An investigation into the use of digital technology in adult education – How does it affect roles in Adult Education?

A Case Study Approach

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Declaration

I hereby declare that this thesis is my own work and effort and that it has not been submitted anywhere for any award. Where other sources of information have been used, they have been acknowledged.

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Abstract

Adult education and further training in Ireland is currently undergoing reform. The VEC structure is now abolished and it has been replaced by Education and Training Boards. Meanwhile digital technology is also being integrated into adult education and bringing about changes of its own.

This case study aimed primarily to examine how the use of digital technology can impact on the roles of those involved in adult education. In particular, the focus of the study was on the roles of adult learners, adult educators and likewise adult education management. This research was undertaken at a Further Education Centre (FEC).

An online digital lesson on interview skills was developed by the research practitioner and a hyperlink provided to the FEC for use in communications class by the Post Leaving Certificate (PLC) learners. A random sample group of thirty adult learners, ten from each course, completed the digital lesson. In addition, the participating adult learners completed an online questionnaire. In conjunction with this research, a focus group discussion took place involving six adult educators from the FEC. Subsequently, the FEC Director participated in a telephone interview.

This study identified that all three groups of participants had specific roles in integrating digital technology at the FEC. The adult learners viewed their role mainly as doing their coursework. However, they wanted to be involved in creating digital lessons. The role of the adult educator was that of identifying learners’ needs and of preparing digital content in line with both learners’ needs and with curriculum requirements. The role of the Centre Director was to ensure that an adequate digital infrastructure was in place. Moreover, a key finding was that the Centre Director’s role was crucial in facilitating collaboration between all involved in using digital technology at the FEC.

The findings revealed the existence of barriers to the integration of digital technology at the FEC. However, all three groups of participants indicated that they would like to be involved in further use of digital technology there. Consequently it was found that systemized collaboration within and outside the FEC is necessary for the successful integration of digital technology.

Further research is recommended into best practices for collaboration on the integration of digital technology, both within the FEC and in adult education as a whole.
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The assistance of the staff at Kilkenny County Library and the University of Limerick is also acknowledged.

Finally, I would also like to thank my family, friends and work colleagues for their support, encouragement and patience for the duration of this case study.
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<tr>
<td>BTEI</td>
<td>Back To Education Initiative</td>
</tr>
<tr>
<td>CAD</td>
<td>Computer Aided Design</td>
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<tr>
<td>COMREG</td>
<td>The Commission for Communications Regulation</td>
</tr>
<tr>
<td>CSO</td>
<td>Central Statistics Office</td>
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<tr>
<td>CQAF</td>
<td>Common Quality Assurance Framework</td>
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<td>EAEA</td>
<td>European Association for the Education of Adults</td>
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<td>EC</td>
<td>European Commission</td>
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<td>ETB</td>
<td>Education and Training Board</td>
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<td>EU</td>
<td>European Union</td>
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<td>FAS</td>
<td>Foras Aiseanna Saothair</td>
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<td>FEC</td>
<td>Further Education Centre</td>
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<td>FETAC</td>
<td>Further Education and Training Awards Council</td>
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<td>GRALE</td>
<td>Global Report on Adult Learning and Education</td>
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<tr>
<td>HCI</td>
<td>Human Computer Interface</td>
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<tr>
<td>ICS</td>
<td>Irish Computer Society</td>
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<td>ICT</td>
<td>Information and Communication Technology</td>
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<td>LTI</td>
<td>Local Training Initiative</td>
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<tr>
<td>NESC</td>
<td>National Economic and Social Council</td>
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<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
</tr>
<tr>
<td>PLC</td>
<td>Post Leaving Certificate</td>
</tr>
<tr>
<td>PDF</td>
<td>Portable Document Format</td>
</tr>
<tr>
<td>SST</td>
<td>Skill Specific Training</td>
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<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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<td>VEC</td>
<td>Vocational Education Committee</td>
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Chapter One - Introduction

1.1 Introduction

The UNESCO International Adult Learners Charter states that: “All adult learners have a right to expect high-quality adult learning programmes designed to meet their needs” (UNESCO 2009b). Adult learners therefore have a right to high-quality education. Likewise, adult education providers are obliged to deliver a service that is in line with learners’ needs and meets the demands of the labour market.

Adult Education in Ireland is currently undergoing reform in terms of administration and formation. During July 2013, sixteen Education and Training Boards (ETBs) have been established and have replaced the familiar structure of thirty-three Vocational Educational Committees (VECs).

Meanwhile, another significant change is occurring: digital technology is being used increasingly as a tool for delivering adult education. Effectively selecting and using digital technology can enable adult educators to support adult learners in attaining their learning goals.

1.2 Statement of Topic

This project is a case study: it examines how the use of digital technology in adult education can affect the roles of adult educators, adult learners, and adult education management at a Further Education Centre (FEC).

The FEC was established in 1991 by the Department of Education and Skills. At the time when the research was conducted the FEC was run by the local VEC. Since July 2013, the FEC is under the auspices of the local Education and Training Board (ETB), the result of a merge between the local VEC and a neighbouring VEC. During the 2012/2013 academic year 120 adult learners were enrolled at the FEC.

According to the FEC website, all adult learners attending PLCs in Ireland are obliged to pay a PLC contribution fee of €200 on registration. However, there are exemptions such as medical care holders, learners in receipt of a student grant, Back to Education Allowance (BTEA) or Vocational Training Scheme (VTOS) allowances. Adult learners
attending full-time approved PLC courses may be eligible to apply for a means tested maintenance grant.

The aim of the FEC is to provide adult learners with further education to enhance their opportunities of obtaining employment. The FEC website outlines a range of courses provided for adult learners including:

- Junior Certificate;
- Leaving Certificate;
- Post Leaving Certificate (PLC);
- Vocational Training Opportunities (VTOS).

This focus of the case study will be on the Post Leaving Certificate (PLC) programmes in the FEC. During the 2012/2013 academic year, a total of sixty five adult learners are enrolled on PLC courses. The three programmes of study are Art, Business Studies and Nursing Studies. All three programmes are FETAC level five accredited. The aim of these programmes is to prepare the adult learners for employment or for further education in their chosen career area.

1.3 Research Questions

This case study will address the following research questions:

- How does the use of digital technology affect the role of adult learners?
- How does the use of digital technology affect the role of the adult educator?
- How does the use of digital technology affect the role of management?

1.4 Scope & Limitations

The scope of this case study is for thirty adult learners, six adult educators and the Centre Director at the FEC.

This case study is to be conducted on a small scale so therefore generalizations or assumptions cannot be made to all FECs or likewise to adult education as a whole. However, it is envisaged that the findings will provide an in-depth insight into using digital technology effectively in an adult education setting.
1.5 Relevance

The White Paper called for increased integration of ICT into adult education including optimizing the relevance of ICT in adult education (Ireland, Department of Education and Skills, 2000). Indeed, the White Paper also highlighted that employers were amongst those who emphasised the need for adults to acquire ICT skills. The necessity to maximise the capacity of digital technology as a means for training was also a focus of the paper (Ireland, Department of Education and Skills, 2000).

The relevance of this case study is to determine if previous literature on adult learning theories is still applicable when using digital tools in an adult education setting. The study also identifies other factors which require consideration when using digital content in adult education. Levels of digital skills in Ireland and worldwide are investigated. The existence of barriers to the successful integration of digital technology into society and into education is researched.

Research has shown that students from Irish schools have digital literacy skills that are above the OECD average (Ireland, Department of Education and Skills, 2011). Interestingly, every academic year witnesses an influx of adult learners displaying increased competence with the use of digital technology. The challenge for adult education providers is to use digital technology effectively to engage these future adult learners.

1.6 Significance

With a background of economic recession presently in Ireland and consequently experiencing high unemployment, the demand for education and training has increased, and likewise for educational attainment (Ireland, Central Statistics Office, 2011). Certain segments of the unemployed, such as those from the construction sector have opted for further education or retraining in order to meet the demands of the competitive labour market.

Equally, the demand for and use of ICT skills has increased according to the Joint Committee on Jobs, Enterprise and Innovation (2012). In response to the economic downturn the government has made more training places available for the long term unemployed (Ireland, Department of Education and Skills, 2012). Interestingly, the adult and further education sectors are under review by the National Economic and
Social Council (NESC). As well as this, a five year strategy for all further education and training is due to be prepared by Solas in 2014 (Murray 2013).

This case study will ascertain the extent to which digital technology is currently used at the FEC. Barriers to the use of such technology at the FEC will also be identified as well as the identification of possible methods of addressing these.

1.7 Research Background

In recent years digital tools are being used increasingly in society and by educators as an aid to learning. Indeed, eighty three per cent of Irish households have access to a computer (Ireland, Central Statistics Office 2012b). Adult education is not by any means to be viewed as exempt from this development.

The author of this case study, an adult educator, had previously developed a digital lesson using Adobe Captivate for a group of adult learners in a community training centre. It was found that for the duration of that particular lesson, the educator’s role had evolved somewhat from the traditional teaching style. It was revealed that most of the input from the educator was in the preparation of the content. During the digital lesson the educator was mainly providing minor technical support after initiating the digital lesson. Interestingly, it was observed throughout the digital lesson that the adult learners were mainly self-directed.

With these findings in mind, it was decided to conduct further investigation into the impact of using digital technology in an adult education setting. This investigation would have a particular focus on the roles of those in an adult education setting.

1.8 Research Methodology

Qualitative and quantitative research methods were used to obtain data for this case study. In order to ensure validity of results obtained, it was decided to use the triangulation approach for data collection.

This process involved collecting data from three groups of participants: adult learners, adult educators and the FEC Director. The three methodologies used were: an online questionnaire, a focus group meeting and a telephone interview respectively. A random sample of thirty adult learners, ten from each of the PLC programmes at the FEC was obtained. The adult learners completed an online digital lesson on interview skills.
developed by the research author. On completion of the digital lesson, quantitative research was conducted with the participating adult learners by means of an online questionnaire. Qualitative research involved a focus group discussion with adult educators. A random sample of six adult educators from the FEC participated in the focus group discussion. In addition, the Centre Director participated in a structured telephone interview.

The data obtained from this research was subsequently collated and analysed.

1.9 Case Study Structure

The following is an outline of the structure of this case study.

Chapter One, the introduction, gives an outline of the case study background, the research questions, context and relevance. It also summarizes the case study structure.

Chapter Two reviews previous literature in the context of the case study. The focus of this chapter is on issues relevant to the integration of digital technology into adult education.

Chapter Three, the research methodology, gives an account of the research undertaken. The research questions are presented, along with rationale for the chosen research methodology.

Chapter Four outlines the findings gleaned in this case study in relation to research questions.

Chapter Five, discusses the findings in the context of the literature reviewed for Chapter two. The findings are also discussed in relation to the research questions.

Chapter Six, the conclusion, presents the outcomes of the case study in the context of the research questions. Recommendations for the FEC and further afield in adult education are made.
Chapter Two - Literature Review

2.1 Introduction

The objective of this chapter is to review literature in relation to using digital media to teach job interview skills in an adult education setting. The focus of the review will be on concerns arising around the roles of learners, educators and institutions on the integration of digital technology into adult education. The implications of using digital technology in an adult education setting will also be investigated.

Literature will also be reviewed on key considerations necessary for the development of digital content in an adult education setting.

2.2 Overview

Employers now have a global pool of potential candidates to source employees from. Digital technology can be used to source employees from any country worldwide (Scott 2012). Indeed, digital technologies enable candidates to submit video Curricula Vitae, whereby recruiters then choose their preferred job candidate from a selection of submitted videos (Peacock 2008). It is now possible for employers to have the capability to record interviews online and then with playback, compare and contrast how candidates performed in some detail. The use of social media such as LinkedIn, Facebook and Twitter in recruitment is increasing (Costanza 2013).

Education systems need to be of a standard that will enable society and the economy to prosper. Boland (2004) emphasises that “A quality education system, accessible to all, is essential to a democratic, socially inclusive society”. Adult learners expect to be trained to meet employment requirements; likewise adult educators need to be adequately prepared for their role.

The next section will review learning theories relevant to Adult Education.
2.3 Learning Theories

When preparing course materials for adults, the educator’s understanding of how adults learn is crucial in ensuring that learners get the most out of their learning experience (Cercone, 2008). Therefore, the relevance of adult learning theory in a digital context must be investigated.

Learning theories could well be applied to integrating digital content (Mason 2006), ensuring that various elements of course content engage different types of learners.

2.3.1 Andragogy

Knowles (1980) presents the notion of andragogy and its implications for adult education. Andragogy focuses on the importance of the learning environment and the involvement of adults in planning their own learning. The significance of adult learners’ experiences and self-directedness can also have implications for adult education.

Knowles et al (2005), highlight the following as key assumptions on how adults learn:

- The learners need to know;
- The learner’s self-concept;
- A student’s readiness to learn;
- The role of the learner’s experience;
- The student’s orientation to learning;
- Students’ motivation to learn.

On andragogy, Gitterson (2004) notes the significance of collaboration between adult learners and educators in the learning process. Adult learners can have a significant contribution to make to a class, whilst the instructor can provide direction and focus.

Adult Education in Ireland has been defined in the White Paper on Adult Education (Ireland: Department of Education and Science 2000) as “systematic learning undertaken by adults who return to learning having concluded initial education or training”. The White Paper on Adult Education is viewed as advocating some of the
key principles of andragogy, including the notion that the adult learner is a self-directed and self-motivated learner (Ireland, Department of Education and Science 2000).

Understanding the needs and characteristics of adult learners can prove critical for the provision of effective training. These particular needs require investigation as the findings can prove useful to adult educators, especially when developing training plans (Knowles 1980).

Educators are reminded to look at adult learning in the wider context of the learners' personal circumstances, growth, learner differences and learner goals (Knowles et al 2005).

2.3.2 Constructivism

According to a constructivist view, learning is seen as the construction of meanings by the learner. “Constructivist learning means that learners accommodate new ideas into their prior knowledge” (Karppinen 2005). Kolb (1984) suggested that there are four stages in the learning process which can be viewed as a continuous cycle, (Figure 2.1).

Concrete experience is followed by reflective observation on that experience on a personal basis. This is then followed by the derivation of general rules describing the experience, or the application of known theories to it (Abstract Conceptualisation), and hence to the construction of ways of modifying the next occurrence of the experience (Active Experimentation), leading to the next Concrete Experience.

![Figure 2.1 The Experiential Learning Cycle, Kolb (1984)](image-url)
The constructivist approach is currently widespread in education - education policies, models and practices focus on constructivism (Brown, 2006). The constructivist approach can be applicable to learning with the aid of ICT:

Learning becomes situated in action; it becomes as much social as cognitive, it is concrete rather than abstract, and it becomes intertwined with judgement and exploration. The web becomes not only an informational and social resource but a learning medium where understandings are socially constructed and shared. In that medium learning becomes a part of action and knowledge creation.

(Brown 2000, p.6)

According to Bobrow and Whalen (2002), knowledge is often being undocumented as it is embedded in practice. An example of this would be the Eureka system at Xerox whereby knowledge is captured and shared using digital technology (Bobrow & Whalen, 2002), (Brown, 2000). Xerox Corporation developed the Eureka system for 20,000 of their customer service engineers worldwide. The system evolved from engineers recording faults to Xerox implementing a web based system whereby engineers could read weekly updates thus using the system as a learning tool for their work (Bobrow & Whalen, 2002).

The importance of information navigation skills, discovery-based learning, and learners making sound judgements, coupled with a bias towards action, can enable the internet to act as a learning medium (Brown, 2000).

Brown (2000) suggests taking a constructivist approach when using digital technology in training. Digital technology can even change the approach to training within a whole organisation. For example, in Xerox engineers use ICT to log and share information for repairing photocopiers. This illustrates how learning can occur with the use of digital technology instead of using the traditional methods such as, workshops. Brown (2000) concludes that there is a move from using web technology to support learning to using digital technology to support learning collaboratively.
Karppinen (2005) suggests that constructivist theory can be applied to the concept of using a digital resource to teach a subject. This can be possible for example, if adult learners work at their own pace, choosing parts of a digital resource they wish to revisit and revise. Indeed Huang (2002) proposes that aspects of constructivism blended with adult learning theory can prove useful, particularly for teaching adults online.

Most of adult learning is constructivist by nature based on the learner's interaction with experience. Attributes of constructivism can be found in "self-directed learning, transformational learning, experiential learning, situated cognition, and reflective practice" (Merriam et al 2007).

2.3.3 Connectivism

The concept of connectivism emerged to reflect the impact of technology on learning as previous learning theories did not encompass using technology for learning (Siemens 2005). Connectivism assumes that knowledge is distributed across networks and the act of learning is largely one of forming a diverse network of connections and recognizing attendant patterns. New updated information needs to be continually acquired and analysed by learners. The ability to discern between relevant and irrelevant information is crucial. The key role of the learner as suggested by connectivist theory could be as a decision maker.

Challenging connectivism, Kop (2011), suggests that boundaries can be blurred and the connectivist learners must be self-directed. Commenting on connectivism and adult learners, Siemens (2012) notes that a characteristic of adult learners is to skim information, for example, online course material and decide what is relevant for their needs, rather than trying to go through everything they are presented with in detail. Siemens (2012) recognises the significance of Web 2.0 in connectivism but claims that technical tools needed for adult learning require development.

2.3.4 Multiple Intelligences

Gardner (1983) proposed that learners can possess at least seven types of intelligences and that learning can be influenced by a person's interaction with their environment. Educators therefore need to be mindful of this and must not assume that all learners learn in the same way.
Brown (2000) recognises the internet as a medium that honours Gardner's theory of multiple intelligences and acknowledges that educators now have the opportunity to engage more learners using the World Wide Web.

Merriam et al (2007) note the significance of applying multiple intelligence theory to adult learning emphasising educators should determine how best to apply the theory when developing learning strategies.

2.3.5 Defining Adult Learning

The European Commission Lifelong Learning Policy (2012) defined Adult Learning as encompassing all types of learning; it can also be viewed as supporting the theory of andragogy:

- Formal, non-formal and informal learning for improving basic skills, obtaining new qualifications, upskilling and reskilling for employment.
- Participating in social, cultural, artistic and societal learning for personal development and fulfilment.

(European Commission Lifelong Learning Policy 2012)

With regard to age the aforementioned policy states that adult learning should include all learning undertaken by adults since leaving their initial training and education.

According to Knowles (1980), adult learners themselves can be defined as having the following characteristics:

- Adult learning can be self-directed and adult learners are ready to learn;
- Adults need to feel that learning focuses on issues that directly concern them and their experiences;
- Adult learners view education as a means of improving their competence and can visualize how they will apply their learning and improve from it;
- Adults need to expect change such as performance improvement to result from their learning;
- Adult educators need to create a climate that is experiential to enable adults to gain more meaning from the learning experience.
Thus, adult learners have a need for control of and involvement in the learning, along with a need for the learning experience to be relevant.

The education of adults appears to be quite diverse in nature, offering several means of accessibility throughout Ireland and Europe. Federighi (1999) argues that adult education is no longer merely to be structured like a traditional classroom education setting. It comprises of an “entirety of learning activities, including those of an informal or accidental nature, present in work and everyday life” (Federighi 1999).

Rogers (2002) supports this view stating, “people engage in teaching adults in many different contexts and for many different purposes”. Rogers (2002) acknowledges that although various forms of adult education exist, there is no agreement on a single definition of Adult Education.

2.4 Adult Education: Participation & Structure

2.4.1 Ireland

Due to the diversity within the Irish Adult Education system, ranging from evening classes to full time education, it is difficult to quantify the exact number of participants. Looking at the background of unemployment in Ireland, which was at 14.8% in December 2012 (Ireland, Central Statistics Office 2013), the number of adults participating in education in Ireland is estimated at 304,900. It is summarised as follows:

- Further Education – 180,000 full time and part time students (these include: PLC’s, VTOS, Adult Literacy Schemes, BTEI);
- FÁS Training Courses – 75,000 (SST, LTIs, Traineeship Programmes Return to Work);
- Springboard Initiative – 5,900 free part time Education places (aimed at Adults returning to work);
- Back to Education Allowance recipients – 25,000 people receiving social welfare payment whilst pursuing their education;
- Labour Market Education and Training Fund – 6,500 to participate by end of 2012 – a new FAS funded scheme proposed to train unemployed people in areas where occupational demand exists.

During December 2012 the Momentum initiative was announced (Ireland, Department of Education and Skills 2012). It is envisaged that the initiative would provide access for up to 6,500 long term unemployed job seekers to free training and education programmes. Work experience and workplace skills training would be key elements of these programmes.

Based on these figures it can be assumed that the number of participants in Adult education will increase. Due to the current competitiveness in the Irish labour market it is considered an achievement in itself for a candidate to be selected to attend for a job interview.

2.4.2 Europe: & Worldwide

Whilst emphasis is placed on the adult learner as an individual, there are different perspectives on adult education worldwide (Jarvis 2004). The existence of diversity in adult education in terms of purpose, provision and content is acknowledged (EAEA 2012) and (UNESCO 2009a). UNESCO (2009a), states that whilst overall participation in Adult Education is low in most countries, significant inequalities exist in terms of access and participation. Overall the UNESCO report concludes that participation in adult education varies according to socio-economic, demographic and regional factors.

On the positive side, levels of participation in adult education have improved since the fifth international conference on adult education (CONFINTEA V in 1997), although the levels remain low (UNESCO 2009a).

The benefits of adult learning have to be made visible to the individual learner, corporations, and different levels within public authorities, learning providers and social partners and civil society actors.

(EAEA 2006, p.57)

The aforementioned EAEA (2006), report recommended an increase in the provision of information on adult learning and of guidance services through the use of marketing techniques and the media.
The same report called for recognition of all forms of adult education for inclusion in the Common Quality Assurance Framework (CQAF). The establishment of a quality assurance working group to develop a quality assurance framework for adult education at European level is also recommended. Emphasis is also placed on the need for developing a quality assurance system particularly for "recognising and validating other forms of learning" EAEA (2006). This can be achieved by collaboration amongst adult education providers at national, European and worldwide levels EAEA (2006).

The European Commission (2012b) presented a “Rethinking Education” strategy—recognising the importance of supplying highly skilled workers for economic growth. The report requests “governments, education and training institutions, teachers, businesses and other partners alike to pull together” to enable educational reform throughout member states. More exploitation of educational technology in adult education is called for in Europe. Worldwide GRALE— the Global Report on Adult Learning and Education, describes digital literacy levels as low amongst adults worldwide (UNESCO 2009a). Research currently being conducted by the OECD to ascertain levels of digital skills and other competencies amongst adults in 27 countries throughout Europe, the Americas and Asia, will be available at the end of 2013 (UNESCO 2009a).

The usage of information and communication technology (ICT) in society and education will be discussed in the next section.

2.5 Information and Communication Technology Usage

ICT has become more readily available and accessible to society as a whole. The emergence of the information society has brought about many changes. This is due to the convergence of ICT and its use for collaboration and knowledge sharing (Kozma 2005).

Based on case studies from three countries namely; Singapore, Finland and Egypt and on literature, Kozma (2005) concluded that ICT based education reform can even influence government policies, economic growth and social development. In Singapore, the government recognized knowledge creation and technological innovativeness as some of the factors necessary to sustain economic growth in the country. Finland overcame a recession in the early 1990’s, and a board was established to draft an
information society strategy for the country. Members of the program were from government departments, businesses and educational institutions. Nokia, the mobile phone company, is an example of a company which benefitted from this strategy. Originally a wood pulp and paper mill in serious financial difficulty in the early 1990s, Nokia became an employer of 60,000 by the year 2000. This was brought about by the integration of ICT to learn about and share information on customer needs amongst all levels of staff and subcontractors.

Egypt, on the other hand, a country trying to achieve economic growth is viewed as a "work in progress" whereby challenges such as poverty must be addressed first by policymakers (Kozma 2005). Poor ICT infrastructure in developing countries like Egypt can be another challenge for policymakers.

Kozma (2005) proposes a development framework for ICT-based education. Whilst the framework is aimed at policymakers it does focus on the use of "Educational ICT", emphasising the impact ICT has on improving educator efficiency and learner understanding.

Adult learners are aware of the importance of ICT; AONTAS (2011) report that 42% of adult learners surveyed, deemed the provision of access to ICT and to the internet as factors influencing their choice of training course.

The next sections will review current ICT usage relative to adult education in Ireland and further afield.

2.5.1 Ireland

During the first quarter of 2012, usage of ICT in Ireland is summarised as follows (Ireland, Central Statistics Office 2012b):

- 83% of households in 2012 have access to a computer at home;
- 81% of households have access to the internet at home;
- 77% of individuals had used the internet in the previous 3 months;
- 58% of individuals used the internet daily.
The most popular activities of individuals who accessed the internet in the last three months were E-mail (66%), finding information about goods or services (63%), using services related to travel or travel-related accommodation (46%) and social networking (45%).

Other uses such as: travel arrangements (30%), holiday accommodation (28%) and tickets for events (27%) were the most popular types of internet purchases in the previous 12 months.

Responding to the CSO findings, the current Minister for Communications wants the number of households with broadband access increased to one hundred per cent (Kennedy 2012). The Minister is reported as saying in the same article that the internet is essential for living nowadays and that the challenge for the government is to get the remaining households connected.

These figures can be indicative of ICT usage in the home. However, little relevant research appears to have been conducted on the use of digital technology in education particularly in the area of Adult Education in Ireland.

2.5.2 Europe

Eurostat reported that internet access in Europe has grown from 55% in 2007 to 73% in 2011, due to the widespread availability and affordability of internet service providers (European Commission 2012a). Of those researched, 38% of individuals aged 16-74 years engage in social networking on a regular basis. It was found that 89% of 16-24 year olds had basic computing skills (for example file management), in comparison to 63% of 16-74 year olds.

With regard to the use of ICT in European enterprises, the same Eurostat report states that 90% of enterprises had internet access. The percentage of enterprises selling online was highest in the accommodation sector (58%), whereas the highest proportion of enterprises making online purchases was recorded for information and communication services at 60%.

It is predicted that the usage of mobile internet technology will grow to 3.8 billion worldwide by 2017 (Ericsson, 2012). By then data traffic could be equally divided between smartphone and other mobile devices such as tablet PCs for example. The
potential for education to be accessed online is growing due to the growth of internet access worldwide (Broadband Commission, 2012). With the number of businesses subscribing to VOB (Voice over Broadband) increasing (Comreg, 2012), it is possible that the potential number of businesses conducting online job interviews will also increase. The significance of ICT skills for adult learners will now be discussed.

2.6 The Significance of ICT Skills for Adult Learners

The White Paper (Ireland, Department of Education and Science 2000) outlines proposals for the integration of ICT into adult education; recommending training for adult learners and educators alike. In the past ICT was used in the workplace to complete specific tasks, such as word processing or data entry. Today it is viewed as a transferable skill for life – for example; for research, or social networking (Clarke, 2004). Having ICT skills can make the difference between having and not having a job particularly for older workers (Cordes 2009). A lack of digital expertise could even weaken an adult’s position in the labour market; currently 53% of EU employees require ICT skills for work (EU Skills Panorama 2012).

ICT skills solely are not necessary to engage in adult education; however, these skills are necessary for courses, even those that are not online. Wetzel (2009), emphasizes that ICT skills can be a factor affecting employability and indeed the same can be a requirement for most Adult Education vocational programmes. ICT skills are paramount nowadays for completing tasks such as research, presentations, and report production. Likewise, ICT skills are necessary to engage in both learning and communication.

Adult Educators’ and adult learners’ expectations of classroom structure, curricula, support materials, roles, and instructional activities may all need to be re-evaluated and revised (Ginsburg 1998). Adult Educators need to be cognisant of their learners’ ICT skills levels, ensuring that relevant initial ICT training or instruction will enable adult learners to achieve their goals Ginsburg (1998).

Challenges for educators can arise when teaching a class where a group of learners could present with mixed levels of ICT skills. These levels of ICT skills can range from young technology experienced learners to older learners with less ICT experience and consequently with less confidence in their ability to learn.
Adult educators and learners can collaborate in order to determine which approach will best suit their learner’s needs. Institutions should also collaborate with data service providers, engage in the development of low cost programs for learners and indeed work with learners when recommending appropriate technologies (Cordes 2009).

2.7 Barriers to using ICT in Adult Education

When integrating ICT into adult education an educator needs to be mindful of the barriers which exist. Whilst Van Dijk (1999) highlights the key barrier as access to technology, four other barriers are also identified:

- Lack of elementary digital experience;
- No possession of computers and network connections;
- Lack of Digital Skills;
- Insignificant usage opportunities.

One has to be mindful that this research was completed in the late nineties, at a time when there was less availability of internet access and digital technology was not as user-friendly. However, these barriers could suffice as part of a checklist to work from when initially developing digital training.

Differences in skill and in technology usage exist and may not be resolved as technology availability increases (Van Dijk & Hacker 2003). Based on research in The Netherlands in 1998, Van Dijk & Hacker (2003) noted that 36% per cent of the population had few or no digital skills despite its digital infrastructure and concluded that negative attitudes towards ICT were the cause.

2.7.1 Finance

Technology is constantly changing, requiring considerable effort and finance to keep up to date (Klecun 2008). Educators can find it difficult to keep up with these on-going changes and can focus too much on updating.

Digital exclusion could lead to social exclusion, yet digital inequalities should not take precedence over other inequalities (Klecun 2008).
While finance is currently being recognised as one of the main barriers to technology integration into education, other barriers exist.

2.7.2 Educators

Even educators themselves can be regarded as a barrier to the integration of digital technology into education (Redecker et al 2009). The reasons that educators can be barriers include:

- Digital Skills Divide – both teachers and learners have various levels of digital skills;
- Teachers' digital and didactic competences – teachers must be willing to continually improve their digital skills through training;
- Lack of (continuous) motivation – by all involved in a learning situation;
- Lack of quality insurance mechanisms – for user generated content.

An investigation of factors which obstruct or stimulate teacher educators to using ICT innovatively suggests that innovative teachers are important when integrating technology into education (Drent & Meelissen 2007). ICT should be used to develop learner skills such as communication, problem solving and lifelong learning.

Based on the research conducted amongst 431 educators in The Netherlands, Drent et al (2007) concluded that teacher educators should collaborate with ICT experts as well as colleagues. Their research also concluded that teacher educators are aware of the advantages of innovative use of ICT in education and that the approach should be student oriented. Although Drent et al (2007) investigated teacher educator perceptions, from a pedagogical perspective; their research is applicable to adult educators.

2.7.3 Digital Divide

Individuals not using ICT can be excluded from activities ranging from online banking to distance education. The divide can be caused by income levels, telecommunications infrastructure and consumer perceptions of ICT (Chinn and Fairlie 2006).

The digital divide is more than just a divide between those who have and those who have not access to digital technology. Klecun (2008) suggests that the digital divide can
compound social exclusion and those with learning difficulties or low confidence constantly face new digital barriers.

It is possible that literature on the digital divide could be sub-divided into four categories (Klecun 2008):

- Disparities between access and lack of access to ICT - which can be unavoidable like other inequalities, for example, access to healthcare etc.;
- The digital divide as a developmental issue - within and between countries;
- Technological divide that needs technological solutions - to be viewed as a political and social issue rather than a developmental issue;
- The notion that the digital divide should not be seen as a strategic, political or developmental issue. Focus can be diverted from more pressing issues, for example, poverty, thus increasing the divide.

An investigation of the digital divide in European countries from the perspective of internet access concluded that there could be a further divide - the internet user type divide (Brandtzaeg et al. 2009).

Brandtzaeg et al. (2009) categorised internet user types as follows:

- Non users - people who do not use the internet on a regular basis;
- Sporadic users - people who use the internet occasionally, for example, to check emails;
- Entertainment users - those who use the internet for watching television shows, downloading music;
- Instrumental users - goal oriented users who use the internet to search for information about goods or services, for example, online banking;
- Advanced users - use the internet for all types of activities and more for instrumental activities rather than leisure activities.
Young adult learners today may have grown up using ICT:

Those of us who were not born in to the digital world but have, at some later point in our lives, become fascinated by and adopted many or most aspects of the new technology are, and always will be compared to them. Digital Immigrants

(Prensky 2001, p.3)

Today's 23 year old adult was ten years of age at the time of Prensky (2001) writing his article and may have acquired at least thirteen years of digital experience since. Prensky (2001) cites an example of how a video game “The Monkey Wrench Conspiracy” was developed at his workplace to train engineers to use CAD software. Prensky (2001) concludes that a similar approach to this can be applied to teaching subjects such as Geography and Maths. “If Digital Immigrant educators really want to reach Digital Natives - i.e. all their students - they will have to change”. Prensky (2001) recommends that educators need to review both their methodology and content.

Addressing the digital divide in Ireland, it was emphasised that certain groups of the population are excluded from access to ICT (O'Donnell et al 2003). Recommendations were then made to the government to address this issue at local and national level. The European Commission (2010) addresses the digital divide by setting out strategies for “e-inclusion”, calling on the European Parliament and member states to focus on increasing internet usage, broadband coverage, digital literacy and accessibility to websites (European Commission 2010).

2.7.4 Developments

With on-going developments in ICT, educators can find it challenging to select the most appropriate technology for the learning situation.

Developments in media technology are affecting education at every level. Most technologies that will help teaching and learning into the next century already exist. They are available to industry and to education and training institutions, but they are not yet all accessible to learners at home although many will be soon. They have different costs and different benefits.

(Sargent 1997, p.1)
Although Sargent (1997) focuses mainly on media technology, adult education is recognized as changing in terms of accessibility, freedom and choice. Bitner & Bitner (2002) note that the success or failure of implementing ICT in the classroom can depend on the educator.

2.8 The Role of Adult Learners

The White Paper (Ireland, Department of Education and Science 2000) recognises the Adult Learner as the centre of the learning process, echoing the principles of Andragogy (Knowles 1980). Based on learning theory the adult learners can benefit from experiential learning whereby the learners role can be viewed as being more active than passive (Knowles 1980), Kolb (1984).

Learners' digital skills along with learning theory need to be taken into consideration in order to enable learning to occur. Brown (2006) asserts that the role of the learner in the future to be that of “knowledge navigation”, whilst the educator is in a mentoring role.

2.9 The Role of the Adult Educator

The role of the educator needs consideration when using ICT in an adult education setting (EAEA 2006). Indeed, educators need to adapt their methodologies and content in order for effective learning to occur (Prensky 2001). The role of the adult educator can depend on the context of the learning, for example for self-directed learning, the educator will adapt their approach accordingly (Merriam et al 2007).

Brown (2006) acknowledges paradigm shifts in education due to continual developments in ICT; outlining trends and developments in education which include:

- Moving from constructivism to social constructivism where new meanings are constructed by the learner and his community;
- From knowledge production to knowledge configuration: educational instructions should focus on knowledge management – storage and reuse of knowledge.

Table 2.1 summarizes the role changes in education proposed by Brown (2006).
Both educators and learners need to be mindful of adapting to technological changes. Wagner et al (2000) conclude that: “improving the ways technology is utilised as a learning tool can make adult education more engaging and more effective”.

It is proposed that in online learning environments both learners and educators need to adapt and change their methods of learning and teaching respectively. The role of the educator can therefore be as a “Change Agent” constantly adapting to new technologies in the classroom (Cercione 2008).

2.9.1 Facilitation

Andragogy can imply that, in order to create effective lessons, the role of the educator can depend on the learning situation. For example during the initial stages of a course the learner may be more dependent on the teacher for support (Merriam 2001).
Downes (1998) triad model of online learning identifies three key players in adult education:

- The student
- The instructor
- The facilitator

In this model, the role of the student is to learn; the instructor plays three major roles—a facilitator of learning, content-area specialist, and evaluator. Using this model (Downes 1998), emphasises that the key role of the instructor is as a content expert. Downes introduces the facilitator as a person based in the education centre providing technical support. Kop (2008) advises educators to make the best use of technology in order to enrich learners' lives.

The role of the educator may be viewed as that of a facilitator/navigator as well as content expert guiding learners when necessary (Brown 2006). It can be assumed that younger adult learners are more familiar with ICT, requiring less support than older adult learners. The use of ICT in adult learning can imply that the role of the instructor is not merely as a subject matter expert, but also as providing ICT support for some adult learners.

The notion exists that digital native learners learn differently in comparison to past generations of students. According to Bennett et al (2007), digital natives are “active experiential learners, proficient in multitasking”, using digital technology to access information and also using it as a communication tool. The current generation of young digital native learners may have varying levels of digital technology skills and be in a class alongside digital immigrants. Educators therefore should aim to accommodate these groups of learners with a mix of digital skills (Bennett et al 2007).

Redecker et al (2009) suggest that teachers should adopt new roles when using web 2.0 technologies; including advocating innovative learning practices, keeping their digital skills up to date and acting as a mediator between all parties involved in the education process.
2.9.2 Collaboration

Collaboration and networking, both in Ireland and internationally, is necessary to compete effectively in a globalised education sector (Boland 2004). Strategies need to be put in place to enable knowledge transfer to society and to the economy.

Kozma (2005) discusses the notion of incorporating ICT into education whereby “ICT is used to improve the delivery of and access to education”. In the case of Finland, knowledge and technical innovation have contributed to increased productivity, to physical capital upgrade and indeed to the creation of jobs (Kozma 2005). The example of Nokia referred to in Section 2.4 of this chapter outlines how successful collaboration brought the company out of financial difficulties.

2.10 The Role of Adult Education Management

The White Paper (Ireland, Department of Education and Science 2000) highlights the significance of partnerships between adult education centres themselves and the local community, recommending the creation of local Adult Learning Boards.

Recognition of various forms of Adult Learning is also supported by the EAEA (2012) and the European Commission (2012b), encouraging networking between adult education providers themselves both locally and internationally.


2.11 Considerations for Preparing Job Interview Skills Training

An interview is to be regarded as an opportunity for an employer to see if a potential employee has the skills, knowledge and experience required for a particular job (Bolles 2012). Interviews are also a means for employers to ascertain potential employee attitude and suitability for their workplace. In order to succeed, an interviewee needs to:

“be able to present self, skills, and experience in an appropriate and effective manner” (Speas 1979).

Typically, the traditional method of teaching job interview skills may have been, whereby learners acquired necessary skills and knowledge using relevant textbooks.
This was then followed, in some cases, by the learners participating in a mock job interview in anticipation that the subsequent feedback provided would improve the learner's job interview skills. Educators need to examine how best to integrate ICT into teaching interview skills to a group of adults with mixed levels of ICT skills.

2.11.1 Training Components

Research conducted on job interview skills concluded that: "that more training components added to the instructional procedure increase the performance of job-seeking interview skills" (Speas 1979). These findings indicate that in order to develop interview behaviours, a combination of training components can be utilised. Model exposure, role playing, and video tape feedback can be more effective than individual training components. Speas (1979) term "training components" could suggest a blend of training components, such as textbooks, which it is envisaged could be replaced with a combination of digital resources, such as, video clips, wikis, blogs etc. These digital resources can be easily updated or tailored with content which can be reused by the educator.

Therefore, it can be possible that a digital resource can be used by the adult learners at a pace individually suited to them, rather than trying to suit the pace of a larger group.

2.11.2 Interview Preparation

Before considering which digital features would be most useful, key content for job interview training must be considered. Whilst Meyer (1999) focuses mainly on preparation for a job interview, emphasis is placed on the relevance of listening actively and offering direct concise answers. Candidates also need to be reminded not to assume that they have the job. Indeed, Galassi & Galassi (1978) recommend preparing candidates for not getting the job as part of the four phases of the interview preparation process for educators:

These four phases are:

1) Developing Realistic Expectations;
2) Developing Interviewing Skills;
3) Using Effective Training Procedures;
4) Preparing for Rejection.
Gray (2011) includes the following points as some of the key contributors to interview success, emphasising that preparation is critical:

- Image and non-verbal communication;
- Research the company and the job;
- Understanding what employers are looking for;
- Handling difficult questions;
- Overcoming confidence issues;
- How to manage nerves and stress.

Bolles (2012) provides tips for interview preparation including highlighting the importance of preparation and research, and the importance of the candidate pointing out how they can benefit an organization.

Hill (1999) discusses key elements of preparation including; body language, the importance of listening skills, nervousness and rehearsal.

Preparation does not guarantee success at interview but it will certainly help the learner to at least improve their interview skills regardless of whether a job offer is or is not the outcome (Kariya 2002).

2.12 Digital Content Design & Considerations

Adult education is changing in terms of accessibility, freedom and choice but choosing appropriate technology for the learning situation is fundamental for success (Sargent 1997).

Chalmers (2003) suggests that educators should not assume that learning theories applied to traditional learning methods can be applied automatically to digital learning, and that HCI design can depend on consideration of the following:

- Schema Theory — organizing of the learning into units;
- Cognitive Load — the amount of information processing expected of learners;
- Retention Theories — the amount of knowledge retained by learners.
Learning should be the impetus that drives the use of technology in an educational setting (Bitner & Bitner 2002). Careful consideration should be given to the mix of digital technologies used. Advanced applications are now being used alongside simple applications (Van Dijk and Hacker 2003).

Van Dijk and Hacker (2003) propose that digital applications need to be designed to appeal to as many types of user as possible. Factors such as user culture, language and identity, also need consideration.

2.12.1 Web 2.0 Technology

Defining Web 2.0 suggests that using a mix of technologies, for example, blogs, wikis, and podcasts can facilitate sharing and editing of information to create online communities of learning (Anderson 2007). Today’s learners are assumed to be digital natives accustomed to multitasking whilst using digital technology, and ready for learning to be delivered flexibly. Thompson (2007), on the implications of social networking, blogs and other technologies, highlights that using Web 2.0 tools can be leadership and organization based, not just learner based.

Redecker et al (2009), discuss the impact of web 2.0 on learning innovations in organizations. The importance of teachers obtaining good qualifications is highlighted along with continuous professional development. Collaboration between schools, local work environments, work-based training providers and other stakeholders is also emphasized as crucial in facilitating the use of Web 2.0 tools.

Web 2.0 can enable the adult learner to be at the centre of the learning experience rather than the educator or the institution (Kop 2008). The adult learner that is familiar with web 2.0 technology can have a significant role in developing educational digital content. The adult learner can collaborate with the educator to determine suitable content levels and to choose appropriate communications tools for a digital lesson.

However, sanctions are often imposed against the use of Web 2.0 tools in some educational institutions, often making educators reluctant to use such tools due to safety concerns. The use of social networks such as YouTube or search engines, for example, is often blocked by content filters. Redecker et al (2009) outline guidelines for student safety albeit aimed mainly at younger adults, citing an example from the University of Cambridge successfully creating online academic communities for students and staff.
Redecker et al (2009) propose the following as factors for the success of using Web 2.0 in education:

- Adequate and stable technical infrastructure;
- Organisational and financial support;
- Targeted use and tailored integration, respecting learners' needs;
- Well-structured online environments;
- Critical mass of content and users and regular updates of the environment;
- Teachers should adopt new roles.

Developing educational digital content may not be solely dependent on an educator having a computer with internet access. Kozma (2005) argues that building digital infrastructure at a national level can prove difficult in developing and poorer countries. Educators therefore need to collaborate with learners and institutions, whilst ensuring that their learning content is up to date.

2.12.2 Human Computer Interface

Human Computer Interface or HCI is a term referred to frequently when designing digital content in education. “Human-computer interface is defined as the point of contact between the computer and the computer user” (Chalmers 2003). Fetaji et al (2007) define HCI as “how people interact with computing technology and how a computer system is designed more easily, more practically, and more intuitively.” This suggests that digital content must be user friendly and doesn’t distract users from the content. Understanding how to design an effective HCI is therefore pertinent to educators.
Guidelines given by (Fetaji et al 2007) advise taking the following points into consideration for HCI design:

- Define the users;
- Anticipate the environment in which the program will be used;
- Give the operators control;
- Minimize the operators' work;
- Keep the program simple;
- Be consistent;
- Give adequate feedback.

Whilst Fetaji et al (2007) do not refer specifically to adult learning theories in the context of HCI design; developers are reminded to give consideration to the "styles of learning of the users". This can imply that adult educators take learning theories into consideration along with HCI design guidelines when developing digital learning resources.

When contemplating using digital resources in the classroom the educator must consider the potential learning outcomes and the learning value of using such resources. Berk (2009) notes the relevance of taking multiple intelligences (Gardner 1983) into consideration when choosing multimedia content.

Chalmers (2003) also highlights the importance of "screen design" in terms of layout, consistency, colour, spatial display and organisational methods. Developers of computer assisted instruction must consider the significance of appropriate HCI design.

Overall literature suggests considering factors such as technological developments, learning theories and learning outcomes, for HCI design. Educators have to collaborate with others to successfully achieve this.
2.13 The Future

2.13.1 Adult Education

In Ireland, the numbers participating in education and training are set to increase due mainly to labour market factors such as unemployment. (Ireland, Department of Education and Skills 2013). Digital competence is viewed as a key skill in the knowledge society, for working, leisure and communication, and the lack of digital skills can be viewed as a driver of poverty in Europe (EU Skills Panorama, 2012). Fifty three per cent of individuals in the EU need digital skills for work. However, 43% consider their ICT skills insufficient to look for a new job (EU Skills Panorama 2012). It is reckoned that the digital skills of the workforce are improving with the arrival of digital immigrants and the retirement of older workers less familiar with ICT (EU Skills Panorama 2012).

The first phase of the National Digital Strategy has been announced (Ireland, Department of Communications, Energy and Natural Resources 2013). The overall aim of the strategy is to help businesses expand their operations online. It is also envisaged that digital education programmes would be developed and made available for all learners.

Henschke (2011) recognises “that andragogy has much to contribute to the future of adult education” and proposes that a discussion of andragogy should include theorists other than Knowles (1980).

Isenberg & Glancy (2011) propose a framework (Figure 2.3) to integrate the principles of adult learning with digital learning. The adult learner will initially need instructor support and eventually become self-directed.

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**Figure 2.3 A Conceptual E-Learning Framework, Isenberg & Glancy (2011)**

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Prensky (2001) proposes that educators should change their teaching styles to ensure that various levels of learners’ digital skills will be included.

2.13.2 Education Systems in the Future

In order to visualize an education system of the future, Yamamoto & Karaman (2011) suggest that one must first avoid looking at the system by which they were educated and focus on the objective of the education. The educator can then research appropriate technology to suit both the goals of the education and their learners’ needs. Mobile technology is making it possible to educate people with internet access almost anywhere. Technological developments in general should not be ignored as more new technologies will continue to be developed in the future (Yamamoto & Karaman 2011). This can prove challenging for educators working with adult learners, however, new technologies need to be adopted.

Digital tools are often adopted more rapidly by young people and some older people (Yamamoto & Karaman 2011). However, current education systems frequently do not know how to use, or indeed, how to limit the use of such tools (Yamamoto & Karaman 2011). Debate continues around allowing the use of online tools in the classroom, such as YouTube for example.

It is proposed that in the future education can have two components—a distance learning component and a traditional component (Yamamoto & Karaman 2011). Education systems evolve so therefore educators need to adapt their approach to using and keeping up to date with technologies (Yamamoto & Karaman 2011), (Bitner & Bitner 2002).

Merriam et al (2007) encourage educational organizations to “foster learning communities” by welcoming both change and innovative ways of educating.

2.14 Summary of Literature Review

Access to a digital resource for teaching job interview skills could prove beneficial, if developed with learning theories taken into consideration. Appropriate content must be developed using suitable technology whilst being mindful of adult learners’ needs.

Adult education generally appears to be diverse with adult learners having several options to choose from. In a very competitive jobs market, job seekers tend to look for
the best training available to maximise their chances of having a good education and subsequently obtaining employment.

Whilst the digital divide exists, the availability of digital technology and internet access in Irish homes is increasing all the time.

According to the literature discussed, the creation and integration of digital education cannot be done solely by educators; it must be a collaborative effort. The role of the educator may well be evolving to that of a facilitator collaborating with parties involved. Educator cognisance of learning theories can prove effective in contributing to the successful development of appropriate digital content in adult education.

Barriers to the integration of digital technology into adult education exist. However, through collaboration these can be overcome.

With these conclusions in mind it is envisaged to create a digital resource for use in an adult education setting. This digital resource will be used to assist adult learners to prepare adequately for a job interview. The focus of the project will be on the roles of those involved in the adult education process namely, the learner, the educator and education management.

The next section will outline the research methodology used for the project.
Chapter Three - Methodology

3.1 Introduction

This aim of this chapter is to outline the research methodology used for this study. The research questions for the project will be presented. The background to the research will then be outlined followed by a presentation of the research setting. The aims, objectives and development of digital content used for the study will then be outlined. Research methodologies considered for the study will be discussed alongside the rationale behind the selected research methodology. An account of how data was collected and of data analysis techniques used will then follow. Reliability and validity of research methods utilised to address the research questions will then be presented. The chapter will conclude with ethical considerations addressed within the context of this research.

3.2 Research Questions

Based on the literature review, the research methodology for this project will address:

- How does the use of digital technology affect the role of adult learners?
- How does the use of digital technology affect the role of the adult educator?
- How does the use of digital technology affect the role of management?

3.3 Background to the Research

The use of ICT as a teaching aid has been integrated into all types of educational settings for some time, and adult education is no exception. In a typical adult education setting, an educator can be presented with a group of learners with mixed levels of ICT skills, ranging from beginner level to those with several years of ICT experience. This scenario can prove challenging to learners, educators and education management alike.

In Ireland, the current recession has resulted in increased participation in adult education and training. Employment is generally scarce and learners are keen to be educated to the highest possible level in preparation for the competitive labour market.
3.4 Research Setting

The setting for this research project is a Further Education Centre (FEC) in the midlands. The centre is currently staffed by a Centre Director and twenty seven full-time and part-time staff. During the current academic year (2012/2013), 120 learners are enrolled.

Courses provided at the FEC include: Junior Certificate, Leaving Certificate, Vocational skills Training and Post Leaving Certificate (PLC) courses. The centre provides three PLC programmes,

- Business Admin/Secretarial (ECDL and FETAC);
- Art, Craft & Design, (FETAC);
- Nursing Studies, (FETAC).

Level 5 Communications (FETAC 2012) is a mandatory core module on each course. To complete this module successfully learners have to achieve eleven learning outcomes. For the purpose of this project the focus will be on learning outcome four, which involves demonstrating a range of verbal skills including interview skills (FETAC 2012).

3.5 Digital Content

3.5.1 Introduction

Digital content was developed based on principles of HCI design and theory on interview skills. Three lessons in PowerPoint 2010 format would be available on a Wordpress website along with links to relevant online content.
3.5.2 Rationale for Choice of Software Used

A group of six adult learners were invited to pilot various formats of digital lessons developed by the author. An outline of limitations reported are presented in Table 3.1.

<table>
<thead>
<tr>
<th>Application</th>
<th>Limitations Found:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adobe Captivate</td>
<td>File sizes too big. Compatibility issues.</td>
</tr>
<tr>
<td>Google Sites</td>
<td>File sizes too big to upload. Lack of visual appeal.</td>
</tr>
<tr>
<td>You Tube</td>
<td>Blocked by some local area networks.</td>
</tr>
</tbody>
</table>

Table 3.1: Findings of the Pilot Group

Wordpress was finally chosen by the pilot group due to its visual appeal and ease of use. It was also envisaged that principles from some of the learning theories discussed in the literature review would be applied, namely; andragogy (Knowles 1980) and experiential learning (Kolb 1984), Bennet et al (2007). Self-directed constructivist learning would occur whereby learners could revisit parts of the lesson where necessary.

3.5.3 Software Design Methodology

Using findings from the literature, a digital lesson on interview skills was developed. The main purpose of the lesson was to prepare the learners for a job interview. The lesson would address interview preparation and techniques for answering questions. Post interview advice would also be included in the lesson. The digital lesson was divided into three sections:

- Before an Interview – addressing how to prepare;
- During an Interview – answering questions;
- After an Interview – what to do on completion.

Microsoft PowerPoint 2010 was chosen as the tool to deliver the digital lessons. Files created using Microsoft PowerPoint are usually within the file upload limits for several types of websites. PowerPoint is also generally compatible with most operating systems thus minimizing the chances of technical issues arising. In order to ensure compatibility with as many versions of presentation software as possible, files were saved in
Microsoft PowerPoint 1997 – 2003 formats. The lessons were then converted to Portable Document Format (PDF) and subsequently uploaded onto the dedicated Wordpress site http://hetty.student.cdi.ul.ie (Figure 3.1).

![Figure 3.1: The homepage](image)

### 3.5.4 Wordpress Site Design

The Wordpress layout template *Desk Mess Mirrored Version 2.2* was selected due to its visual appeal and ease of use for the learners. The homepage contained links to the three interview skills lessons, and to a blog section where learners had the option to post comments on their experiences or queries on job interviews. Comments could only be allowed on the blog if they were approved by the site moderator. A hyperlink to the learner’s survey was also provided on the homepage (Figure 3.1).

### 3.5.5 Interview Lessons Design

Content was created using appropriate text, audio narration and hyperlinks to relevant online material. Commentaries were recorded and added using the narration feature in Microsoft PowerPoint 2010. Adobe Photoshop was used for editing images which were subsequently uploaded on to the PowerPoint slides. Lessons were converted to Adobe PDF files and uploaded on to the appropriate page on the Wordpress site (Figure 3.2), (Figure 3.3).
3.5.6 Limitations of Software Used

The maximum upload file size for Wordpress websites is eight megabytes. Video files could not be uploaded due to their large file size. Consequently, videos were uploaded on to the author’s Vimeo account and hyperlinks to these were provided on the lesson.
Issues also arose around playback of audio clips and using navigation buttons on the PowerPoint Slides when launched on Wordpress. These features would not function properly when uploaded, so as to surmount this they had to be removed and the site altered accordingly.

As all the digital content was online – internet connectivity was a necessity for all participating adult learners. Software also had to be continually reviewed and revised to ensure compatibility with as many digital devices as possible.

3.6 Research Methodology

Potential research methodologies were investigated by the author to ascertain their suitability for the project. The next section will outline an evaluation of research methodologies considered for the project, followed by justification of the chosen methodology.

3.6.1 The Action Research Approach

Literature reviewed on action research reveals several definitions, originating with Lewin (1947). An action research approach involves performing research activities whereby the practitioner learns from their experiences (Krogh 2001), consequently improving their practices (Corey 1954). The success or failure of an action research project can depend on the collaboration of those involved (Hult & Lennung 2007), (Lewin 1947). Action research can be viewed as an experiential learning process in itself as the researcher partakes in the implementation of the findings (Krogh 2001). Consequently, an action research project can be considered incomplete until the changes recommended from the findings have been implemented (Hult et al 2007).

From an educational perspective, action research can be used by educators to gather information and consequently to improve their practices (Parsons & Brown 2002). It can also enhance an educator’s own professional development (Mitchell et al 2009).

Action research as a collaborative effort can be difficult to co-ordinate (Corey 1954), (Hult & Lennung 2007). Researchers involved in the project need to be cognisant of being fair minded, and avoiding the use of personal prejudices, (Lewin 1947), (Kidd & Kral 2005). Whilst action research is undertaken to improve practices, the findings can be limited to the project itself. To successfully complete action research the practitioner
needs the intuition to recognise the value of the concept, to put findings into practice and to give the commitment of time to make it work (Krogh 2001).

3.6.2 The Case Study Approach

A case study describes a particular problem based on a real-life situation; it can consist of an event, the persons involved, and other impacting factors (Roselle 1996).

Case study research can be undertaken using qualitative or quantitative research, a combination of fieldwork, and observations or verbal reports (Yin 1981), (Kane & De Brun 2001). The case study can be conducted in natural settings over a set time period. A case study can be viewed as a research strategy (Yin 1981). The initial step of setting out the research question is crucial in the process to help keep the research focused (Eisenhardt 1989). Cohen et al (2007) conclude that planning a case study is fundamental.

Several advantages to using the case study approach exist. Bell & Goulding (1984) argue that a case study can capture information which can be lost on larger scale research, such as surveys. The use of the case study approach is that having conducted research on a small scale, it cannot be a suitable basis for generalization. However, it can be epistemologically in line with a researchers experience (Stake 1978).

Although a useful research tool adding to the researcher’s experience and understanding, the case study approach can have limitations. Case studies are susceptible to researcher bias (Bell & Goulding 1984).

Cohen et al (2007) emphasise that the use of the case study approach can prove challenging to demonstrate reliability and validity due to the uniqueness of the situation.

3.6.3 Selected Research Methodology

The case study approach was chosen as due to the small nature of the research project, it would enable the author to obtain a clear insight into the research questions outlined. In addition, it is envisaged that the findings would also benefit the participating FEC.

3.6.4 Triangulation

The triangulation approach to gathering data was used to ensure validity of results obtained. Kane et al (2001) define triangulation as a process whereby more than one
research technique is used to get the same information. A mix of methods such as surveys, interviews, participant observation and secondary analysis can be utilised to reinforce findings. The triangulation process can also reveal discrepancies a single method of research may have overlooked.

3.6.5 Outline of Sample Group

For the purpose of this research three groups were selected: adult learners, adult educators and management.

To ensure all learners had an equal chance of being chosen to participate, a random sample of 30 learners from the three PLC courses at the FEC was taken.

Six of the centre teaching staff participated in a focus group discussion. At the beginning of the discussion an outline of the research objectives was given. The duration of the discussion was forty minutes.

In order to obtain a management perspective, the Centre Director was invited to participate in a telephone interview. The duration of the telephone interview was forty minutes.

3.6.6 Limitations

Due to the limited size of the learner sample group, a possible limitation could be that assumptions or generalizations could not be made to the adult learner population as a whole.

With regard to the focus group the sample was likewise small and the same limitations could arise. Therefore the issue of reliability and validity of research had to be addressed.

3.7 Research Instruments Used

Using the triangulation approach, the research instruments used were:

- learner questionnaires;
- staff focus group discussion;
- management telephone interview
3.7.1 Design of Learner's Questionnaire

The learner's questionnaire (Appendix D) was devised and a series of eighteen questions were created; consisting of closed questions and a Likert scale question. The first two questions were compiled to establish learners' age profiles, and to find out which programme of study they were undertaking. Questions three to seven inclusive were devised to find out about learners' levels of ICT skills and experience. Question eight was to ascertain learners' attitudes towards ICT in general. From question nine to eleven inclusive, learning styles were addressed. The next seven questions investigated roles of the learners in the use of ICT in the classroom.

The learner questionnaire was developed using Google forms. The learners could access the questionnaire using the hyperlink on the webpage (Figure 3.4). This format was chosen as it converts data obtained to Google spreadsheet format which is available to download and save to other formats for data analysis. For the purpose of this study, it was chosen to convert Google spreadsheet to Microsoft Excel 2010.

![Survey Page with a Hyperlink to the Adult Learner's Questionnaire](image)

3.7.2 Staff Focus Group

Using findings from literature (Chapter Two, Section 2.14), a series of fourteen open-ended in depth questions was devised (Appendix F) for the focus group discussion.

The objectives of the research were stated at the outset of the discussion. The first three questions addressed teachers' current ICT skills levels and the digital tools they use.

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when teaching. These questions were designed to ascertain how staff perceived their role when integrating ICT into the classroom. Questions four and five inclusive, addressed roles of the adult educators. Questions six to nine inclusive investigated collaboration between the adult educators, their peers, and external societies such as, the Irish Computer Society. Barriers to integrating digital technology into the classroom were also discussed for question ten. The eleventh question addressed the educators' perceptions on the role of the FEC management in integrating digital technology. Question twelve asked the group to discuss how they see the role of the educator changing in the future. For question thirteen the discussion was on the educators' views on the digital interview skills lesson, querying if they could create something similar for other subjects. Finally, the group discussed using digital technology for teaching job interview skills and its use in adult education generally.

3.7.3 Management Interview

It was decided to interview the Centre Director (Appendix H). The purpose of this interview was to ascertain management views on their role in the provision of further education with digital content. Their perception of the roles of adult learners and adult educators would also be investigated. The objectives of the interview were stated at the outset. The interview investigated collaboration with ICT experts, adult learners, adult educators and management. Barriers to the use of digital content were also investigated.

3.7.4 Reliability & Validity of Research

Learner questionnaires were designed to obtain information on how the learners perceived their roles (Appendix D). Questions were closed ended to enable clear analysis and indeed to ensure validity.

The focus group discussion was conducted with six teachers in the FEC. To ensure that the objectives of the focus group discussion were adhered to throughout, a script of probe questions was prepared (Appendix F). The time limit was 40 minutes. The focus group methodology was chosen because it would be effective in encouraging participants to answer rather freely. Although it was anticipated that results could be difficult to quantify, it was envisaged that this method would obtain significant information for the scope of this project.
A series of questions was devised for the telephone interview with the Centre Director of the FEC. (Appendix H). These questions were designed to ascertain how management perceived the roles of: the adult learners, the adult educators and management on using digital content in adult education.

All three methods of research were linked in terms of content to ensure triangulation.

3.8 Data Analysis

For the purposes of statistical analysis, data obtained from the learner questionnaire was converted into a Microsoft Excel 2010 spread sheet programme. This data was then analysed and developed into suitable format for the presentation of the findings.

Transcription notes from the focus group are in Appendix G. A report was prepared outlining key points for discussion in the findings section.

Information obtained from the Management interview was also documented.

3.9 Ethical Considerations

Throughout the research project ethical issues had to be taken into consideration. During the initial stages of the project the CEO of the VEC was contacted by email (Appendix A). The email outlined the purpose of the project and how the research was to be conducted. An Adult Education Centre Director was contacted by the CEO and informed about the project. The CEO then forwarded these details to the researcher (Appendix B), who then contacted the Centre Director by email and a follow up phone call was made requesting their assistance.

Confidentiality and anonymity was assured at the outset and throughout the project at each stage of data collection. Participating learners gave written consent by signing a consent form (Appendix C). Learners were not requested to give personal details other than their age which was necessary for the purpose of the research objectives.

At the outset of the focus group discussion, participants were reminded of the objective of the research and were reassured that their identity would not be referred to in the project.

Prior to conducting the interview with the Centre Director, the objectives of the research were stated and it was agreed that the findings would be made available to the centre.
3.10 Summary

Data was collected from three groups of participants: learners, adult educators and the FEC Director. The three methodologies used were online questionnaire, focus group meeting and telephone interview respectively. The data was subsequently collated and analysed.

Findings obtained will be presented in the next section.
Chapter Four - Findings

4.1 Introduction

The purpose of this chapter is to outline the author's findings from the research conducted. Three research instruments were used to obtain data from the three groups of participants. Subsequently, the findings were collated and analysed according to their group. The results are presented by research question.

4.1.1 Overview

Responses were collected from the learners on completion of the online questionnaire (Appendix D). Six educators from the further education centre participated in the focus group discussion during May 2013 (Appendices F). The Centre Director participated in a telephone interview during the same month (Appendices H).

Section 4.2 will present a profile of the FEC and of the participating respondents. The results will then be presented by research question in section 4.3. Findings on the use of the digital lesson are presented in section 4.4.

Section 4.5 concludes this chapter with a summary of the research findings.

4.2 Profile of Research Participants

This section outlines the profile of the FEC and the profiles of the research participants:

- The adult learners;
- The adult educators;
- The Centre Director.

4.2.1 The Further Education Centre

The FEC is based in the midlands of Ireland for over twenty years. It is located on a secondary traffic route adjacent to one of the main motorways in Ireland. Local employment is generated by government offices, agriculture and local enterprises.

The centre is run under the auspices of the local VEC and in accordance with the regulations of the Irish Department of Education and Skills. On July 1st 2013, the local
VEC amalgamated with a neighbouring county VEC to form an Education and Training Board for those two merged VECs.

The centre is registered with FETAC and ECDL Ireland to offer programmes leading to awards on the National Framework of Qualifications.

Technology currently used in the centre is typical of an adult education centre; this includes: interactive whiteboards, PCs, printers and a Local Area Network (LAN). It is envisaged that the ICT room at the centre will be updated with twenty new personal computers during the months subsequent to this research.

A recent extension to the LAN is a wireless router for the art room which enables learners to use digital devices for research purposes during Art classes.

Plans are underway to develop an art based degree course in the centre by liaising with an established third level art college. It is anticipated that ICT would be integral in the delivery of this course online, for example, lectures could be delivered from the participating college itself to the FEC using digital technology.

### 4.2.2 Participating Learners

Thirty adult learners from the FEC participated in the research, completing the digital interview skills lessons and the subsequent online questionnaire (Appendix D).

The learners' research commenced in April 2013 and concluded in May 2013. The research was conducted online during Communications class when all of the participating learners had access to ICT.

All of the learners surveyed were participants in three Post Leaving Certificate Courses with 10% studying Nursing Studies, 27% studying Art and 63% from Business Studies. The age profile of the participating learners ranged from less than twenty years to less than fifty years (Table 4.1).
The learners’ number of years of ICT experience is illustrated in figure 4.1 below.

![Bar chart showing the number of years using ICT](image)

**Figure 4.1: The Adult Learners ICT Experience**

Ninety five per cent of the learners surveyed use ICT in their spare time. The learners that engaged in ICT activities in their spare time were asked to list those activities. Figure 4.2 illustrates a breakdown of the ICT activities those learners engaged in during their spare time. Social networking was found to be the most popular with the participating learners.

<table>
<thead>
<tr>
<th>Age in Years</th>
<th>Percentage of Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 20</td>
<td>17</td>
</tr>
<tr>
<td>20 – 30</td>
<td>40</td>
</tr>
<tr>
<td>30 – 40</td>
<td>23</td>
</tr>
<tr>
<td>40 – 50</td>
<td>20</td>
</tr>
<tr>
<td>50 – 60</td>
<td>0</td>
</tr>
<tr>
<td>Greater than 60</td>
<td>0</td>
</tr>
</tbody>
</table>

**Table 4.1: Age Profile of the Adult Learners**
What do you use the computer for in your spare time?

- Social Networking: 11%
- Listening to Music: 11%
- Watching videos: 25%
- Emailing: 46%
- Reading online: 11%
- Buying goods and services: 3%

Figure 4.2: The Adult Learners’ use of Computers in their Spare Time

On investigating the factors that prevented learners from using computers at home it was found that the majority of respondents stated cost, followed by not enough experience. Lack of internet access at home was given by seven per cent as a barrier (Figure 4.3).

Figure 4.3: Barriers to Adult Learners using Computers in their Spare Time
Learners were requested to list the digital devices that they were capable of using. A choice of devices was presented to the learners:

- I pad or tablet pc;
- Smartphone;
- Video Camera;
- Digital Camera;
- Other device(s), for example, games consoles, and mp3 players.

Each participating learner had to select devices from the list that they were able to use. It was found that all thirty of the learners were able to use one or more of the devices listed. A breakdown of their responses is illustrated in Table 4.2 below.

<table>
<thead>
<tr>
<th>Quantity of digital items learners can use:</th>
<th>Percentage of Learners:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>47%</td>
</tr>
<tr>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>3</td>
<td>13%</td>
</tr>
<tr>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>1</td>
<td>13%</td>
</tr>
</tbody>
</table>

Table 4.2: Digital Devices the Adult Learners are able to use

4.2.3 Participating Educators

The educators’ focus group meeting took place in a dedicated room in the centre with just those involved in the discussion present. The duration of the focus group meeting was forty minutes (Appendix G).

At the beginning of the meeting a profile of the participants was obtained. All participating educators were teaching learners on the level five PLC courses.

The age range of the participating educators varied from thirty to over sixty years. All of the educators participating had a number of years’ experience in adult education ranging from five years to twenty years.
The focus group discussed their use of digital tools. The tools listed as available to them in the centre included:

- Moodle.
- Blogs.
- Wordpress.
- Microsoft Word.
- The Internet.
- Interactive White Board.
- Spread Sheets.
- YouTube.

The adult educator focus group were then asked which of those digital tools they currently use to aid them when teaching. It was agreed by the group that the following digital tools were mostly used by educators at the centre:

- Moodle.
- The Internet.
- Interactive White Board.

A list of digital tools that the adult educators would consider using in the future included:

- Camtasia.
- Adobe Captivate.
- Online forums.
- Social Media.
- E-Books.
The group indicated that they would also like to optimize the use of virtual learning environments at the FEC. Uploading quizzes and other class materials onto Moodle were examples given.

Educators' levels of ICT skills generally ranged from basic skills to expert level. Some of the educators used ICT occasionally when necessary, whilst one of the educators was an experienced ICT teacher, teaching ECDL at the centre. This person was frequently relied upon by the educators for minor troubleshooting and ICT advice.

4.2.4 The Centre Director

After correspondence by email, a telephone interview with the Centre Director was arranged and conducted on an agreed date and time. The duration of the telephone interview was 40 minutes (Appendix I).

The Centre Director has seven years of experience in their current role. The Centre Director is in charge of 15 full time staff, three part time staff, one hundred and seventy full time learners and 30 part-time learners.

Based in the FEC itself, the main role of the Centre Director is to coordinate the centre itself and manage staff and learners there. On the use of ICT in their role, the Centre Director stated: “Using ICT is integral on a day to day basis in the Centre Director’s role. For example, ICT is necessary for the completion of tasks such as emailing, word processing, database management and financial reporting” (Appendix I).

Another key role of the Centre Director is to liaise with the local VEC, the Department of Education and Skills, and other relevant agencies for tasks, such as for example, reporting, administration and for processing tenders.

4.3 Findings by Research Question

This project set out to explore the following research question, namely, how the use of ICT in adult education affects the roles of:

- Adult Learners;
- Adult Educators;
- Management.
4.3.1 How does the use of digital technology affect the role of adult learners?

In this section the findings are presented from three perspectives: the adult learners themselves, the adult educators, and the Centre Director.

4.3.1.1 The Learners’ Perspective

When asked if they would like to be involved in selecting digital content for a class the majority of learners (73%) responded that they would. Advice from experts in different career areas in preparing the lesson was viewed as beneficial by 97% of the participating learners.

The learners were asked how they perceive the role of the teacher; on being given four options:

- Supervisor;
- Facilitator;
- Support;
- Guide.

Figure 4.4 illustrates the breakdown of their responses. A majority of learners (46%) viewed the role of the educator as providing guidance followed by 30% of learners viewing the role of the educator as that of providing support for minor technical issues, for example, if a learner was having trouble with internet connectivity.
Following this the learners were then asked about which aspects of the digital lesson they had to get assistance with from their teacher (Figure 4.5).

![In which areas had you to get assistance from your teacher?](image)

**Figure 4.5: Aspects where Learners needed Assistance**

A majority of learners (57%) viewed their role as doing their coursework as well as helping other learners during the lesson. The remainder of adult learners viewed their role as doing their coursework only (Figure 4.6).

![How did you view your role during the lesson?](image)

**Figure 4.6: Adult Learners' Views on their Role**
4.3.1.2 The Adult Educators' Perspective

As part of the focus group discussion the adult educators were asked if the adult learners could contribute to the preparation of digital lessons. Key points raised by the group were:

- Younger adult learners are often more confident with using digital technology.
- Younger adult learners often have ideas about useful digital resources, for example, freeware, or hardware;
- The educator is responsible for lesson preparation ensuring all learning outcome requirements set out by FETAC guidelines are met. Feedback from learners on lessons, however, can be crucial.

4.3.1.3 The Centre Directors' Perspective

The Centre Director perceives the role of the learners as vital, noting that learners can be the driving force in the class.

A recent example of this in the FEC is an art project for which students used digital technology to create an online campaign portraying the life of the centre. Learners were issued with a brief and then used available digital technology to complete the project.

Participating staff were open to collaborating with learners during the development of this particular digital project.

4.3.2 How does the use of digital technology affect the role of the adult educator?

Although the number of adult educators participating in the focus group was small the findings obtained were significant.

After obtaining a profile of the group, the educators discussed how they perceived their role prior to delivering a class with digital content. The group stated that their roles are mainly as researchers and as educators in the preparation of content for a particular class.
The role of the adult educator during a digital lesson was then discussed. It was agreed by the participants that the role of the educator was mainly as that of a facilitator:

- "A facilitator of the subject"
- "Encouraging self-directed learning"
- "Facilitating discussion and encouraging peer learning"

The focus group also stated that if more digital content was used during their classes that it should be possible for them to give more individual attention to learners when necessary.

Currently, when the educators need technical support or advice they collaborate and try resolving the situation locally at the centre. If a technical issue cannot be resolved, the educators avail of support from the VEC ICT support officer. The ICT support officer is made available from the local VEC Head Office to support all VEC/FEC centres within the county.

On discussing support when sourcing and creating digital content, teachers stated that they rely mainly on the expertise of one educator within the centre itself.

All of the educators agreed that learners could contribute to preparing digital lessons, as most of them had sufficient ICT skills to do so. Currently, learners do collaborate with other learners mainly and with the teachers on some occasions. The collaboration occurring mainly is for troubleshooting with hardware and for addressing how to complete certain tasks on software. Learners have also sourced some useful digital materials for the teachers on occasion.

On investigating collaboration with external ICT support groups, it was found that one teacher was a member of the Irish Computer Society; the remainder were not involved with any expert ICT group.

The group felt that cost and technical know-how are barriers from sourcing support externally. It was agreed that they will investigate this further in their own time.
On discussion of the barriers that prevent the teachers from integrating technology into the classroom, a range of factors were highlighted including:

- Cost – software such as Adobe Captivate, for example, is quite expensive.
- Insufficient ICT skills and/or experience.
- Insufficient in-service training – possibly due to the cost.
- Current workload.

In relation to workload, teachers said “we are busy here with FETAC modules getting work done and it is hard to get the time to learn and try out new technologies”. Another reason given was the almost immediate preparation for state exams after FETAC deadlines. “We also work with students getting ready for the Leaving Certificate exams, so when FETAC is finished we are straight into the final stages of preparing students for sitting their Leaving Certificate exams” (Appendix G).

The adult educators’ focus group indicated the following key attributes as necessary for the integration of digital technology into a particular lesson:

- Confidence;
- Technical Knowledge.

Educators didn’t want to have to worry about troubleshooting during class. Instead they wanted to have the confidence to resolve minor technical issues and resume the class as normal.

The focus group perceived the role of management as primarily, at a decision making level with regard to ICT budgets, tenders etc. ICT requirements would be sourced and recommended by staff. However, VEC management would have the final decision for the FEC.

The entire group agreed that their roles as adult educators would change due in the future to the use of ICT in the classroom.
The following are the key points extracted from the discussion:

- Digital technology will be more integrated into adult education;
- Some classes or courses provided by the centre will be online;
- Classes will have a blend of digital technology, for example; tablets and e-books;
- Learners will be attending online webinars on a central hub;
- Web 2.0 will possibly have a future version, enabling those using it for educational purposes, to extract quality information.

The Centre Director feels that the role of the adult educator has changed due to the use of ICT. The Director has noticed that adult educators have changed their approach and are using ICT to source more resources for their subjects. Resources can now be sourced online and incorporated into class. The adult educator has a key role to play in researching and choosing appropriate digital content for their classes.

4.3.3 How does the use of digital technology affect the role of management?

From the perspective of the Centre Director, management has several roles in the integration of technology into adult learning:

- Ensuring an appropriate ICT infrastructure is put in place initially;
- Encouraging and supporting staff on the integration of new digital technology for example, by providing training and facilitating peer learning;
- Supporting access for learners by ensuring that timetables incorporate sufficient access to ICT facilities at the centre.

The role of management in integrating digital content into classes was also discussed as part of the educator focus group. The overall view was that the role of management was to budget, source and organize relevant ICT including hardware, software and training. An example given was interactive whiteboard technology and training sourced by management, which all of the teachers had to attend during the past year.
Three key barriers to integrating digital technology were highlighted by the Centre Director:

- Finance;
- Staff;
- Time.

Budget constraints are one of the main barriers to the integration of new technology in the FEC. Along with that not all staff are inclined to use ICT; for example, it took approximately one year for all centre staff to be able learn how to use email effectively. Another example was, when courses were provided to enable staff to learn to use the interactive white board. Some staff adapted to using the technology immediately whilst others took longer. Time is also viewed as a barrier, as due to the heavy workload educators can have insufficient time to adapt to new technology.

Collaboration on the use of ICT in the centre is encouraged by the Centre Director. Currently teachers collaborate on minor ICT issues as they arise in the classroom.

An ICT officer is available from the local VEC office to support the centre when necessary. Their main role is - to source appropriate hardware and software, and to give technical advice. The ICT officer is also responsible for liaising with management for the tendering out of ICT services for the centre and for the local VEC.

The VEC ICT officer who operates at county level is consulted when ICT advice is needed for the centre as a whole. The local teachers centre and another local VEC college can also be consulted. The association for VTOS co-ordinators can also be consulted by the Centre Director as the centre is part of VTOS.

At present the FEC is affiliated to one external ICT group which is the Irish Computer Society.

Currently there is no official ICT team or working group in the centre. The Business Studies and Art teachers bring their ICT based ideas to staff meetings and report details and updates on these projects. The ICT tutor, based in the centre is called on to support other teachers there when necessary.
4.4 Digital Content Findings

4.4.1 Learners’ Findings

In order to ascertain the learner’s views on the statement “Technology may be viewed as essential in learning and communication nowadays” a Likert scale question was administered. The learners ranked their answers on the scale from one to five indicating their level of agreement or disagreement with the statement, one being “strongly disagree” and five being “strongly agree”. As this question was mandatory the learner response rate was 100%.

Thirty three per cent of the learners strongly agreed with the statement with 27% ranking the statement at four on the scale. Seven per cent of the learners strongly disagreed with the statement.

Learners were asked to rate the features of the job interview skills lesson they found most useful. The purpose of this question was to ascertain how useful the learners found aspects of the digital content as well as to address their learning styles. Question nine of the learner questionnaire asked learners which features of the digital interview skills lesson they found most useful. Figure 4.7 illustrates the responses indicating that the mix of content such as text and videos was equally as useful as the learners being able to work at their own pace.

![Pie chart showing the responses to which features of the job interview skills lesson were found most useful.](image)

Figure 4.7: Most Useful Features of the Digital Lesson
The adult learners were asked if they would like to see more digital content in the interview skills lessons. The results are presented in Table 4.3, indicating that the majority of learners would like to see more digital content.

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage of Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>88</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 4.3: Responses from the Adult Learners on Digital Content

The adult learners who indicated that they would like more digital content in the lesson were invited to proceed to a question which asked them to list the type of content they would like included. The responses are presented in Figure 4.8.

![Types of Digital Content Learners would like added.](image)

Figure 4.8: Responses from the Adult learners on Digital Content.

A majority of learners (77%) stated that they would prefer a digital lesson to using traditional learning methods such as using handouts or books.

Ninety three per cent of learners indicated that they would like to access the digital lesson for revision before attending for a job interview.

### 4.4.2 Educators' Findings

During the focus group meeting the educators were asked to discuss observations they made on the digital content used to teach job interview skills.
The group felt that operating the digital content itself proved generally straightforward once the educators were given the link. Issues arose around navigation and the presentation of the site layout. The educators felt that it would be necessary to be familiar with the lesson layout and content before using it in class, in order to deal with queries during class.

The group outlined the following ICT skills as useful in order to effectively use digital content in class:

- Internet search skills; using search engines effectively;
- Basic ICT technical skills;
- Using presentation software;
- Uploading content, playback of content etc.

The importance of educator awareness of learners' needs, goals and abilities when developing digital content was also highlighted. For example, if a learner had literacy issues, a digital lesson may need narration or having a screen reader built in. The digital lesson could be prepared by the educator in collaboration with the adult learner.

It was agreed that the initial creation and set up of a digital lesson could be time consuming. However, in time preparing a digital lesson would just consist of updating content when necessary.

4.4.3 Centre Director Findings

Using the digital content in class would call for collaboration between educators and learners. However, creating a digital lesson could prove challenging for some educators who are less experienced in using ICT.

Digital content would need to be tested and checked before using it in class for compatibility with operating systems. The Centre Director felt that the educator would have a key role in vetting content for use in a digital lesson.

The Centre Director viewed the use of digital technology in teaching interview skills as very useful. Initially, developing a digital lesson can take up a significant amount of
time. However, digital content can be updated or edited all the time once the initial setup is complete.

4.5 Summary

This study highlighted a number of key findings on how the use of ICT affects the roles of three key players in adult education: learners, educators and management. Overall all the three groups agreed that using digital technology in the classroom is beneficial to adult learning.

All three groups of participants agreed that collaboration is important for the effective use of digital content in the centre. Roles are evolving, learners can be more involved in creating digital lessons, and teachers need to be more involved.

It was found that participating adult learners have ICT skills which can be of benefit to the centre. Adult learners want to use digital content with some reporting that they would like to be involved in creating digital content. It can be possible to accommodate learning styles effectively through the use of digital technology. The role of external ICT experts and peer groups is perceived as useful and would merit further investigation in the future for the FEC itself.

Barriers exist to the integration of more digital technology into the centre. The main barriers found were finance and time constraints due to workload. However, all of the participants agree that digital technology is an essential ingredient in adult education. Adult learners have a significant role when digital technology is used in classes. Management and adult educators have substantial roles when integrating digital technology into adult education.
Chapter Five - Discussions of Findings

5.1 Introduction
This chapter discusses the research findings in light of the literature reviewed. The discussion will be presented by research question and will examine how this case study relates to existing research and knowledge in this field.

5.2 Discussion of Research Findings

5.2.1 How does the use of digital technology affect the role of adult learners?

According to literature reviewed, the adult learner should be at the centre of the learning process (Knowles 1980). It was also found that the White Paper reiterates this view (Ireland. Department of Education and Science 2000).

Findings from this study show that during the digital lesson 57% of adult learners viewed their role as doing coursework as well as assisting other learners. The remaining 43% viewed their role as doing their coursework only. Brown (2006) asserts that the role of the learner in the future to be that of “knowledge navigation”. However, it was also found that seventy three per cent of adult learners surveyed would like to be involved in the preparation of digital content for use in class. Similarly, Kolb (1984) views the learner’s role as active in their education rather than passive.

In this study, the adult educators’ focus group raised the point that younger adult learners are more confident in the use of digital technology noting that the adult learners often have useful ideas about suitable digital resources. The research also revealed that the adult educators viewed feedback from their learners as crucial.

The views of the Centre Director concurred with the adult educators, citing an example of the digital art project: “The role of the learners is vital when using digital technology in class; they can often be the driving force in the class” (Appendix I).

Therefore the role of the adult learner is:

- To learn:
- To be involved in the planning and the preparation of their learning.
5.2.2 How does the use of digital technology affect the role of the adult educator?

Literature revealed that the role of the adult educator requires consideration when using ICT in adult education (EAEA 2006). In fact, Prensky (2001) recommends adult educators change their approach to accommodate effective learning, likewise Merriam et al (2007) advise educators to adapt their approach to the learning situation. However, literature also revealed that it is crucial for the adult educator to understand adult learners’ needs to enable effective education (Knowles 1980).

In this study it was found that forty six per cent of the participating adult learners perceived the role of their educator as that of a facilitator providing guidance during the digital lesson. This notion is reinforced by literature findings, asserting that the role of the educator is to provide direction (Gitterman 2004).

Similarly, Brown (2006) asserts that the role of the adult educator has evolved from giving instruction to “learning facilitation” at present and in the future it will be that of “coaching and mentoring”. Interestingly, it was found that 30% of the adult learners perceived their adult educator’s role as that of providing support for minor technical issues.

In contrast, this study found that the adult educators viewed their role as mainly that of research and preparation of digital content, for example Teacher E stated: “Research and lesson planning”. The adult educators’ group viewed input from adult learners on digital technology as useful, reporting that adult learners have helped source digital materials on occasion (Appendix G). However, the group emphasised that ultimately the adult educator is responsible for ensuring that all learning outcomes specified by FETAC are met: “making sure that FETAC guidelines are being followed” (Teacher C, Appendix G). Literature indicates that the implementation of ICT in the classroom can depend on the educator Bitner & Bitner (2002); successful implementation can be viewed as meeting curricula and learner goals. Likewise, literature also revealed the significance of using appropriate digital technology to make adult education more effective in engaging adult learners (Wagner et al 2000).

Cercone (2008) views the role of the educator as that of a “change agent” constantly adapting to new technologies in their classroom. Likewise Redecker et al (2009) advise educators to keep their digital skills up to date. Equally, the Centre Director stated that
"the role of the educator is to use technology to research appropriate digital content for classes" (Appendix I). Similarly, literature suggests that innovative teachers are important when integrating digital technology into education (Drent & Meelissen 2007). In comparison, the educator focus group listed digital tools they would like to use in the FEC in the future, indicating that they accept digital technology as integral in adult education. Interestingly, Yamamoto et al (2011) advise educators to keep abreast of developments in digital technology. The findings from this study highlight the necessity for the adult educator to source the relevant digital resources for the learner. The adult learner will then use these resources as they see fit.

These findings indicate that when using digital technology that the role of the adult educator is to:

- Identify adult learners’ needs;
- Support and involve adult learners in their learning;
- Source and prepare digital content for use in classes;
- Adapt to new digital technologies;
- Ensure adherence to curriculum guidelines.

5.2.3 **How does the use of digital technology affect the role of management?**

In the literature reviewed networking between adult education providers locally and internationally is encouraged by the EAEA (2012) and by the European Commission (2012b). In this study it was found that the Centre Director viewed the role of management as being responsible for ensuring that an adequate ICT infrastructure is in place. The Centre Director also viewed the role of management as sourcing and facilitating training and peer learning. Another role of the management is to ensure that timetables incorporate sufficient access to the ICT facilities at the FEC (Appendix I).

The research findings also revealed that the adult educators also viewed the role of management primarily as having a decision making role for the acquisition of digital technology. This included budgeting, sourcing relevant ICT and training (Appendix G). For example, the Centre Director and the VEC had organised interactive white board training for the educators during the previous year.

Literature findings also highlighted the significance of collaboration, with the White Paper (Ireland, Department of Education and Science 2000) echoing this by
recommending the creation of adult learning boards. The Centre Director reported that collaboration also exists between the FEC and a local VEC college whilst the Centre Director occasionally consults the Association for VTOS co-ordinators. An ICT officer from the local VEC is available to help source suitable digital technology and to give technical advice. The findings revealed that a key role of the Centre Director is to liaise with the local VEC, the Department of Education and Skills and other agencies for reporting, administration and for processing tenders.

Therefore findings highlight that the role of management is as a key collaborator; linking adult educators, adult learners, and education providers together when using digital technology. On July, 1st 2013, the Education and Training Boards Act 2013 was implemented on 1 July 2013. This structural change abolished VECs and established 16 Education and Training Boards (ETBs). This may have further impact on structuring collaboration for the FEC. Since the research was conducted the local VEC has merged with a neighbouring VEC.

Therefore when using digital technology in adult education the role of the adult education management is to:

- Ensure that adequate ICT infrastructure is in place;
- Facilitate collaboration between all parties involved in digital learning.

Further findings on the significance of collaboration will be discussed in the next section.

5.2.4 Collaboration

Findings from literature revealed that the adult learner needs to be involved in the learning process Kolb (1984). Interestingly, the learners at the FEC want to be involved. Similarly, findings from literature revealed that collaboration can even affect the economy (Boland 2004). Merriam et al (2007) also encourage collaboration for the creation of “learning communities”. Likewise Brown (2000) advises using digital technology to support collaborative learning.

In this case study it was found that collaboration is present in the FEC albeit, in an unstructured fashion. Currently, some adult learners collaborate with each other (57%) during class. On occasion the adult learners have even helped the adult educators
source digital resources. Collaboration is also encouraged by the Centre Director, who gave an outline of a successful digital art project recently completed at the FEC. The Centre Director attributed the successful completion of the project to collaboration between the adult learners and their educators. The Centre Director highlighted the fact that business studies and art teachers bring updates on their use of digital technology to staff meetings.

The findings on collaboration or networking outside of the FEC revealed different perspectives from the three groups of participants. Findings from the survey show that 97% of the adult learners felt that advice from experts on their own particular career choice would have been beneficial when creating the digital lesson. With regard to networking and membership of expert groups the adult educators reported that one member of the focus group was a member of the ICS. In contrast, the adult educators viewed finance and technical know-how as barriers from sourcing support from ICT experts. However, they felt this could be investigated further in the future with Teacher A stating: “it is something we should investigate and we should also see who in the local community can help,” (Appendix G).

If the educators need technical support or advice, they collaborate in trying to resolve the issue at the FEC by consulting the ICT educator present in the FEC. If they cannot resolve the issue they then consult the VEC Technical Support Officer.

Brown (2006) asserts four “role players” involved in the adult education process (Chapter 2, Table 2.1); the learner, the teacher, the instructional designer and the information specialist. The FEC has the role players, and due to the small nature of the FEC, the educator can be both the “Information Specialist” and the “Instructional Designer”. However, in the literature reviewed, Redecker et al (2009) advised educators to act as mediator between all involved in the education process. Collaboration and the assignment of these “role players” could merit further research for the FEC itself in the future.

5.2.5 Digital Skills

Literature revealed that ICT skills are essential nowadays and can even influence employability Clarke (2004). The digital skills of workers have improved over time (EU Skills Panorama, 2012). Likewise Kozma (2005) argues that digital technology

Findings from this case study showed that the age profiles of the adult learners ranged from less than twenty years to less than fifty years. Thirty per cent of the learners had greater than five years ICT experience whilst another thirty per cent had greater than ten years of experience. Ninety-five per cent of the learners used ICT in their spare time. Their main ICT activities are summarized as follows: social networking (46%), emailing (25%), watching videos (11%), reading online (11%), online shopping (4%) and listening to music (3%). Research on internet use in Ireland revealed that 45% of a group of individuals surveyed use the internet for social networking, whilst 66% of the same group also use it for emailing (Ireland, Central Statistics Office 2012b).

Research into literature found that internet access in Ireland was at 81% in 2012 (Ireland, Central Statistics Office 2012b). The number of enterprises accessing the internet in Ireland has grown (Ireland, Central Statistics 2012a). Plans are underway to for it to grow to 100% in Ireland (Kennedy 2012). Internet access is growing in Europe (Eurostat 2012). Interestingly, 95% of the learners had access to the internet in their spare time; this is reflective of the growth of internet use in Ireland.

Literature also revealed that worldwide usage of mobile internet technology will grow to 3.8 billion worldwide by 2017, by then data traffic could be equally divided between smartphone and other mobile devices such as I Pads for example (Ericsson, 2012). In comparison, findings show that almost sixty per cent of the learners surveyed were in agreement that "Technology may be viewed as essential in learning and communication nowadays". Seven per cent of the learners strongly disagreed with the statement. Interestingly, 77% of learners indicated that they preferred the digital lesson to using textbooks, whilst 93% of them indicated that they would like to reuse the lesson prior to attending an interview. Noteworthy research conducted by AONTAS (2011) reported that 42% of adult learners they surveyed deemed gaining access to computers and the internet through a course as a factor influencing their choice of a particular training course. Therefore, digital skills are not only significant for the workplace but are a factor that can encourage adult learners to take up further education.
This study found that a majority (88%) of the adult learners surveyed, indicated that they would like more digital content added and specified which type of content they would like for example more videos, or narration. Similar research prior to developing a digital lesson could be significant to adult educators as it would ensure that it meets adult learners’ needs prior to using it.

Findings from this study revealed that all of the surveyed adult learners could use at least one digital device with 47% indicating that they could use five or more devices such as I pads, smartphones, and digital video cameras. The adult learners surveyed have significant digital expertise.

Literature reviewed for this case study also revealed the significance of having ICT skills for online job seeking (Peacock 2008) and the same for social media (Costanza 2013). The EU Skills Panorama (2012) highlighted that lack of digital skills can weaken an individual’s position when job seeking, and consequently it can be a driver of poverty. Similarly, Wetzel (2009) argues that ICT skills can influence employability.

The adult educators listed the digital tools available to them in the FEC, as well as the tools they currently use. Digital tools they would consider using in the future were also listed (Appendix G). This shows they are open to using more digital technology in the FEC in the future. They also indicated that they would like to optimize the use of Moodle at the FEC. Generally the adult educators’ digital skills ranged from basic level to one educator with expert level. There is a significant reliance on this particular adult educator to assist the others.

It was found that the participating adult educators had a number of years’ experience in teaching adults ranging from five years to twenty years. Based on their observations of the use of the digital lesson the adult educators’ focus group highlighted some essential skills for using digital content in class. These digital skills included: using the internet effectively, basic ICT technical skills, using presentation software, uploading and playback of content. Findings revealed that 70% of the participating adult learners had to get assistance with the lesson. This is indicative of the importance of adequate research and preparation of digital content by adult educators. The adult educators’ focus group also felt that an awareness of an adult learner’s needs, goals and abilities would be significant when developing digital content as it would enable the educator to tailor a digital lesson if necessary.
The Centre Director views ICT as essential for their role completing everyday tasks stating: “Using ICT is integral on a day to day basis in the Centre Director’s role. For example, ICT is necessary for the completion of tasks such as emailing, word processing, database management and financial reporting” (Appendix I).

Therefore digital technology is an essential ingredient in adult education nowadays.

5.2.6 Barriers

5.2.6.1 Finance

Findings from literature similarly revealed that finance can be a barrier as keeping up to date with developments in digital technology can be quite expensive (Klecun 2008). The findings from the research conducted were similar. A high percentage of the adult learners (80%) viewed the cost of hardware and software as a barrier. Educators also cited finance as a barrier from integrating digital technology into their classrooms; this view was supported by the Centre Director. However, literature reviewed advises educators to be mindful of both costs and benefits when choosing digital technology (Sargent 1997).

5.2.6.2 Adult Educators

Literature reviewed for this project revealed that even educators can be a barrier against the integration of technology into education (Redecker et al 2009). Educators can have varying levels of ICT skills and can find it challenging to keep up to date with digital technology. This view was reiterated by the Centre Director who stated: “A person’s approach to ICT can often be a barrier”, as not all educators at the FEC are open to using ICT. An example given by the Centre Director was while some staff learned how to use interactive whiteboard technology quickly others took a lot more time.

It was found that the adult educators viewed technical knowledge and confidence as key attributes necessary for the integration of digital technology into a lesson. Interestingly, “understanding your learners” was viewed by two of the adult educators as a key attribute (Appendix G).
5.2.6.3 Digital Divide

Findings from the literature review highlighted the existence of the digital divide, with further sub categories within the digital divide (Klecu 2008). Indeed literature revealed a further divide according to user types such as entertainment users and sporadic users (Brandtzaeg et al. 2009). Likewise, it was found in the review that the digital divide can even exclude certain groups of the population from access to ICT (O’Donnell et al. 2003).

The existence of a digital divide was found at the FEC. Adult educators reported that they relied heavily on the FEC’s ICT teacher for assistance. In contrast, of the adult learner’s surveyed, a majority (87%) did not view insufficient ICT skills as a barrier, reflecting the group’s overall level of ICT skills and experience.

In this study the participating educators highlighted confidence as one of the key skills necessary to integrate digital technology into classes. Similarly in literature it was found that perceptions of ICT can be a barrier (Chinn and Fairlie 2006). However, findings indicate that overall the FEC is ready to address the digital divide within. For example, during the focus group discussion Teacher F stated: “I would like to have more confidence solving minor technical issues, instead of calling on Teacher B; it would be great to resolve something and just get on with the class” (Appendix G).

5.2.6.4 Workload

Literature reviewed highlighted insufficient usage opportunities as barriers to using digital technology Van Dijk (1999).

Research from this study indicated that workload is currently a barrier against the integration of digital technology into classes at the FEC. The Centre Director viewed time as a barrier as “staff need time to get used to technology and this can be difficult given their workload” (Appendix I). The educator focus group concurred with this view (Appendix G). Teacher D stated: “We also work with students getting ready for the Leaving Certificate exams, so when FETAC is finished, we are straight into the final stages of preparing students for sitting the Leaving Certificate exams.”
Overall, noteworthy findings revealed that: finance, insufficient ICT skills, insufficient training and current workload are barriers that prevent further integration of digital technology in the FEC.

5.2.7 Learning Theories and Digital Technology

5.2.7.1 Andragogy

Findings from literature show that the adult learners like to be involved in planning their own learning (Knowles 1980). (Ireland, Department of Education and Science 2000). The digital lesson was developed using the principles of andragogy and the theory of multiple intelligences (Gardner 1983).

Although the adult learners were not consulted during the development of the digital lesson, findings from the adult learners revealed that 73% of them would like to be involved in choosing digital content.

Therefore, it could be possible for digital lessons to be developed through collaboration with the adult learner and their educator, thereby accommodating individual learning styles. The adult educator’s focus group supported this view.

5.2.7.2 Constructivism

Literature reviewed suggests taking a constructivist approach when using digital technology in training (Kanninen 2005). Indeed, it was found that Huang (2002) advocated using a blend of adult learning theory and constructivism for online adult education. Findings from the adult learners surveyed revealed that a mix of content such as text and videos was equally as useful as the learners being able to work at their own pace. However, it was also found that the adult learners were quite specific about which type of digital content they preferred as ninety percent of them outlined the exact mix of digital content that they would like added.

Findings from the adult learner’s survey all indicated that they were particular on how they would use the lesson with 36% finding working at their own pace useful and 28% indicating being able to replay the lesson as most useful. This knowledge can be very useful to an adult educator planning a digital lesson, and will even facilitate the customisation of content where necessary. For example, adding a video file or screen reader software where the learner may have literacy difficulties.
5.2.7.3 Connectivism

Literature reviewed revealed the existence of the connectivist learning style that encompasses the use of digital technology in education (Siemens 2005). A key finding is that connectivist theories assert the necessity for the learner to discern between relevant and irrelevant information (Siemens 2005). In contrast, it was found that the adult educators' focus group discussion highlighted the importance of ensuring that lesson content guidelines were adhered to. Moreover, this finding highlights the necessity of the adult educator to evaluate the quality of digital resources.

The Centre Director also perceives the role of the adult educator as ensuring that subject requirements as set out by curricula are adhered to: "The role of the educator is to use technology to research appropriate digital content for classes. This content must be in line with curriculum guidelines" (Appendix I).

5.2.7.4 Multiple Intelligences

Findings from the literature reviewed, reveal the significance of understanding adult learners individuality. Mason (2006) outlines the importance of using digital content in engaging different types of learners. It was also found in the literature that adult learners have their own unique set of characteristics (Knowles 1980). Literature reviewed also revealed that learners have different intelligences and this can influence how best they learn (Gardner 1983).

The digital lesson used in this case study contained a mix of digital elements, such as video, images and text. The purpose of this was to ensure that the lesson appealed to as many types of intelligences as possible using digital technology. Although the participating learners were not consulted prior to the development of the digital lesson, it was found that different aspects of the digital lesson appealed to them. The results revealed that 36% found the mix of content such as text and videos useful. The findings show that rather than trying to appeal to as many adult learners as possible, it can be useful for adult educators to research and subsequently customize digital content for adult learners. This area could merit further research in the FEC in the future.

The next section will outline the implications of findings and make suggestions for further research both in the FEC and in adult education.
5.2.8 Suggestions for Further Research

The role of the adult learner is to learn. Learners may have both similarities and differences in learning styles. Another role of the adult learner is to be involved in the development of their digital learning. The structure of this process may merit further investigation for the FEC and likewise in adult education in the future.

The role of the adult educator is mainly to prepare digital content in line with curriculum guidelines whilst being mindful of adult learner's individual needs. It was also found that another role of the adult educator is to keep up to date with digital technologies. The findings indicated the existence of barriers to using digital technology in the FEC. However, the adult educators viewed using digital technology positively, as it would enable them to provide individual support to learners where necessary. A suggestion for further research in the FEC would be to investigate effective planning of digital lessons.

The role of Management is to continue to facilitate the use of digital technology in the FEC. Collaboration on using digital technology is occurring in the FEC. Collaboration outside the FEC, for example with ICT experts in the local community also needs to be investigated. The next step is to research structuring such collaboration. For example, it could be possible to form a digital lesson working group with involvement from adult learners, adult educators, and management.

5.2.9 Summary

Research revealed that the use of digital technology in society and likewise in education is increasing. Learning theories need to be taken into consideration when developing digital lessons. Barriers to the integration of digital technology exist, however participants in the research are prepared to work around these.

This study also found that using digital technology in an adult education setting can affect the roles of adult learners, adult educators and management.

The role of the adult learner primarily is to learn, however findings in this study show that learners would like to be involved in the creation of digital content for adult education.
Findings from this study indicate that the adult educator’s role is preparing and sourcing relevant digital content in line with learners’ needs and with curriculum requirements. The adult educator’s role is to keep up to date and to adapt new digital technology. Ensuring adherence to curriculum requirements is another role of the adult educator.

The role of management can be viewed as ensuring that adequate ICT infrastructure is in place and in facilitating collaboration. Findings from this case study viewed collaboration as essential for the successful integration of digital technology into the FEC and indeed into adult education.

The next chapter will conclude this case study.
Chapter Six – Conclusion

6.1 Introduction

The White Paper identifies the adult learner as central to the learning process (Ireland, Department of Education and Science 2000). Interestingly, it called for the establishment of local adult learning boards consisting of partnerships between adult learners, social partners and community groups. The objective of these boards was mainly to control the designation of resources. In July 2013, the Irish Government announced the establishment of Education and Training Boards (ETBs) to replace the existing VECs. These boards must include one community or business representative and one learner representative (Ireland, Department of Education and Skills, 2013).

This long awaited development poses the question: should adult education in Ireland be given more priority, particularly since the economic downturn in 2009? Since then there are high rates of unemployment and subsequently, an increased demand for adult education.

This investigation examined the use of digital technology in an FEC and its impact on the roles of three groups of participants: adult learners, adult educators and adult education management. The findings from the research conducted revealed that digital technology is used to some extent by all involved in the education process at the FEC. However, an appropriate structure needs to be put in place to make more effective use of that technology.

This chapter will give a brief summary of the research findings and provide recommendations for further research in this field.

6.2 Outcomes of the Research

The research questions and the findings obtained are outlined in the following sections.

6.2.1 How does the use of digital technology affect the role of the adult learner?

Findings revealed that the role of the adult learner primarily is to learn and to be involved in the planning and the preparation of their own learning. A large portion of the adult learners surveyed (73%) indicated that they would like to be involved in the creation of digital content for use in classes.
Likewise, the adult educators and the Centre Director viewed the learners’ digital skills as crucial in the FEC. Indeed, it was found that a significant amount of the adult learners surveyed had useful digital skills. For example, forty seven per cent indicated an ability to use five or more types of digital devices.

6.2.2 How does the use of digital technology affect the role of the adult educator?

It was found that using digital technology assigns several roles to adult educators. Prior to using digital content the role of the adult educator was that of identifying the adult learners’ needs. The adult educator’s role was also found to be that of sourcing and preparing digital content for their learners. Pivotal in this role is the need for adult educators to continually adapt to new technologies. However, adult educators must be mindful that their role is also to ensure that digital content adheres to curriculum requirements.

6.2.3 How does the use of digital technology affect the role of adult education management?

This case study revealed that one key role of the FEC Director is to ensure that an adequate ICT infrastructure is in place initially. Another significant finding is that the role of the FEC Director is to facilitate collaboration between all parties involved in the planning and development of digital learning.

6.3 Recommendations

Based on the findings, the following recommendations are made for further integration of digital technology at the FEC and likewise for adult education.

6.3.1 Recommendations for the FEC

1) This study revealed that barriers exist to the further integration of digital technology into the FEC. However, all participants in this study anticipate increased use of digital technology there in the future. Therefore, it is recommended that the FEC address these barriers so as to surmount them.

2) The FEC Director encourages both learner and adult educator involvement in the use of digital technology at the FEC. Collaboration has previously been successful for the completion of a digital art project at the FEC. Therefore,
further collaboration with a structured approach between the adult learners, their educators and the Centre Director is recommended.

6.3.2 Recommendations for Adult Education

Literature reviewed found that perspectives on adult education can vary (Jarvis 2004). Findings from literature also revealed that adults engage in it for a variety of purposes (Rogers 2002). However, the literature reviewed also identified the uniqueness of adult learners (Knowles 1980). This study found, in line with adult learning theory, adult learners have unique needs and want to be involved in the planning their own digital learning.

Based on these findings the following recommendations are made for using digital content in adult education:

1) In addition to the consideration of adults’ learning styles, and their individual learning needs, adult educators’ understanding of HCl design principles is also fundamental.

2) The development of strategic collaboration between adult learners, adult educators and adult education management is essential. This is to ensure that the digital content meets both the adult learners’ needs and curriculum requirements.

3) Enhancement of local training and education is highlighted as a main objective of the new ETBs, however another objective of this reform is to save the exchequer two point one million euro. It is therefore necessary to commence research into efficient uses of resources in adult education, digital or otherwise. Periodically reviewing the structure of and the progress of the ETBs also needs consideration.
6.4 Future Research

6.4.1 Future Research for the FEC

Based on the findings, research into the following areas is necessary for further integration of digital technology at the FEC:

1) This study revealed that one key role of the adult educator is sourcing of and preparation of digital content. Ninety per cent of the participating adult learners outlined individual mixes of digital content that they would have preferred for the interview skills lesson. This information is vital for ensuring that adult educators prepare digital content adequately. Further research needs to be undertaken on how adult educators can prepare and develop digital content effectively.

2) This study found that there is an availability of digital tools and skills at the FEC. However, overall it was also found that they are not availed of extensively by the participating adult educators. Findings also revealed that the adult educators had a profound dependence on the ICT teacher at the FEC for assistance. These findings could merit future research into how to share digital skills and expertise effectively amongst all educators at the FEC.

3) Further investigation is required into structuring collaboration within the FEC. Assigning roles to all involved in collaboration needs consideration. For example, literature recommends that educators act as mediators between all involved in educational collaboration (Redecker et al 2009).

4) Research into the inclusion of and support from individuals with ICT expertise in the local community could also be worthwhile for the FEC.

6.4.2 Future Research for Adult Education

Based on the findings, research into the following areas is necessary for further integration of digital technology into Adult Education:

1) Findings revealed that digital technology is useful in adult education, and that a lack of its availability can even deter adult learners from enrolling in courses. This case study has revealed the role of the adult educator is mainly in the preparation
of the digital content. It can be possible to glean information from adult learners prior to digital lesson development and thereby customize content as necessary, for example, to accommodate special needs. Further research is necessary to ascertain how to undertake this process efficiently.

2) FECs and other training organizations throughout Ireland are offering similar courses to adult learners. The adult educators involved develop and prepare similar digital content for their classes. The investigation of setting up adult educator digital working groups for subjects could also prove worthwhile for adult learners and adult educators alike.

3) Research into the feasibility of the development of a national reserve of digital resources for use in adult education.

6.5 Limitations of this Study

This research conducted was on a small scale with one FEC. However, the findings were consistent with literature reviewed. Generalisations or assumptions cannot be made to all FECs or to adult education as a whole.

Similar research in other FECs or in adult education in general could reveal if using digital technology makes a comparable impact on the roles of those involved in adult education. It may be possible that these findings would encourage a more proactive approach by the Department of Education and Skills in the field of adult education.

6.6 Conclusion

This case study examined the impact of digital technology in a FEC and made some significant findings. The use of digital technology can affect the roles of adult learners, adult educators and management alike.

Findings revealed that whilst barriers exist to the further integration of digital technology into the FEC, all three groups of participants are agreeable to making more use of digital technology.

Likewise, this study also found that through working collaboratively it can be possible to use digital technology more effectively in an adult education setting. Further
research is necessary to address how to effectively promote and structure collaboration on the use of digital technology in the FEC and likewise in Adult Education.
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Appendix A - Request to Conduct Research
11th December, 2012

Chief Executive Officer  
VEC.

Dear [Name],

I am a student on the Masters in Digital Media Development in Education with the University of Limerick.

Presently I am conducting study “An investigation into the use of digital technology in adult education”, a case study approach as a thesis. The key research question of this study is “how does the use of digital technology impact on roles in adult education”?

As some of your students may be seeking employment after their studies, I would like to request their assistance with this research by participating in digital interview skills training research with questionnaires and focus group discussion on same.

To show my appreciation to the students who participate, I am willing to offer them an hour long interview preparation session free of charge, and for the institution participating I am willing to offer some voluntary time during the academic year 2013/2014 on completion of my thesis.

Thanking you in anticipation of your support, I will be in contact with you over the coming days by telephone. In the meantime please do not hesitate to contact me should you have any further queries.

Yours sincerely

Henrietta Murphy
Appendix B – Confirmation of Request
(Email Received: January 14th, 2013)

Hetty,

I have spoken with [redacted] and they have kindly agreed to get a group to use the online interview skills programme and give feedback. You can contact [redacted] when the programme is ready for use.

Best of luck with the research.

Regards,
Appendix C – Learner Consent Form
8th April 2013

Dear Learner,

Masters in Digital Media Development for Education - University of Limerick.

You are being invited to participate in a research study about using technology in the classroom and how it may affect the roles of learners, teachers and management. You were selected randomly as a possible participant in this study.

The research will take about one hour to complete. It will consist of going online to complete some tasks on job interview skills and then completing a brief survey.

This research is anonymous and your participation in this study is voluntary. You are free to decline participating if you wish. If you do wish to participate please sign below.

If you have any concerns or questions about the study, please contact me at [Contact Information].

Thanking you for your time, and wishing you all the best with your studies.

Yours sincerely,

Henrietta Murphy

CONSENT FORM

Masters in Digital Media Development for Education - University of Limerick.

Research Project on the ICT and how does it affect Roles of Adult Learners, Adult Educators Teachers and Management

I agree to participate.

Signed:
Appendix D – Learner Questionnaire
Please answer all questions below – thank you for participating.

1) Age bracket:
- please tick (✓) under 20, □ 20-30, □ 30-40, □ 40-50, □ 50-60, □ 60+

2) Which course are you currently studying?
(please tick)
- Nursing Studies
- Art, Craft and Design
- Business

3) How many years of experience using digital technology do you have?
- less than 2, □ less than 5, □ 10 years, □ 20 years or more

4) Do you use a computer in your spare time?
- Yes □ No □
- If ‘yes’ please go to question 5, if ‘no’ please continue to question 6.

5) What do you use the computer for in your spare time?
(Please tick all that apply)
- Emailing
- Social Networking, for example Facebook, Skype
- Reading Articles Online
- Music
- Videos
- Purchasing/Shopping

6) What prevents you from using a computer in your spare time?
(Please tick all that apply)
- Cost of Hardware and Software
- Not enough IT skills or experience
- No internet access at home
7) Are you able to use any of the following?

(Please tick all that apply)

- Ipad
- Smartphone
- Video Camera
- Digital Camera
- Other (for example Games consoles, mp3 players) please list:

8) "Technology may be viewed as essential in learning and communication nowadays"

Please circle between 1 - 5, one being strongly disagree to 5 being strongly agree with this statement:

1 2 3 4 5

Strongly Disagree Disagree Not Sure Agree Strongly Agree

9) Which features of the job interview skills lesson did you find useful?

(Please tick all that apply)

- Being able to replay when it suited me
- I could work at my own pace
- Mix of content, for example: text, videos etc.

10) Would you like to see more digital content in the lesson?

- Yes, go to Question 11
- No, - Skip Question 11, go to question 12

11) If yes, please list content you would like added:

- Video
- Text
- Pictures
- Talk
- Other
12) Would you like to be involved in selecting digital content for a subject for example, videos, websites etc. for communications class?

Yes □       No □

13) Would you prefer this type of digital lesson to traditional lessons i.e. reading from hand-outs or a book?

Yes □       No □

14) Would it help if you could access this lesson again before attending a job interview?

Yes □       No □

15) Do you think advice from experts in different career areas in preparing the lesson would be beneficial?

Yes □       No □

16) How did you view the role of the teacher during the lesson?

Supervisor □
Introduction to lesson then we worked □
Support for technical issues □
Guidance through the lesson where to go next etc. □

17) Where you had to get guidance from your teacher?

Please tick all that apply

Finding my way around □
The blog □
Technical Issues □
None □

18) How did you view your role during the lesson?

Doing my coursework □
Doing my coursework and helping others in the class □

End of questionnaire.
Many thanks for your help with this project – Best wishes for the Future!
Appendix E – Responses from Learners
Question No. 1:

Learners' Age Profile

Question No. 2:

Participation by Course
Question No. 3:

Number of Years using ICT

![Bar chart showing the number of years using ICT for different categories of learners](chart)

No of Years using ICT

- <2: 5 learners
- <5: 7 learners
- 5-10: 9 learners
- >10: 9 learners
- >20: 0 learners

Question No. 4:

Do you use a computer in your spare time?

![Pie chart showing usage of computers](chart)

- Yes: 5%
- No: 95%
Question No. 5:

What do you use the computer for in your spare time?

- 45% Social Networking
- 25% Listening to Music
- 11% Watching videos
- 11% Emailing
- 3% Reading online
- 3% Buying goods and services

Question No. 6:

What prevents you from using a computer in your spare time?

- 50% Cost of Hardware & Software
- 13% Not Enough IT Skills or Experience
- 7% No Internet at Home
Question No. 7:

<table>
<thead>
<tr>
<th>Number of digital devices learners can use</th>
<th>Number of Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

Question No. 8:

"Technology may be viewed as essential in learning and communication nowadays"
Question No. 9:

Which features of the job interview skills lesson did you find useful?

- Replay: 36%
- Work at my own pace: 28%
- Mix of content: 36%

Question No. 10:

Would you like to see more digital content in the lesson?

- Yes: 88%
- No: 12%
Question No. 11:

Types of Digital Content Learners would like added.

- Video: 38%
- Text: 17%
- Pictures: 21%
- Talk: 17%
- Other: 7%

Question No. 12:

Would you like to be involved in choosing digital content for communications class?

- Yes: 73%
- No: 27%
Question No. 13:

Would you prefer this type of digital lesson to traditional lessons i.e. reading from hand-outs or a book?

Question No. 14:

Would it help if you could access this lesson again before attending a job interview?
Question No. 15:

**Do you think advice from experts in different career areas in preparing the lesson would be beneficial?**

![Pie chart showing responses to Question No. 15]

Question No. 16:

**How Learners viewed the role of the Teacher during the lesson**

![Pie chart showing responses to Question No. 16]
Question No. 17:

In which areas had you to get assistance from your teacher?

- Finding My Way Around: 20%
- Technical Issues: 40%
- The Blog: 30%
- None: 10%

Question No. 18:

How did you view your role during the lesson?

- Doing my Coursework: 43%
- Doing my coursework and helping others: 57%
Appendix F – Adult Educator Focus Group Questions
PRACTICIONER: “Before we start may I take this opportunity to thank you for agreeing to participate. I am recording this for the purpose of transcribing the responses. All responses given will be treated confidentially.”

PRACTICIONER: “The focus group discussion is in relation to the objectives of my research project: the impact of the use of a digital resource to teach job interview skills on adult learners, educators and management – how does it affect their roles. The discussion will last up to 40 minutes.”

1) Can you give me a brief profile of this group? Experience, skills.

2) What ICT tools are available to you for use in the FEC?
   - For example Digital camera, PowerPoint, videos, Microsoft word, social media, YouTube, blogs etc. - ICT Skills Profile

3) Are any of those digital tools currently used by you as an aid when teaching?
   - Which of the listed tools being used in the classroom - ICT Skills Profile

4) Any other tools you would consider using in the near future?
   - Software, hardware

5) What is the role of the adult educator before a digital lesson?
   - Preparation of subject matter? Research materials?

6) What is the role of the adult educator during the digital lesson?
   - What is the teacher doing mainly during the digital lesson e.g.
   - Facilitating learners if they need help

7) Is there anybody else who could be consulted for support or advice when creating digital content?
   - E.g. ICT expert in the centre other centres or other teachers, learners?
   - Is there an ICT working group or team in place? Collaboration
8) Where can adult educators get help from if developing digital lessons? For example, to source and create content?

Own skills, learners, ICT experts, ICT expert groups, teachers centre

9) Do the adult learners have a role when you use digital technology?

Learners ICT skills, collaboration

10) Are you a member of any ICT group or society e.g. CESI, ICS-Skills?

Collaboration, if yes is it helpful, if not have you thought of joining any?

11) What barriers may prevent you from using (more) technology in the classroom?

Cost? various levels of ICT skills in group? Teachers own skills?

12) Do management have a role in integrating digital content?

If yes is their role budgets information

13) How do you see the role of the teacher changing in the future?

Discussion – to obtain how the group envisage ICT in future adult education.

14) Having observed the learners using the digital lesson on interview skills, what are your views?

Could you create it or something similar? Would you need support?

15) What skills do you feel are necessary for you to integrate digital technology into a lesson?

Technical skills, knowledge –

The focus group discussion is now finished. - Thank you for participating.
Appendix G – Adult Educator Focus Group Transcription
Date: 17th May, 2013
Time: 11.30
Duration: 40 Minutes
Venue: FEC
Present: 6 adult educators, Practitioner
Notes: All teachers present are referred to as Teacher A, Teacher B, Teacher C, Teacher D, Teacher E, Teacher F.

PRACTICER: 'Before we start may I take this opportunity to thank you for agreeing to participate. I am recording this for the purpose of transcribing the responses. All responses given will be treated confidentially.'

PRACTICER: 'The focus group discussion is in relation to the objectives of my research project: the impact of the use of a digital resource to teach job interview skills on adult learners, educators and management—how does it affect their roles. The discussion will last up to 40 minutes'.

1) Can you give me a brief profile of this group?

Teacher C: 'I suppose on average we are all here some of us five years and some of us have over 20 years of experience'.

(All teachers present concurred with this statement)

2) What ICT tools are available to you for use in the FEC?

Teacher A: 'We have interactive whiteboards and the internet'.

Teacher C: 'Interactive White Boards, the internet, Microsoft word and Excel'.

Teacher B: 'We have all these and also word press, blogs, and Moodle.
Sometimes I use Lynda.com for resources as well'.

Teacher D: 'I have used YouTube on occasion for resources'.

Teacher B: 'We have Moodle as well, I would like to use that more to give the learners quizzes'.
Teacher E: 'I use the internet mainly'.

Teacher F: 'Microsoft word and the web'.

3) Are any of those digital tools currently used by you as an aid when teaching?

Teacher A: 'I use the interactive white board occasionally, sometimes the internet with the learners'.

Teacher B: 'I use the internet, the interactive white board and Moodle'.

Teacher C: 'Internet for research and the Interactive White Board during classes'.

Teacher D: 'The Interactive White Board as well'.

Teacher E: 'I use the internet mainly'.

Teacher F: 'The internet for research and I use it during class the interactive white board when necessary'.

4) Any other tools you would consider using in the near future?

Teacher B: 'I would like to use Camtasia and make more use of Moodle here in the Centre, I would also like to use Adobe Captivate but it is very expensive. Maybe use blogs more'.

Teacher A: 'I would consider using e-books'.

Teacher F: 'Online Forums and Social media'.

Teacher D: 'I would like to use Moodle a lot more'.

Teacher C: 'Social Media'.

Teacher E: 'For me it would have to be to get better at using technology especially the internet as a resource'.
5) What is the role of the adult educator before a digital lesson?

Teacher E: 'Research and Lesson planning'.

Teacher A: 'Research, preparing for classes'.

Teacher C: 'Getting material ready for classes'.

Teacher B: 'I agree mainly research and class preparation'.

Teacher C: 'Also making sure that FETAC guidelines are being followed'.

Teacher D: 'Sourcing relevant materials for classes'.

Teacher F: 'Preparation of subject matter and researching materials'.

6) What is the role of the adult educator during the digital lesson?

Teacher D: 'I would view my role as a facilitator of the subject'.

Teacher A: 'Facilitating'.

Teacher F: 'Facilitating discussion and encouraging peer learning'.

Teacher B: 'Encouraging self-directed learning'.

Teacher C: 'Facilitating'.

Teacher E: 'Digital Technology could enable me to give individual attention to learners that need it'.

7) Is there anybody else who could be consulted for support or advice when creating digital content?

Teacher F: 'I usually rely on Teacher B to help me out; he has great knowledge of computers'.

Teacher B: 'We usually work together to figure out a solution here at the centre, if we cannot solve it we can contact, the VEC ICT Officer in

Teacher C: 'Teacher B mainly, as they are the ECDL teacher and has a lot of knowledge in the area of computers'.
Teacher F: 'Teacher B as well!'

Teacher E: 'Teacher B is a great help, however if the issue is small the learners are able to help out during classes'.

Teacher A: 'I usually ask Teacher B too!'

8) Where can adult educators get help from if developing digital lessons? For example, to source and create content?

Teacher F: 'I think that the answer to that is mainly the same as the previous question we rely a lot on Teacher B!'

Teacher C: 'I agree'.

Teacher E: 'Yes, Teacher B again!'

Teacher D: 'Yes, we rely on Teacher B mainly for all IT issues'.

9) Do the adult learners have a role when you use digital technology?

Teacher E: 'Yes, the learners do have very good IT knowledge, particularly the younger ones, they are so confident with technology'.

Teacher B: 'Yes, they are confident with technology and often have good ideas on freeware etc.'

Teacher C: 'Once or twice I have come across learners who found useful materials for class on the internet'.

Teacher E: 'Sometimes in class, they can help me look up things on the internet'.

Teacher F: 'If you run into a problem with hardware, sometimes the learner can help you with troubleshooting, rather than having to get Teacher B out of their class'.

5
10) Are you a member of any ICT group or society e.g. CESI, ICS-Skills?

Teacher F: ’No, I am not a member of any computer related group’.

Teacher B: ’I am a member of the Irish Computer Society’.

Teacher E: ’Not in anything either’.

Teacher A: ’No, it is something we should investigate and also we should see who in the local community can help’.

Teachers C: ’No’.

Teacher D: ’No’.

11) What barriers may prevent you from using (more) technology in the classroom?

Teacher B: ’Cost mainly, some of the really useful packages out there are very expensive, for example Adobe Captivate, I would love to use that for my classes but it is too dear’.

Teacher F: ’I would like to have more confidence solving minor technical issues, instead of calling on Teacher B, it would be great to resolve something and just get on with the class’.

Teacher C: ’Training can be expensive, like the interactive white board training, that was expensive to get the technology and to get the training as well’.

Teacher D: ’Time, We also work with students getting ready for the Leaving Certificate exams, so when FETAC is finished, we are straight into the final stages of preparing students for sitting the Leaving Certificate exams’.

Teacher A: ’True, we are busy here with FETAC modules – getting work done and it is hard to get the time to learn and to try out new technologies’.

Teacher E: ’Technical know-how, with so much technology appearing so rapidly, it’s also hard to get time to learn about it’.
12) Do management have a role in integrating digital content?

Teacher A: 'I suppose, decision making what digital technology is needed here, in the centre, sourcing it and pricing it too, making sure it is within a set budget'.

Teacher B: 'Staff, would make a request for technology, for example, software or hardware, and go to the Centre Director with their idea and price quotes'.

Teacher E: 'TEC management would have the final say with regard to budgets, tenders etc.'

Teacher C: 'I see management as at a decision making level, based on information they get from staff and other FECs'.

13) How do you see the role of the teacher changing in the future?

Teacher B: 'I think there will be more online learning. For example, classes or courses could be provided online from a central hub'.

Teacher C: 'I agree, in the future even some classes or course could be provided online by our centre'.

Teacher E: 'I think there could be more use of e-books in classes'.

Teacher A: 'Digital technology will be more integrated into adult education, for example, like secondary schools, some of them now use L pads instead of textbooks'.

Teacher D: 'I think there will be a blend of technologies used in adult education, tablets and e-books, all resources will be online'.

Teacher B: 'Web 2.0 will have a future version, for now let's call it Web 3.0, where both educators and learners can use it to extract quality information. At the moment, when you are searching the internet it can be hard enough to find exactly what you are looking for, there is a lot of inaccurate information on the web'.

7
14) Having observed the learners using the digital lesson on interview skills, what are your views?

Teacher E: ‘One or two problems but the learners figured it out, Teacher B helped me’.

Teacher B: ‘Straightforward, one I had the link I looked through it before using it in class, some learners asked about navigation. Something similar could be useful for my subject’.

Teacher E: ‘I think that it is important to be familiar the layout before using a digital lesson in class, to be able to answer any questions, especially form a technical point of view’.

Teacher F: ‘I think if I had something like this prepared for my subject, it could be used time and time again, and parts of it changed when necessary. It could take up a lot of time creating something like this, but nevertheless in the long term worthwhile’.

Teacher A: ‘It would take a lot of time to set up, but once that was done it would be just a matter of using it, and changing some of it’.

15) What skills do you feel are necessary for you to integrate digital technology into a lesson?

Teacher E: ‘Understanding your learners for a start, looking at their goals and their abilities, and what they need from the digital lesson’.

Teacher E: ‘I think confidence with technology is important, if you have an idea of what you are doing you are not afraid you will lose everything!’

Teacher A: ‘How to search for find exactly what you need on the internet’.

Teacher B: ‘Using search engines effectively, feedback from the learners too’.

Teacher C: ‘Basic technical skills for a start’.

Teacher F: ‘Using PowerPoint, getting more out of it’.
Teacher D: ‘Understanding your learners, it could be possible that if a learner has literacy problems you could incorporating a narration into a lesson’.

Teacher B: ‘Learners abilities, digital technology can help accommodate learners with special needs. As Teacher D is saying you could tailor the digital lesson. It could be time consuming at first but well worth it’.

The focus group discussion is now finished. - Thank you for participating.
Appendix H – FEC Director Telephone Interview Questions
PRACTICIONER: 'Before we start, may I take this opportunity to thank you for agreeing to participate. I am recording this call for the purpose of transcribing the responses. All responses given will be treated confidentially'.

PRACTICIONER: 'The interview is in relation to the objectives of my research project: the impact of the use of a digital resource to teach job interview skills on adult learners, educators and management—how does it affect their roles'.

1) Can you tell me about your role as Centre Director?
2) What technology is currently used in the centre and in your role?
3) Is there an ICT plan in place for the centre?
4) How do you view the role of the learner when using digital content in adult education?
5) How do you view the role of the adult educator when using digital content?
6) How do you view the role of the adult educator in the future?
7) Does Management have a role when integrating digital content in the centre?
8) If yes, what is that role?
9) What are the main barriers to integrating technology in the centre?
10) Is the centre affiliated to any groups such as ICS, CESI etc.?
11) Are other individuals or organisations consulted for advice on using ICT in the classroom?
12) Is there an ICT co-ordinator/expert available to the centre?
13) If yes, what is their main role?
14) Is there an ICT team or working group in the centre?
15) How do you view the use of digital content in lessons?

The interview is now finished. Thank you for participating in this research.
Appendix I – FEC Director Telephone Interview Transcription
PRACTICIONER: 'Before we start, may I take this opportunity to thank you for agreeing to participate. I am recording this call for the purpose of transcribing the responses. All responses given will be treated confidentially'.

PRACTICIONER: "The interview is in relation to the objectives of my research project: the impact of the use of a digital resource to teach job interview skills on adult learners, educators and management – how does it affect their roles'.

1) Can you tell me about your role as Centre Director?

Centre Director: 'I am Centre Director here in [ ], FEC for seven years. There are 15 full time and three part time staff here. The centre caters for 170 full time learners and 30 part time learners'.

'My role is mainly to co-ordinate and to manage staff and learners at the centre. This can involve administration, budgeting, dealing with day to day issues as they arise'.

'As part of my role I report to or seek advice from VEC as well as the Department of Education and Skills'.

2) What technology is currently used in the centre and in your role?

Centre Director: 'We have a LAN, recently we added a wireless extension to the LAN for the Art Department, so that students can bring in their laptops to work on their projects. We have funding prioritised to buy twenty new PCs for the computer. We don’t have tablet PCs or i pads here at the moment. Interactive whiteboards are available in the centre for staff to use'.

'Using ICT is integral on a day to day basis in the Centre Director’s role. For example, ICT is necessary for the completion of tasks such as emailing, word processing, database management and financial reporting'.
3) Is there an ICT plan in place for the centre?

Centre Director: ‘There is, we are currently updating going to acquire 20 new pcs, and part of the strategy is to use ICT in the delivery of online courses which we hope to run in the future. An example is negotiations are underway with Art College to deliver an online art based degree course from the centre. As ICT will be integral in the delivery of the course plans are underway on how best to develop this’.

4) How do you view the role of the learner when using digital content in adult education?

Centre Director: ‘The role of the learners is vital when using digital technology in classes, they can often be the driving force in the class. Learners use social media such as Facebook to communicate, they use Moodle here in the centre. A recent example was the online Art Project where students were issued with a brief to create an online campaign portraying the lift of the centre. Digital technology was used to create and edit photo shots. The project was student driven and staff were open to it’.

5) How do you view the role of the adult educator when using digital content?

Centre Director: ‘Educators have changed their approach to using digital technology. Online content has opened up a whole new world for them. Resources found online can now be incorporated into class using Moodle, for example artwork. The role of the educator is to use technology to research appropriate digital content for classes. This content must be in line with curriculum guidelines’.
6) How do you view the role of the adult educator in the future?

Centre Director: 'As the adult educator will be using digital content in classes, I feel that they will be collaborating more with other adult educators and with adult learners. Their role will involve research and preparation of digital content relevant to the adult learners' needs and their learning styles'.

7) Do Management have a role when integrating digital content in the centre?

Centre Director: 'Management can have several roles when integrating digital technology into adult education'.

8) If yes, what is that role?

Centre Director: 'Management must ensure that the ICT infrastructure has to be put in place first. Staff are encouraged and supported, through the provision of training and facilitating peer learning. Management also have to support the adult learners and staff through encouraging access to technology through timetabling'.

9) What are the main barriers to integrating technology in the centre?

Centre Director: 'Finance is the main barrier to keeping up to date with technology. Not all staff are open to using ICT, for example it took approximately a year to get all staff to use e-mail. Time is another barrier, as staff need time to get used to technology and this can be difficult given their workload. A person's approach to ICT can often be a barrier'.

10) Is the centre affiliated to any groups such as ICS, CESI etc.?

Centre Director: 'Yes, the centre is affiliated to the Irish Computer Society'.

4
11) Are other individuals or organisations consulted for advice on using ICT in the classroom?

Centre Director: 'Yes, the ICT officer at VEC, Teacher’s Centre, College and the National Association of VTOS Coordinators'.

12) Is there an ICT co-ordinator/expert available to the centre?

Centre Director: 'Yes, the VEC ICT Officer for the county is available to us'.

13) If yes, what is their main role?

Centre Director: 'The ICT officer provides technical advice and is involved in the tendering out of ICT services'.

14) Is there an ICT team or working group in the centre?

Centre Director: 'At present, there is no official working group in the centre. The Business and Art teachers bring IT related ideas to staff meetings for feedback. If the staff need extra help they usually consult the centre IT teacher'.

15) How do you view the use of digital content in lessons?

Centre Director: 'The use of digital content would call for collaboration between educators and learners. The creation of digital lesson could be challenging for some educators. It was found that there were issues with the digital interview lesson such as navigation and compatibility. The educator would have an important role in testing and checking digital content before using it in class, for example, for compatibility with operating systems'.

[The interview is now finished. Thank you for participating in this research.]
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