambino 2016	Designing an undergrad capstone eportfolio programme	mixed methods	The eportfolio was integrative, students transferred their undergrad experiences into quality eportfolio and demonstrated concrete learning in line with the general education curriculum.

Reflection, Critical Thinking and Curriculum Integration, International Journal of Eportfolio, 7(1), 13-28.					
Nguyen, L.T., Ikeda, M., (2015) The Effects of Eportfolio-based Learning Model on Student Self-Regulated Learning. Active Learning in Higher Education, 16(3), 197-209.	journal article	Jisc	Eportfolio based self-regulated learning model	Quantitative, experimental , trace data	The results show that students implemented self-regulated learning processes, their intrinsic goal orientation, metacognitive self-regulation
O'Keeffe, M., Donnelly, R., (2013) Exploration of Eportfolio for Adding Value and Deepening Student Learning in Contemporary Higher Education. International Journal of Eportfolio, 3 (1), 1-11.	journal article	Beetham 2006, Tosh 2005, Jisc 2008	Integration of eportfolio into a professional masters program in an Irish HE institute	Case study-focus group, interviews, eportfolio	Findings from this study indicate that development of the awareness and understanding of creativity within the student cohort is necessary to nurture creative and critical thinking abilities.
Ozgur, A.Z., Kaya, S. (2011) The Management Aspect of the Eportfolio as an	journal article	Abrami & Barrett 2005, Tuttle 2007	assessment of placement	case study	Ep brought dynamism, order, planning and interaction to their studies

Assessment Tool: Sample of Anadolu University. TOJET: The Turkish Online Journal of Educational Technology , 10(3).					
Parker, M., Ndoye, A., Ritzhaupt, A.D., (2012) Qualitative Analysis of Student Perceptions of Eportfolio in a Teacher Education Program. Journal of Digital Learning in Teacher Education, 28(3), 99-107.	journal article		student perspectives on eportfolio process and what they learned as a result of this practice	mixed methods	Seven themes: increased scope, guidance, timing, alignment with standards, reflection and growth, organisation of work, the inaccessibility of the eportfolio to people outside the university
Peet, M., Lonn, S.,Gurin, P.,Boyer, K.P.,Matney, M., Marra, T., Taylor, S.H., Daley, A.,(2011) Fostering Integrative Knowledge through Eportfolio. International Journal of Eportfolio. 1(1), 11-31.	journal article	Barrett 2007, Clark & Eynon 2009	Integrative learning	Case study, survey	Students made significant gains in all 6 dimensions of integrative learning, increased capacity to identify, demonstrate and adapt knowledge gained from different contexts,
Pitts, W., Ruggirello, R., (2012) Using Eportfolio	journal article	Challis 2005, Barrett 2005, National	To provide an eportfolio multimedia space for	case study-eportfolio entries-mixed methods	Successful eportfolio entries showed reflective practice were created when teacher participants

to Document and Evaluate Growth in Reflective Practice: The Development and Application of a Conceptual Framework . International Journal of Eportfolio, 2(1), 49-17.		Learning Infrastructure 2003	systematic documentation of teacher professional growth within the domain of reflective practice		explicitly showed how they experienced growth-increased professional competency over time. Developed framework for evaluating growth using four quality criteria
Scholz, K., Tse, C., Lithgow, K., (2017) Unifying Experience s: Learner and Instructor Approaches and Reactions to eportfolio Usage in Higher Education. International Journal of Eportfolio, 7(2), 139-150.	journal article		learner experiences of ep	Mixed methods	v negative student perceptions
Shepherd, C., Bolliger, D., (2014) Managing Communication and Professional Development in Online Graduate Programs with Electronic Portfolios.	journal article		to foster communication and connectedness	case study	Ep an important element in building a learning community for students and staff. Help bridge the distance in online learning communities

Online Journal of Distance Learning Administration, 17(2).					
Simatele, M. (2015) Enhancing the portability of employability Skills using Eportfolio. Journal of Further and Higher Education, 39(6), 862-874.	journal article		Encouraging transferable skills using eportfolio-employability	Mixed methods	Embedded eportfolio approaches are more effective at enhancing skill transference.
Stoten, D.W. (2016) Promoting Self-Regulated Learning: The Potential of Pebblepad+ as a holistic Tool for Education. Journal of Pedagogic Development, 6(3).	journal article		Use of ep to facilitate self-regulated learning and reflection on professional practice. Developmental	Action research	Student control of Ep learning process, learning space owned by the student
Tzeng, W., Kuo, K., Talley, P., Chen, H., Wang, J., (2015) Do Eportfolio Contribute to Learners' Reflective Thinking Activities?: A Preliminary Study of Nursing Staff Users. J Med Syst, 39.	journal article	Europortfolio	To find out what characteristics are required for successful eportfolio use	quantitative, survey	system quality, information quality, user satisfaction, are important to successful eportfolio usage

Wang, L. (2010) Integrating Communities of Practice in Eportfolio Assessment : Effects and Experiences of Mutual Assessment in an Online Course. Internet and Higher Education, 13, 267-271.	journal article	Own-merges CoP theory with EP= CoPf	Evaluate CoPf on learning decisions about knowledge acquisition	Exploratory - Mixed methods-qualitative analysis	The use of the CoPf structure led to more revisions by the students, of their own work, of each other's work and ended up with better final marks
Watty, K. McKay, J., (2015) Pedagogy and Eportfolio: Purpose Aligned to Design (or the why and how). International Journal of Pedagogies and Learning, 10(3), 194-207.	journal article	Own-Pedagogy /eportfolio framework	pedagogic underpinnings of eportfolio use	grounded theory	Creation of pedagogy-eportfolio framework
Wuetherick, B., Dickinson, J., (2015) Why eportfolio? Student Perceptions of Eportfolio Use in Continuing Education Learning Environments. International Journal	journal article		student views	quantitative	Students were more positively inclined to eportfolio in programmes which had a tradition of portfolio use. Two issues which need attention students computer literacy, and support for staff and students

of Eportfolio, 5(1), 39-53.					
Yang, M., Tai, M., Lim, C.P., (2016) The Role of Eportfolio in Supporting Productive Learning. British Journal of Educational Technology , 47 (6), 1276-1286.	journal article	Barbera 2009- productiv e learning	student experience of constructin g eportfolio as assessment / productive learning	Qualitative	findings show absence of conditions to foster productive learning. More coherent assessment design is required, more encouragement of students to do authentic tasks, more support needed for students reflecting