An exploration of the adaptation of the Dimensions of Learning framework to promote thinking skills in a 21st century Adult Learning environment through the development of digital media narrative.

A Case study

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Submitted to the University of Limerick: October 2013
Declaration

I hereby declare that this is my own work and that it has not been submitted, in whole or in part, by me or any other person, for the award of any degree at any other university.

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October 2013
Abstract

An exploration of the adaptation of the Dimensions of Learning framework to promote thinking skills in a 21st century Adult Learning environment through the development of digital media narrative.

A Case Study Approach

Vivienne Purcell

The worlds of education and learning in the 21st century are being shaped by rapidly changing environments of digital medias and new technologies which require new learning and communication skills.

The aim of this exploratory and descriptive study is to examine and foster the 21st century thinking skills of critical thinking, communication, collaboration and creativity (4Cs) through the creation of digital narrative against the backdrop of the Dimensions of Learning framework.

Based on research into the cognitive process, the framework proposes that five dimensions of “thinking” (learning) are inherent in the learning process and should be considered in curriculum design, teaching and assessment:

- Dimension 1: Positive attitudes and perceptions about learning.
- Dimension 2: Thinking used to acquire and integrate knowledge.
- Dimension 3: Thinking used to extend and refine knowledge.
- Dimension 4: Thinking involved in using knowledge meaningfully.
- Dimension 5: Productive habits of mind.

Each dimension links to and supports the other dimensions. Learner centered instruction in a constructivist manner is promoted in which the learner takes responsibility for their own learning.

The methodological approach to the research was multimodal. Adult learners on a VTOS programme participated in the research process. A pre survey was conducted to explore Adult Learner’s attitudes and perceptions to IT, digital media and learning. The creation of digital narrative fostered an opportunity to apply the Dimensions of Learning framework. A post research e-survey enabled an evaluative review of the process to reflect on the application of this framework in the adult learning environment.

The research findings indicate that it is eminently feasible to introduce the strategies of the Dimensions of Learning framework to an adult learning environment to support learning. On analysis of the empirical evidence and digital narrative, thinking skills were demonstrated by the learners to varying degrees. However, it cannot be deduced that this is as a direct result of strategies introduced to the learners as part of the Dimensions of Learning framework. It may be that the learners have developed the thinking skills based on their own life experiences and as part of lifelong learning.
Acknowledgements

My study and work on the UL Masters programme would not have been possible without the support, help and encouragement of so many people.

I offer you my thanks.

Thank you to my Tutor and Supervisor, Catriona Lane for being so approachable, helpful and supportive.

Thank you to Helen O’Sullivan, Ennis VTOS Co-ordinator for your encouragement and willingness to contribute.

Thank you to all the wonderful Adult Learners on the Ennis VTOS programme for your participation in my research and for your enjoyment in your new learning. I learn so much from you all.

Thank you to my family for supporting me and allowing me the time to expand my mind.

Thank you Michael O’Brien, UL for your patience, support and willingness to assist whenever asked.
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<th>Description</th>
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<tbody>
<tr>
<td>ASCD</td>
<td>Association for Supervision and Curriculum Development</td>
</tr>
<tr>
<td>ATC21S</td>
<td>Assessment and Teaching of 21st century skills</td>
</tr>
<tr>
<td>CEDEFOP</td>
<td>European Centre for the Development of Vocational Training</td>
</tr>
<tr>
<td>CESI</td>
<td>Computers in Education Society of Ireland</td>
</tr>
<tr>
<td>D1</td>
<td>Dimension 1 - Attitudes &amp; perceptions</td>
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<td>D2</td>
<td>Dimension 2 - Acquire and integrate knowledge</td>
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<td>D3</td>
<td>Dimension 3 - Extend and refine knowledge</td>
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<td>D4</td>
<td>Dimension 4 - Use knowledge meaningfully</td>
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<td>D5</td>
<td>Dimension 5 - Habits of mind</td>
</tr>
<tr>
<td>DG Connect</td>
<td>European Commission Directorate General for Communications Networks, Content and Technology</td>
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<tr>
<td>DOL</td>
<td>Dimensions of Learning</td>
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<tr>
<td>ETB</td>
<td>Education &amp; Training Board</td>
</tr>
<tr>
<td>ISTE</td>
<td>International Society for Technology in Education</td>
</tr>
<tr>
<td>McREL</td>
<td>Mid-Continent Research for Education and Learning</td>
</tr>
<tr>
<td>MKO</td>
<td>More Knowledgeable Other</td>
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<tr>
<td>NCTE</td>
<td>National Centre for Technology in Education</td>
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<tr>
<td>NDS</td>
<td>National Digital Strategy – Doing more with Digital - Phase 1 July 2013</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>P21</td>
<td>Partnership for 21st Century Skills</td>
</tr>
<tr>
<td>QQI</td>
<td>Quality and Qualifications Ireland</td>
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<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organisation</td>
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<tr>
<td>VARK</td>
<td>Visual, Aural, Reading, and Kinesthetic Learning Styles Inventory</td>
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<tr>
<td>VTOS</td>
<td>Vocational Training Opportunities Scheme</td>
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<tr>
<td>WWW</td>
<td>World Wide Web</td>
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<td>ZPD</td>
<td>Zone of Proximal development</td>
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Chapter One – Introduction

1.1 Introduction

The 21st century world is changing exponentially. Globally, change is inherent in people’s lives. This change is reflected economically, socially, educationally and in everyday life. With the emergence of interactive 21st century technologies, digital media and content have become the dominant format in the world of information and knowledge. Digital Medias have become a means to communicate, create, collaborate and learn. New skills and ways of thinking are essential to participate in this world. Known as the 21st Century Skills, these are the 4Cs of Communication, Collaboration, Critical Thinking and Creativity. As the digital technologies emerge and redefine, learning and re-learning must keep pace. Futurist Alvin Toffler maintains that “the illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn” This new world requires approaches to teaching and learning environments which will encourage and engage the thinking and learning skills of all learners.

One framework which promotes a comprehensive approach to instruction and learning based on cognitive research of the thinking process is the Dimensions of Learning framework. (Appendix A). The core premise of this framework is that five types of thinking (the five Dimensions of Learning) are essential to successful learning across all content areas and levels of learning.

In the interactive process of learning, the five dimensions proposed are:

- Dimension 1: Positive attitudes and perceptions about learning.
- Dimension 2: Thinking used to acquire and integrate knowledge.
- Dimension 3: Thinking used to extend and refine knowledge.
- Dimension 4: Thinking involved in using knowledge meaningfully.
- Dimension 5: Productive habits of mind.

Strategies are presented by this framework to plan instruction, design curriculum and assessment with the ultimate goal of improving the student/learner’s thinking skills.
This research thesis will open a window into the application of the Dimensions of Learning framework to consider if the thinking skills required for participation in the 21st century world can be fostered through the medium of digital media within an adult learning environment.

1.2 Statement of topic

A case study approach was applied to explore the adaptation and application of the Dimensions of Learning framework to an Irish adult learning environment in order to promote 21st century thinking skills through the creation of digital media content using the medium of digital storytelling.

1.3 Research questions

The research questions posed by this research study are:

1. What are the attitudes and perceptions to the world of digital media by adult learners on a second chance education programme?

2. Can the emerging 21st century learning and thinking skills required by today’s digital world of rapid technological change be fostered in an adult learning environment through the adaptation of the Dimensions of Learning framework?

1.4 Relevance

Education today faces diversity and challenge. Citizens (whatever age) need to learn new skills for today’s world. They must also acquire the capabilities and competencies as part of lifelong learning in order to participate in a society in which social networking, computers, mobile phones, the World Wide Web and other digital technologies play a central role. Learning environments are no longer tied to a classroom and therefore today’s learners now have new learning opportunities. Having grown up with digital technologies, today’s younger generation are considered to be active learners, multi taskers who are easily hyper communicators (a term coined by Apple Inc.) using multiple sources of digital technology to communicate, collaborate and learn.
However, the learning environment is open to a very wide diversity of learners. One of the consequences of the changing economic climate is that adult learners are returning to education to reskill, up skill and retrain. They are entering a world of education which is significantly different than the classroom of the 20th century as they encounter the new digital world in education.

1.5 Significance

The need to acquire and expand on new skill sets is now an area of extensive research and discussion. Known as 21st century learning framework, the skills required for the global economy and global classroom are broadly defined as ways of thinking using creativity, critical thinking and problem solving skills, while working in a communicative and collaborative manner using the tools of the digital environment. These support the life and career skills of global citizenship while taking personal and social responsibility.

![Figure 1: Framework for 21st Century Learning](Partnership for 21st Century Skills 2011)

While education and learning in the 21st century must look to the digital arena, it must also continue to incorporate the core subjects and yet expand to address the new literacies required. Today’s literacies extend beyond the 3 R’s of basic reading, writing
and arithmetic to include health literacy, environmental literacy, civic literacy and the many literacies required to find, evaluate, create and share information and knowledge.

As defined by Andreas Schleicher, of the OECD Education Directorate: “21st century literacy is about reading to learn and developing the capacity and motivation to identify, understand, interpret, create and communicate knowledge” (OECD).

1.6 Rationale for the research

While the focus of the Dimensions of Learning framework is primarily up to age eighteen, the authors of research in this area do state that it may be applied to an adult learning environment. There is no evidence from secondary research to date (on this study) that this topic has been investigated within an adult learning environment and certainly not from a stance of fostering thinking skills through user generated digital media content.

1.7 Research context

Adult learners on a VTOS programme in the west of Ireland were asked to participate in this research. A second chance education programme, VTOS offers opportunities for adult learners to up skill for re-entry to 21st century workforce or to follow the path of progression to third level education.

1.8 Research Methodology

In preparation for the research process, an extensive search of the literature was undertaken and is presented in Chapter 2. The primary research undertaken was conducted using a multi method approach generating both qualitative and quantative data. E-Research was carried out with the Adult Learner cohort using both pre study and post study questionnaires to elicit data on attitudes and perceptions to digital media and review & evaluate thinking skills. The medium used to foster the thinking skills was based on strategies proposed by the Dimensions of Learning framework and these strategies were implemented by the participants in the creation of a digital story.
1.9 Structure

This study is documented over six chapters.

Chapter 1 will present an overview of the world of learning today and introduce the research topic and study context.

Chapter 2 will review the literature within the context of the 21st century learning environment with particular reference to adult learners. A discussion of learning theories will culminate in discussion of the theory of andragogy – how adults learn. The manner in which adults may learn based on their preferred learning style and intelligence will be considered. The framework of the Dimensions of learning will be introduced as a cognitive framework for promoting thinking (learning) skills.

Chapter 3 details the methodology applied to this research project. The rationale for choosing a case study approach will be outlined. Detailed explanations of the research methodology and implementation follow with reference to the research tools and importance of reliability, validity and ethical considerations.

Chapter 4 will present the findings of the research undertaken with the research cohort.

Chapter 5 discussion will draw on the empirical evidence generated to highlight the findings and establish the results of the research questions posed. It will also acknowledge the limitations of the study.

Chapter 6 will conclude with an overview of the outcome of the research and will make recommendations for further study.
Chapter Two - Literature Review

2.1 Introduction

This chapter will discuss the review of secondary research into the topic of learning with particular emphasis on adult learning within the 21st century global classroom which is dominated by digital technology and new medias. The way adults learn - the concept of andragogy - will be explored and learning styles and multiple intelligences considered. This Chapter will introduce the research based instructional Dimensions of Learning framework.

2.2 21st century learning

“What we learn, the way we learn it and how we are taught is changing.” Andreas Schleicher, OECD Education Directorate (OECD)

The multifaceted connected global world of today requires new skills and competencies. Digital technology is transforming the worlds of work, education and social relationships. In the world of education, the emphasis of education has had to, and is continuing to shift to acknowledge and address the 21st century knowledge based economy. This knowledge is becoming even more specialized as “Learning to collaborate with others and connect through technology are essential skills in a knowledge-based economy.” (ATC21S 2013)

The definition of learning skills for the 21st century is the subject of on-going research and discussion throughout the world by a variety of organisations for example, ATC21S and P21 etc. In general, the skills identified include:

- Learning (thinking) and innovation skills (known as the 4Cs),
- Skills for working - literacies and IT skills and life and career skills of flexibility, initiative and self-direction,
- Skills required for living in today’s world - social and cross cultural skills, citizenship (local and global) productivity and accountability and leadership and responsibility.
At the core of what are now commonly referred to as “21st Century Skills” are the 4Cs of:

- **Critical thinking** (and problem solving) exercise reasoning in understanding, making choices, understanding connections and limitations, analyzing and synthesising.

- **Communication & collaboration skills**: articulating thoughts and ideas clearly and effectively, demonstrate ability to work with others, assume shared responsibility for collaborative work.

- **Creativity** (and innovation): originality and inventiveness in the work, develop and present new ideas, act on creative ideas.

Encountering and adopting these skills in a learning environment enables the learner to be actively involved in the learning process. Active involvement and engagement means that:

- Learners learn how to think for themselves,
- Learning is transferable and can be applied to other situations,
- Learners can take ownership and become the prosumer (producer+consumer) as the learner can access and produce knowledge and skills in a variety of ways,
- Learning is an active, constructed process placed in real world experiences of learners - the concept of orientation as proposed in the theory of Andragogy - “the Art and science of helping adults learn” - by Malcolm Knowles,
- Collaboration and sharing of ideas prepares the learner for the social interactivity necessary in the new world of social and digital medias (Chen & Bryer 2012).
2.3 Digital media: a shape shifting definition

The evolution of Digital media has been one of the most transforming cultural forces to evolve daily in a rapidly changing technological world, transforming the second half of the 20th century and first half of the 21st. Defining “digital media” is challenging as it is a shifting terminology. The term “media” refers to the tools used to store and deliver information or data in a computerised environment. “Digital”, on the other hand is a rich and powerful binary code (which recognises, at its most basic level the pattern of two binary values of zero & one or On and Off) applied to data in any form of media – electronic text, graphics, audio, video, moving images etc. which offers the user a multimedia experience. When the user becomes actively involved in the digital experience – for example - surfing the web, following links, they are considered to be experiencing hypermedia.

2.3.1 Interactivity and user experience

Digitization of media is not only about “bits – binary digits”, it is about interactivity and user experience. In the book: Introduction to Digital Media (2005), Feldman proposes that the radical changes are not a revolution, which would suggest rapid movement of events leading to dramatic change but rather an evolution with events building on each other. He believes that the advent of digital media has been an organic process of development – a process of evolution with revolutionary implications! This digital (r)evolution has pervaded all aspects of life.

Feldman (2005) proposes that the true value of digitizing information is that it becomes manipulable, networkable (simultaneous sharing and exchange of information by large numbers of users globally) and dense - large amounts of data in the media of text, images, video etc.is compacted and compressible offering a multimedia experience that can digitally represent any form of information.

At its simplest, digital media and technology may be considered to be an electronic medium whereby information & content is digitized and stored in a format that can be transmitted over the Internet and computer networks offering a user experience and interaction. However, this is simplistic. When digital media is combined with creativity, this expands the potential to encompass human expression leading to communication, social interaction and lifelong learning.
2.3.2 The Age of Convergence

The first half of the 21\textsuperscript{st} century is now known as the Age of Convergence. Due to technological innovation in Information Communication Technologies and the unprecedented evolution and development of the Internet and World Wide Web, the functions of different technologies have overlapped. It is now possible to converge and blend digital media and technology due to faster computer systems, high speed wireless networks combined with the advancements in digital graphics, video, audio, online media etc. and the merging of various forms of communication.

2.3.2.1 Social networking

Social media describes the digital social networking sites – Facebook, Twitter etc. with inherent interactivity which has led to user generated content in the forms of uploaded videos, blogs, tweets, exchanges of views, criticisms, etc. Social-networking tools offer unprecedented ways to connect, share, participate, and contribute in a variety of activities. One rapidly growing technology is that of the mobile (cell) phone and the potential it offers as a new media. Digital media has become evident in almost every aspect of everyday life.

2.3.2.2 Dynamic environment

Daily life, in this age of convergence is a dynamic environment (England & Finney 2011), being continuously shaped by interaction, expression, communication, collaboration and entertainment with a variety of media in a digital format. Interactive technologies have created a world with a participatory culture in a digital life. Known as user contributed content, social media and Web 2.0, new content types and interactive media experiences are readily available for the producer and consumer – the new prosumer who can now comment on a Facebook page, sign an online petition, contribute to a blog, upload to YouTube etc. with ease.

An equally impressive phenomenon has been the ways in which digital tools have allowed “everyday people” to produce and not just consume media. Today, they can use digital tools to create movies, games, music, newscasts, and many other things. And the products of these efforts can compete with professional work in appearance, and often in quality.

(Jenkins 2006a)
The reality is that technology, access to it and usage is changing from day to day but also there is on-going change in the understanding and implications of these technologies. “Not only is the real world a moving target. So is our perception of it” (Feldman 2005).

Interactive digital media supports work (basic mastery of using interactive media platforms), personal life, education, travel, entertainment and other daily activities. It is becoming increasingly important to have access to this participatory culture as more services are becoming an online presence for pleasure, social connection, e-commerce, e-business, e-government, work and education.

2.3.3 Ireland as a digitally empowered society

In the Irish context, in July 2013, the Government launched the National Digital Strategy for Ireland (Phase 1 – Digital Engagement) in which “digital” is considered to be the:

- Use of online technology and ICT to enable Government, Business and Individuals to deliver, participate and inform themselves across a vast multitude of economic and social areas (2013)

It is planned that Ireland should be a digitally empowered society in business, citizen engagement, and education. The Irish Citizen is placed at the centre of the e-Government strategy of “digital adoption” with intention to:

- Transform how citizens and businesses interact with the Government sector (online services and information),
- Ensure businesses utilize digital technology to enter the fast growing online market,
- Improve educational outcomes through the promotion of e-learning.

Four areas of action have been identified: connectivity (broadband availability), capability (skills and knowledge), content (application use) and community (participation)

Meanwhile, in Europe, the Digital Agenda for Europe has been adopted to “stimulate the digital economy and address societal challenges through ICT and to consider:
“ICT skills and jobs, public services for the citizens, research & innovation and technology enablers, trust & security, entrepreneurship and the digital single market.”

(Digital Agenda for Europe - a Europe 2020 initiative 2013)

In June of 2013, co-organised with the Irish Presidency of the EU Council, Ireland hosted the Digital Agenda Assembly. Both Minister Pat Rabbitte and Neelie Kroes, Vice-President of the European Commission, responsible for Europe’s Digital Agenda discussed how a digital economy is integral to Europe’s future. Vice President Kroes is adamant that “the economy of the future is digital” and not having digital skills will isolate citizens from opportunity (Kroes 2012). Educating for the digital age presents many challenges, not alone for Governments but especially for adults re-entering the world of learning in education.

2.4 Theories of Learning

“Learning as a process (rather than an end product) focuses on what happens when learning takes place. Explanations of what happens are called learning theories…” (Merriam & Caffarella 1991)

It is beyond the scope of this paper to consider learning theory conceptual frameworks in any detail but it would be remiss not to briefly discuss and acknowledge theories of learning as they underpin our understanding of aspects of adult learning.

Marriam and Caffarella propose that there are four main orientations to learning (involving contrasting ideas as to the purpose and process of learning and education - and the role that educators may take): Behaviourist, Cognitivist, Social/situational learning and Humanist orientations. These may incorporate numerous learning theories - behavioural theory, cognitive theory, constructivist theory, humanistic theory and social developmental theory (1991 pp. 123-139).

2.4.1 Behaviourism

Behaviourists define learning as an observable change in behaviour. The learner is assumed to be passive, learning is a change in behaviour and leads to knowing information using reinforcement (understanding may not be involved). Behavioural learning is evident in the adult learning and training world today through job and skill training, self-instructional software, online tutorials etc.
2.4.2 Cognitivism

On the other hand, the Cognitivist orientation considers learning to be a process of accommodation, assimilation, or rejection to construct new conceptual structures, meaningful representations, or new mental models to replace the old ones. Learners combine experience (action) and thought (reflection) to build meaning and support the creation of new knowledge. (Adams & Burns 1999)

2.4.3 Constructivism

Learning is seen as an active process according to the Constructivist theory. When Learners acquire new skills (knowledge and learning) based on their own knowledge and previous experiences and the Learner sees relationships between the new concepts, previous knowledge and new ideas, a constructivist process is considered to have taken place. The learning has been shaped by the learners own engagement and participation as they collaborate, listen and discuss and have an active role in their own learning.

2.4.4 Social learning

In the digital world of the 21st century learning, with the “always on” online presence of social media, social learning can become an engagement in collaborative problem solving activities with a More Knowledgeable Other (Vygotsky 1978). The Zone of Proximal development (ZPD) was proposed by Vygotsky as the distance between what a learner can achieve alone and the achievement which may be reached when supported by others – teacher, peer group etc.

The concept of social learning was further developed in the early 1990s by Jean Lave and Etienne Wenger who proposed a model of situated learning whereby learning involves a process of engagement in a community of practice. Social interaction is critical as learners become involved in communities of practice which share values, beliefs and behaviours (Merriam & Caffarella 1991). Wenger offers the definition as:

“Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly.”

(Wenger 2006)

Adults then begin to “make explicit their own knowledge” in the discovery and shaping of experiences in Communities of Practice (Hansman 2001).
2.4.5 Context based learning

When learners learn from one another through observation, imitation and modelling, theorist Albert Bandura (1977) proposes that context based learning has taken place. Learning from experience and collaboration in a social environment is not a new concept in understanding Adult Learning. Context based learning was discussed by Dewey in 1916 (Dewey 1916)

“(t)he social environment…is truly educative in the effects in the degree in which an individual shares or participates in some conjoint activity”

(Hansman 2001)

2.4.6 Self-directed learning

Self-directed learning occurs when learners accept the management of their own learning in that they make responsible decisions about their learning including what and how they learn. They are self-directed, creative and innovative (Confessore & Kops 1998). Educator and researcher, Professor Allen Tough maintains that while learners may consult with others, they still retain control over their own learning and take responsibility for that learning. But, he believed that it is only one part of the “whole picture of adult learning” and that it would be wrong to ignore the other ways in which adult learn. This is an important consideration as in the integration of digital media into the learning environment (CD-ROM, research tools, working on the web, online lessons etc.) it is important to consider that, in the world of Adult learners, both constructivist and instructivist approaches may be necessary at a very basic level for some learners and as a scaffold for others.

Challenging the belief that adults are self-directed learners Brookfield maintains that there are questions regarding the understanding of self-direction (Brookfield 1995). He suggests that other factors have been ignored; the cross cultural dimension, gender, use of social networks and peer groups and the “cultural formation of the self”

“Citing self-direction, adults can deny the importance of collective action, common interests and their basic interdependence in favour of an obsessive focus on the self.”

(Brookfield 1995)

2.4.7 Connectivism

As society has become more globalised through the development of new medias and technologies, a theory of Connectivism: A Learning Theory for the Digital Age has
emerged. George Siemens, acknowledges the theories of Behaviorism, Cognitivism and Constructivism, but argues that they were not developed in an age of technology.

Over the last twenty years, technology has reorganized how we live, how we communicate, and how we learn. Learning needs and theories that describe learning principles and processes, should be reflective of underlying social environments

(Siemens 2004)

For Siemens, technology and connection making must be included as learning activities begin to move learning theories into a digital age. Learning is no longer an individual and internal activity. Using new tools (digital and social media) alter how people work and function. Connecting with others in today’s world of new medias enables learners to move from learning in an individualistic way to learning from the knowledge of others through the platforms of Twitter, Facebook, Wikipedia, RSS etc. (Chen & Bryer 2012) This supports the assertion of Siemens that in a connectivist world, new learning skills are needed for “learners to flourish in a digital era” (Siemens 2004). “Learning is a remarkably social process” (Seely Brown 2009).

2.5 Multiple Intelligences (MI)

Traditionally, theorists have proposed that Intelligence is a single, general level of cognitive ability referred to as the g-factor (general intelligence) in which an overall score -IQ score- is assigned to each person characterizing how that person is “smart.” It is thought that this general intelligence influences a person’s ability to adapt to various environments and solve problems in varying situations. This view has been challenged by Harvard Professor and Psychologist, Howard Gardner: “An intelligence is the ability to solve problems or to create products, that are valued within one or more cultural settings” (Gardner 1983).

Gardner theorized that people can be smart in a number of ways. “It’s not how smart you are that matters, what really counts is how you are smart”. He proposed that people have multiple intelligences and that there are many possible combinations which are distinct but operate together.
The Multiple Intelligences proposed by Gardner are:

- Linguistic intelligence (Use of language-ability to understand words and language.)
- Logical-mathematical Intelligence (Cause and effect and the ability to work with data – collect, organize, interpret etc. – cited by Gardner as being favoured in schools.)
- Spatial Intelligence (Visual thinking-ability to form a mental model)
- Musical Intelligence (Understand, interpret and create musical pitch, timbre, rhythm etc.)
- Bodily-kinesthetic Intelligence (information is processed through the senses)
- Interpersonal Intelligence (Interpret and respond to the moods, emotions, actions of others)
- Intrapersonal Intelligence (Ability to know oneself)

![Multiple Intelligences](image)

- Naturalist intelligence in tune with nature and are often interested in nurturing, exploring the environment and learning about other species.

In adapting the theory of MI to Education and the world of new technologies, Gardner has called on educators to fashion teaching and learning to take advantage of the

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1 Gardner initially proposed seven intelligences and later added the **Naturalist Intelligence**: Ability to recognize and categorize plants, animals and other objects in nature. A ninth Intelligence has been posited by Gardner as that of **Existential Intelligence**: Sensitivity and capacity to tackle deep questions about human existence, such as the meaning of life, why do we die, and how did we get here?
multiplicity of intelligences (Gardner 2000). Collaborative learning activities allow learners to draw on their interpersonal intelligence and project based activities may incorporate all intelligences. In the new media world, blogging and podcasts may address verbal intelligence, mind mapping will appeal to logical intelligence with visual intelligences supported by images, video etc. (Appendix F)

2.6 Learning styles

The learning environment is populated by learners who bring attitudes, needs preconceptions and varying styles and approaches to learning. A search through academic databases, on the web or in the University library will present numerous reports, journals, discussions and findings on the concept of Learning styles and learning style theories which are no longer generated solely by the world of psychology but now presented from a variety of perspectives by researchers and investigators in the worlds of industry, business and education (DeBello 1990), (Hawk & Shah 2007), (Cassidy 2004). A style may be considered a preference - not an ability - in how the learner uses ability.

2.6.1 Learning styles domains

From a very general perspective, three main domains of learning styles have been identified:

- Sensory – VARK Inventory (Neil Fleming 1987). Visual, Aural, Read/write and Kinaesthetic Sensory modal inventory explores Learner’s preference for working with information. (Appendix E)
- Personality – Myers Briggs
- Aptitude – Gardner

A fourth style called the Neomillennial Model is proposed by Dieterle, Dede & Schrier (Dieterle et al 2007) as a media based /mediated learning style which has evolved due to the new technologies and resulting connectivity.

2.6.2 Evidence for the concept of learning styles

There is much dissent in discussions and published work on the topic of learning styles “at present, there is no adequate evidence base to justify incorporating learning-styles assessments into general educational practice” (Pashler et al 2008).
Online conferences and videos offer evidence also. “There is no credible evidence that learning styles exist” is the opening sentence of an article: The Myth of Learning Styles published in Change ²by Cedar Riener and Daniel Willingham. This is further expanded in the widely cited YouTube video that by Willingham that Learning Styles Don't Exist (Willingham 2008).

However, for all the research and evidence to prove the non-existence of learning styles, there is also a large body of evidence discussing the variety of learning styles and the implications for student learning outcomes (Felder 2010), (Romanelli et al 2009), (DeVita 2001), (Cook 2005), (Hawk & Shah 2007), (Warren 2013). The cited works are by no means comprehensive or exhaustive.

2.7 Thinking styles

Learning styles and multiple intelligences are only part of the picture as another style is evident. A thinking style, also known as a cognitive style, describes how Learners process information - think, perceive and remember information (this is different to cognitive ability). Originally proposed by American psychologist, Gordon Allport in 1937 (often referred to as a founding father of personality psychology), much research and discussion has been held into the concept of thinking styles (Robertson 1985) (Dunn, DeBello, Brennan, Krimsky, & Murrain 1981, Riding & Cheema 1991 cited in Liu & Ginther 1999).

What can be accepted is that in the world of digital media, content is delivered in a variety of modalities. To avoid being one dimensional in the multi-dimensional digital world, best practice in delivery would be to incorporate a variety of teaching styles when working with digital media to take account of a variety of cognitive, sensory and personality type learning styles of the Learners to help them understand learning preferences (styles) so that they can enable and capitalise on them as learning strengths.

2.8 “All learning is thinking”

Comprehensive cognitive research was undertaken in the late 1980s by Dr Robert Marzano and other researchers (Brandt, Hughes, Jones, Preisseisen, Rankin and Suhor) to explore threads running through research and theory in the areas of cognition and

² Change is a magazine dealing with contemporary issues in higher learning
psychology related to learning. The basic premise for this research is that all learning is thinking. The results of this research were published as a framework (not a new concept or theory) in the Dimensions of Thinking: A Framework for Curriculum and Instruction (Marzano et al. 1988).

Building on the Dimensions of Thinking framework, a concept of Five Dimensions of Learning (DOL) which links thinking and learning was proposed by Marzano and Pickering as a learning centered framework for curriculum and instruction (to promote learner centred instruction emphasising the constructivist nature of learning) offering teaching and learning strategies as an integrative model (Marzano & Pickering 1997).

The premise of this model is that five types of thinking – the five Dimensions of Learning - are essential to successful learning in the learning process.

“People sometimes ask if Dimensions is another thinking skills model. The answer is that any time we discuss learning, we must discuss thinking.”
(Marzano & Pickering 1997)

Inherent in the framework are the six basic assumptions that:

1. Instruction must reflect what is known about how learning occurs.
2. Learning involves a complex system of interactive processes which must incorporate the five dimensions of thinking.
3. What is known about learning indicates that the most effective way to promote learning is to ensure that instruction focuses on interdisciplinary curricular themes.
4. Teaching should include explicit teaching of higher-level attitudes and perceptions and mental habits that facilitate learning.
5. Instruction should be two tiered with at least two types of instruction: teacher-directed and student-directed.
6. Assessment should focus on student use of knowledge and complex reasoning rather than recall of low-level information (Marzano et al. 1997).

3 This framework initially was researched, developed and tested by a team of researchers headed by Robert Marzano under the umbrella of the Mid-continent Research for Education and Learning (McREL) in collaboration with the Association for Supervision and Curriculum Development (ASCD). The McREL research centre, one of 10 education laboratories funded by US Federal Government, is renowned for its work on teachers' pedagogy. This framework has been adopted by many US States and is also in practice in Australia, Asia and Europe. Currently, there do not appear to be figures on the use of this programme but an internet search will reveal that it is being described regularly in school prospectuses as a method of instruction and assessment.
While the focus of the Dimensions of learning framework is on student learning, the researchers propose that the framework is as effective and as valid a model for the adult learning experience

2.9 Adult Learning: Andragogy

Andragogy - “the Art and science of helping adults learn”⁴ - is one of the most important concepts in the field of adult learning and education.

"Andragogy (adult education) calls for program builders and teachers who are person-centered, who don’t teach subject matter but rather help persons learn"  
(Knowles 1970 )

A pioneer in the field of Adult Learning in the 1970s, the work of Malcolm S Knowles continues to influence the work of adult educators today. The experiential learning vision of education which sees adult learning moving beyond the classroom and formal curricula as proposed by Educator Eduard C. Lindeman is evident in Knowles’s work.

Andragogy assumes that adult learners have unique and distinctive characteristics:

- **Self-Concept** develops as a person matures and moves from dependency to self-directness and autonomy. Learning is Learner centred and self-directed. Adults need to be actively involved in the learning process.

- **Experience**: Learning is Life centred. Adults bring experiences with them to the learning environment. They draw upon their experiences and connect learning with life experience to aid learning.

- **Readiness**: The learning readiness of adults is closely related to the assumption of new social roles – the Learner’s need to know - relevance. This is most evident at times of transition - career change, job loss/job displacement, introduction of new technologies etc.

- **Orientation**: Adults want practical applications from their learning which must offer value and benefit to the adult learner outside the classroom environment. New learning is goal oriented in that, as the Adult learner gains new knowledge, he or she wants to apply it immediately in practical problem solving in life situations.

⁴ First coined by Eduard Lindeman in 1920 in a paper written with Martha Anderson in which they stated that andragogy was "the true method of adult learning" (Brookfield 1987).
- **Motivation**: Intrinsic motivation will emerge with maturity as the Learners take responsibility for their own learning.

![Figure 4: Knowles postulates of Adult learning](Aptech Global Learning Solutions 2013)

In later work, Knowles expands on the core principles of adult learning to apply them to the use of technology (Knowles 1984).

1. Adults need to know why specific things are being taught.
2. Adults are task oriented in their learning.
3. Adults bring a wide variety of backgrounds of experience.
4. Adults have a deep psychological need to be self-directing. Effective instruction will allow learners to discover things for themselves, providing guidance and help when mistakes are made.

All adult learners bring life experience, obligations and commitments to the learning environment.

As a commentary, both Lindeman and Knowles theories can be applied equally today in the world of adult learning where significant personal experience and self-directed learning is ever present in the world of digital medias, the online experience, problem based learning and self-directed learning. It should be noted that criticism by Tough (1983) and Merriam and Cafarella (1999) has been levied at Knowles’ approach claiming that it appears to have been tested on predominantly “middle class” learners and questioning whether his assumptions true for all adults and indeed whether the principles are applicable to only adults (Brown 2004). Further discussion is beyond the scope of this paper.

Moving beyond Andragogy, Professor Jack Mezirow, discusses a theory of transformative learning - learning which goes beyond the acquisition of content
knowledge as adults learn to become more reflective and think for themselves which in turn fosters being more open to new perspectives and ideas (Mezirow 1991) (Mezirow 1997).

Merriam expanded on this and stated that:

“Transformational Learning is about change, dramatic, fundamental change in the way we see ourselves and the world in which we live”.  
(Merriam et al 2007)

Stephen Brookfield (1986) proposes that while Learners need to be open and receptive to learning to learn, it must be recognised that:

- Adult participation in learning is voluntary even though the circumstances leading to it may not be.
- Learner self-worth is core and effective practice is characterised by a respect among participants for each other's self-worth.
- Facilitation is collaborative for both facilitator and learner.
- Praxis is placed at the heart of effective facilitation. Borrowing from Paulo Freire, the concept of praxis refers to a process – action (physical, mental, attitude), reflection (critical reflection must be fostered) and experimentation.
- Self-directed empowered adults are nurtured which then impacts on their worlds of learning, home, work and social circumstances.

2.10 Adult learners – who are they?

Learning implies acquiring a set of skills, attitudes, aptitudes, and competencies. It is more than knowing things; it is being able to figure out how to do new things—often with little time or information. It is knowing how to engage in inquiry, lifelong learning, and civic engagement.  
(Oblinger 2005)

Adult learning is a broad term that may embrace knowledge acquired through a formal education which may be related to self-improvement; job related training, community education and or a change in economic circumstances.

Adult learners bring much to their learning environment with a wealth of experience from their upbringing, beliefs, interests, likes and dislikes and for many the impact of change in economic circumstances.
In the economic, cultural, social and technological changing worlds of the 21st century, it may be said that any definition of adult learning must encompass and acknowledge change:

- Change in attitude,
- Change in knowledge,
- Change in behaviour,
- Change in thinking,
- Change in the acquisition of information and skills through new technologies.

In the 21st century world, adult learning must embrace new ways of thinking and working, the new tools for working (digital technologies and the literacies required) and the new skills required for participating in this new digitised world.

All learners are unique. They come to the educational environment with varying experiences, interests, knowledge, abilities, and perceptions of the world. Students and learners of all ages now inhabit a virtual world of learning. A digital generation of learners has grown which is profoundly different from previous generations. This generation manipulates, remixes, consumes and shares content as the available digital media and digital tools offer information (requiring the skills and literacies to gather, evaluate and use it), communication, collaboration and yet individual learning in an online world. They are experienced computer and Internet users.

However, not all students have grown up in this world. There are those who have had little or no interaction with new technology. In describing the differences observed between the attitudes of younger and older people regarding digital technology, American writer Marc Prensky wrote of a “discontinuity event” in which today’s students/learners, born after 1980 (now aged 30+), learn differently due to technology being an integral part of their lives as they have grown up with interactive media. Prensky spoke of “digital natives” - those who speak the language of technology as it has been integrated into their lives - as distinct from the non-natives, “digital immigrants” who have adopted the new technology but bring an “accent” (Prensky 2001). The similar concept of the “Net generation” was also proposed by Tapscott (2000). These concepts have sparked intense and wide debate with many critics (Helsper & Eynon 2009), (Vaidhyanathan 2008), (Bennett et al 2008). The scholarly discourse continues.
2.11 Learning in the ubiquitous world of Technology

Education is being changed by technological influences (Frawley 2012). While some adult learners come to learning with digital experience and knowledge, there are those who are “digitally deficient”. Their experiences will determine their interaction with technology. Educationalist and Researcher, Brown proposes that learning is not as a response to teaching but as a result of the framework that fosters learning (2009). Given the impact of the new technologies, both the faces of learning and opportunities around learning are changing both for learners (students and adults) and the educators. There is a very definitive shift from the teacher led model of learning to discovery based learning (Hansman 2001).

“…the social environment ….is truly educative in the effects in the degree in which the individual shares or participates in some conjoint activity.”

(Dewey 1916)

Dewey believed that the ability of a person to learn was dependent on many things, one of which was the environment and that Learners should be involved in real-life tasks and challenges.

The Constructivist approach suggests that technology can enrich learner use of a variety of resources and help gain an understanding about the world by constructing knowledge, using thinking skills, understanding and applying learning and being an active participant (Marlowe & Page 2005). Classrooms become learner centered when the teacher launches and the learner explores. But, are there other dimensions which may impact on how adults learn?

2.12 Dimensions of Learning framework

The Learner is at the centre of the learning process. The five types of thinking (learning) involved in the learning process - the five dimensions - identified in the Dimensions of Learning framework are:

- Dimension 1: Positive attitudes and perceptions about learning.
- Dimension 2: Thinking used to acquire and integrate knowledge.
- Dimension 3: Thinking used to extend and refine knowledge.
- Dimension 4: Thinking involved in using knowledge meaningfully.
- Dimension 5: Productive habits of mind.
Dimension 1 – creating positive attitudes and perceptions - and Dimension 5 – productive habits of mind are considered to be present in every learning experience. Against the backdrop of Dimensions 1 & 5, learners can more effectively think (learn) in the other three Dimensions. The Dimensions of Learning framework aims to provide learners with the skills, strategies and processes for lifelong learning.

2.12.1 Dimension 1 – Thinking in Positive Attitudes and Perceptions.

The ability to learn can be affected by attitudes and perceptions. As such, the focus of effective planning and instruction must be to establish any underlying attitudes around learning and establish positive ones. This is considered to be a shared responsibility of both the teacher and the learner.

Develop positive attitudes and perceptions about Classroom climate:
- Feel accepted by teacher and peers
- Experience and perceive a sense of comfort and order

Develop positive attitudes and perceptions about Classroom Tasks:
- Help learners perceive tasks as valuable and interesting
- Help learners to believe they have the ability and resources to complete tasks
- Help learners to understand and be clear about tasks

2.12.2 Dimension 2 – Thinking involved in acquiring and integrating knowledge.

Learners are facilitated to integrate new knowledge with existing knowledge, organize that information and help make it relevant to their learning. Two types of knowledge have been identified and are considered to be learned differently:

1. Declarative Knowledge — facts, concepts, generalizations, and principles. Learners must construct meaning, organise and store declarative knowledge.
2. Procedural Knowledge — skills, procedures and processes. Learners must construct models, shape and internalise procedural knowledge.

2.12.3 Dimension 3 – Extend and refine knowledge.

Knowledge becomes more meaningful when it is examined and analysed to see distinctions, clear up misconceptions etc. The reasoning processes which support this are:
• Comparing,
• Classifying,
• Abstracting
• Inductive reasoning,
• Deductive reasoning,
• Creating and analysing support,
• Analysing errors,
• Analysing perspectives

2.12.4 Dimension 4 – Use knowledge meaningfully

This dimension considers how the thinking involved in learning can be used in a meaningful way. Learners apply new learning to perform meaningful tasks using complex thinking and reasoning processes of decision making, investigation, enquiry, problem solving and invention. Research indicates that when learners use knowledge to perform meaningful tasks, then, the most effective learning occurs rather than simply remembering, collecting or recognising knowledge. The processes required to use knowledge meaningfully are:

• Decision-Making,
• Problem-Solving,
• Invention,
• Experimental Inquiry,
• Investigation,
• Systems Analysis.

2.12.5 Dimension 5 - Habits of Mind

These habits facilitate and encourage critical, creative, ethical, responsible and self-regulated thinking. Encouraging and enabling learners to develop these mental habits will enable them to learn on their own what they need to learn/know at whatever stage of their lives they are at. This is central to the process of lifelong learning.

…developing mental habits that will enable individuals to learn on their own, whatever they want or need at whatever point in their lives is more important than just content acquisition.

(Marzano et al 1993)
Key Elements of Productive Habits of Mind dimension are:

- **Critical Thinking**: be clear and seek clarity, maintain an open mind, restrain impulsivity, take a position when the situation requires it, respond appropriately to others’ feelings and levels of knowledge and persevere.

- **Creative Thinking**: push the limits of knowledge and abilities, generate, trust and maintain standards of evaluation, generate new ways of viewing a situation outside the boundaries of standard conventions.

- **Self-Regulation (metacognition)**: monitor thinking, plan appropriately, identify and use necessary resources, respond appropriately to feedback, evaluate the effectiveness of personal actions.

![Figure 5: Dimensions of Learning](Marzano et al 1993)

Effective learning is a product of the interaction of these dimensional types of thinking as no one dimension exists in isolation. The types of thinking are not sequential or discrete. Each dimension of learning is considered to link to and support the others and may overlap. The Learners attitudes and perceptions (D1) and habits of mind (D5) frame the learning process.

### 2.12.6 Assessment

Central to the framework of Dimensions of Learning is the assessment of learner outcomes – the learning itself. Throughout the framework, performance tasks are integrated to allow the learners to demonstrate their ability to apply the knowledge and skills outside the learning environment to ensure that the focus is on learner use of
knowledge and the reasoning processes rather than recall. Comprehensive performance assessment rubrics integrate assessment into the instruction plan to ultimately provide feedback for the learner and teacher (Marzano et al 1993).

2.13 Conclusion

This literature review of Chapter 2 is the core work underpinning the research undertaken in this study. The 4Cs of 21st century learning were introduced as integral to living in the digital world. While the theories of adult learning, learning styles and multiple intelligences were briefly discussed, the Dimensions of Learning framework was introduced in detail. The next chapter will focus on research strategy and the methodology applied to the study.
Chapter Three - Research methodology

3.1 Introduction

The previous chapter examined the current literature and placed the research within the Dimensions of Learning framework. This chapter will present an overview of the research process and provide the rationale for the chosen methodology. It will explore the research design and plan with reference to data collection, reliability and validity, triangulation and ethics and integrity.

3.2 What is research?

The core of research is that enquiry and investigation are conducted in a planned and systematic manner.

As proposed by Cresswell, research is

A cyclical process of steps that typically begins with identifying a research problem or issue of study. It then involves reviewing the literature, specifying a purpose for the study, collecting and analyzing data, and forming an interpretation of information. This process culminates in a report, disseminated to audiences that is evaluated and used in the educational community.

(Creswell 2002)

Or more concisely proposed by Merriam:

Research is a systematic process by which we know more about something than we did before engaging in the process.

(Merriam 2009)

3.3 Aim of the research

The aim of the research process is to empirically evaluate the application of the Dimensions of Learning framework when applied to an adult learning environment to activate the 21st century thinking skills of critical thinking, communication, collaboration and creativity required in today’s digital world.

3.4 The Research environment

The Vocational Training Opportunities Scheme (VTOS) is a daytime general education and work related two year training programme for unemployed adults run by the Department of Education and Skills and operated through the VECs (now ETBs).
The local Ennis VTOS programme caters for 80 learners. The aim of the programme is to provide opportunities to gain confidence, certification and to up skill for entry or re-entry to the 21st century workforce or for progression to third level education.

Training on the Ennis VTOS programme is currently offered in certified courses of Business administration, Community care, Art, Craft/Graphic design and Employment skills at levels ranging from Level 3 to Level 5 on the National Frameworks of Qualifications (NFQ).

![National Framework of Qualifications](image)

Assessment and quality assurance is under the remit of the Quality and Qualifications Ireland (QQI). (QQI Quality and Qualifications Ireland 2013) The national framework comprises ten levels and a range of standards for knowledge, skill and competence are determined for each level.

Meeting learner needs is central to the work of training and assessment. A common theme core to the delivery of components and modules is linking across components to ensure that all learners have expanded opportunities in using and working with digital media.

### 3.5 Research cohort

The research cohort is positioned within an Adult Learning ICT environment with internet access, online and multimedia resources available for the instruction.
(scaffolding) as part of the research. There has been an element of cross sectional research incorporated into the research design as the pilot survey opened the research to other Adult Learners on the Ennis VTOS programme.

3.5.1 Population and sampling Selection
The population and sampling selection was a convenience sample group of 11 adult learners on their first year of the VTOS programme. The rationale was that the Researcher had ease of access to the group with timetabled hours being available for research through new learning. Availability bias may be mooted as the research was conducted on participants “easily to hand”. There was also an element of purposeful sampling here as working with this group of Adult learners have the characteristics of age range, three group members do not have English as a first language. The gender balance within the group was: 64% female and 36% male. Participants were considered to be partners in the research process.

3.5.2 Pilot group
Internal validity was maintained as a random sample/non-probability sampling (some people had no opportunity to participate) pilot group was identified with whom to conduct preliminary research in which other Learners on the VTOS programme were invited to complete the e-research online survey questionnaire.

3.5.3 Role of Researcher
There was a duality of role in this research. The primary role of the researcher with this group was that of Teacher on the VTOS programme with a relationship with the research participants. This brought an emic perspective as being an “insider”. Adopting the role of researcher brought an etic perspective as “theories, hypothesis, perspectives, and concepts from outside of the setting being studied” were brought to the research (President & Fellows Harvard University 2008). Other roles within the research process included:

- Planner
- Catalyser
- Teacher
- Listener
- Synthesizer
- Leader
- Facilitator
- Designer
- Observer
- Reporter

(O'Brien 2001)
3.6 Timeline

In total the timeline for this research study spanned eleven months from the initial proposal. The operational stage of the research took place over a two week period with a total of fifteen hours and fifteen minutes face contact research time allocated to the primary research. (Appendix M)

3.7 The Research process

In the operationalization of the research process, within the framework of the Dimensions of Learning, tasks were created and presented to facilitate the learner/research cohort to:

- Submit their learner experiences (D1 – attitudes and perceptions to the learning environment and digital media).
- Up-skill the group in the Windows Live moviemaker software and recap on the declarative knowledge concepts of plagiarism and copyright. (D2 Acquire knowledge and D3 – refine knowledge).
- Demonstrate their understanding and ability to apply knowledge, skills and habits of mind to the creation of digital narrative. (D4- use knowledge meaningfully and D5 – develop productive habits of mind).

Initially, research permissions were sought and received to work with the cohort within the VTOS programme in the Adult Education environment. All “potential” participants were presented a detailed and transparent overview of research process. An e-research questionnaire survey was piloted and matters which arose were rectified. This survey was then administered to the research participants to establish attitudes and perceptions to digital media and the learning environment.

The practical tasks of the research included an introduction to learning styles and multiple intelligences and all participants undertook online surveys to determine their individual learning styles and intelligences.

Among the Dimension of Learning strategies introduced to the group were:

- “Two truths and a Lie” which revealed how well the group knew each other.
- Collaborative exercise to produce a wordle describing the classroom environment.
• Story boarding, KWL and concept/mind-mapping strategies to foster planning in the learning process.

The task of creating a digital narrative was introduced to the group. Through the process, the researcher observed the progress, facilitated scaffolding when required, facilitated a peer review and administered the post research e-survey.

3.8 The Task: Rationale for digital narrative

Story telling is an age old mode of communication in the form of teaching and learning. In the world of the 21st century, digital storytelling combines new technologies with communication, language and media literacy skill to create, present, distribute and share. In the learning experience of the creation and presentation of a story (narrative) with digital content including image, sound and video, learners had an opportunity to create new ways of collaboration, communication, visual expression, sharing (present and distribute their story) with self-assessment integral to the project. The content standards of the media literacy skills required and essential to the digital project included media file management, product construction and publishing. The required cognitive skills of planning, self-regulation, critical and creative thinking were integral to the task. The lifelong learning standards drawn upon included the application of knowledge and skills which the learners brought to their own story (narrative).

3.9 Research framework

In planning the research methodology, consideration was given to a number of research methodologies.

3.9.1 Research paradigm

In the positivist epistemology paradigm (an organised method of research) a quantitative approach is taken which measures and searches for relationships to prove things. In the context of this research process, quantitative data is elicited through e-research using online questionnaires.

The interpretivist (or anti-positivist paradigm) focuses on qualitative data. Research is conducted and based on the individual participants’ own category of meaning and personal experiences. It focuses on the interpretation, construction and meaning of experiences (Merriam 2009).
3.9.2 Educational Research

In the arena of educational research, it is generally the case that both the researcher and collaborating research participants develop skills through new learning experiences. It becomes participatory. Individuals become the knowledge makers as they explore their practice. Approaches to educational research may be historical, experimental and descriptive (“set out to describe and interpret what is”) as proposed by Verma and Mallick (cited in Cohen et al 2000).

3.9.3 Action Research

Action Research (AR) is practitioner based research which lends itself to a variety of research methods both qualitative and quantitative in which the results of a real world intervention are studied but that the purpose is to improve practice (Griffiths 1998) and where appropriate solve social problems. Educational reformer, John Dewey proposed that Learners learn when learning is based on meaningful life tasks. By including the research subjects in a participatory action research task, they become part of the process for change and the research is itself seen as the agent of change.

At the core of Action Research is that it is only when data is collected and analysed that it can then be placed within the framework of current literature and investigation. The ultimate goal is that the final core and most challenging stage is that of taking action and responsibility for change based on the research.

3.9.4 Case Study

“As a research strategy, the case study is used in many situations to contribute to our knowledge of individual, group, organizational, social, political and related phenomena”

(Yin 2009)

Yin (one of the most well cited proponents on the use of case studies) proposes the use of the case study in questioning some aspect of real life social phenomena, the how and why something works (or not). It is generally conducted because the case may be of intrinsic interest or value.
It can offer the “specific instance that is frequently designed to illustrate a more general principle” according to Nisbet and Watt, 1984: p72 as cited in Research methods in Education (Cohen et al 2000). But, the case study also considers the “uniqueness of real individuals and situations through accessible accounts” (Cohen et al 2000) while Merriam (2009) proposes that it is “an intensive, holistic description and analysis of a single entity, phenomenon, or social unit”.

According to Yin (2009), case studies can be classified according to their outcomes. Exploration of a topic (exploratory case study) as a pilot can lead to other research or studies. The exploratory case study can only provide direction as “the people studied in exploratory research may not be typical of the larger population of interest. That is, the sample is likely not a representative one.” (Crossman 2013).

Descriptive case studies consider the what, when, where, and how and provide narrative accounts. Explanatory case studies test the theories, the why of things. These classifications are not rigid as a study may have elements of one or more of these purposes. Another type of case study proposed by Stenhouse (Cohen et al 2000) is that of the educational case study which is concerned with the understanding of educational
action to enrich the discourse and to systematically reflect evidence (p.183). Ultimately the choice of the case study design depends on the research question.

### 3.9.4.1 Strengths and limitations of the case study

The case study approach has both strengths and limitations. The case study which has a base in reality can support qualitative research in revealing information not readily quantifiable and recordable through other methods. It may be conducted by a single researcher not requiring a full research team. According to Nisbet and Watt, insight gleaned from real life contexts may provide insight for further research (cited in Cohen et al 2000).

However, it is proposed that the weaknesses of the case study may include a number of other factors. Researcher bias may be a weakness as the researcher’s own subjective feeling may influence the case study. Concerns have been raised that results may not be generalised to a wider population. The case study may be time consuming and difficult to replicate.

Yin (2009) argues that prejudices against the case study approach arise from: a) lack of rigor, b) little basis for scientific generalisation, c) long time span with extensive documentation and d) case studies cannot address causal issues. However, Yin states that the concerns can be allayed. This is supported by Flyvberg in the journal article: Five Misunderstandings about Case Study Research in which the author examines the “misunderstandings”:

(a) theoretical knowledge is more valuable than practical knowledge; (b) one cannot generalize from a single case, therefore, the single-case study cannot contribute to scientific development; (c) the case study is most useful for generating hypotheses, whereas other methods are more suitable for hypotheses testing and theory building; (d) the case study contains a bias toward verification; and (e) it is often difficult to summarize specific case studies.

(Flyvberg 2006)

Flyvberg’s conclusion is that the case study is a necessary and sufficient method for certain important research tasks in the social sciences, and it is a method that holds up well when compared to other methods in the gamut of social science research methodology.
3.9.5 Case study vs. Action Research

The qualitative approach using a case study with the option to employ a variety of research tools conducted over a period of time to explore educational action was adopted as being the most appropriate for this exploration of adapting the Dimensions of Learning framework to the adult learning environment.

The use of Action Research based enquiry had been considered as, at its core, is the goal of improving practice based on findings. Given that that Dimensions of Learning framework is about planning instruction and assessment based on the critical aspects of learning to improve practice, it would seem to have been an appropriate choice. Carr and Kemmis (cited in Waters-Adams 2006) suggest action research leads to “the improvement of practice; the improvement of the understanding of practice; the improvement of the situation in which the practice takes place.”

However, it was decided that the dictates of the process of AR would have placed too many limitations on the study.

3.10 Research design and planning

“Operationalization involves specifying exactly how you are going to measure your research concepts” (Babbie 2001).

Case studies rely on multiple sources of evidence and as such a variety of tools was used in data collection (multi study method). There are many advantages to using a multi method of research. As discussed by Dr Tamzin Batterson in the UL Module Principles & Practices of Research, they include a “greater opportunity for mapping, analysis and interpretation of experience” which can generate a more holistic and complete understanding (Batteson 2012).

3.10.1 Secondary Research

Extensive resources and materials were consulted and studied to compile a detailed literature review based on the research questions and to examine research methods.

- UL library resources: online public bibliographic database index with online access to articles and other materials, abstracts, citations.
- Published information (books, journals, etc.)
• Unpublished documents (studies in related fields, reports, etc.)
• Contemporary research: conferences and seminars,
• Websites with online searching using Google Scholar.
• Social media: Web searches revealed that academics are using Web technologies to communicate and discuss their ideas through blogs (opinions & beliefs offered online), wikis, podcasts, videos and email discussion lists.
• Use of the CESI email list forum.
• Theses accessed from the UL Repository in the Digital Media Development catalogue.
• Government, European Union and OECD publications

3.10.2 Primary research

The primary research process was based on the existing conceptual framework of the Dimensions of Learning which has been devised with particular reference to student learning (up to age 18 years). However, according to the researchers, Marzano & Pickering, “Dimensions of Learning is as valid a model for adult learning as it is for student learning” (1997). The primary data was collected at source adhering to the planned research design and methodology.

3.10.3 Research tools

In choosing the case study approach based on theoretical considerations, the use of e-research questionnaires as a quantitative method to collect statistical data, informal researcher observation and the creation of digitally mediated content guided the research process.

A Pilot Survey was administered to test the e-questionnaire to pre-empt any problems. Triangulation was implemented in the research by using questionnaires, creation of digital content and a review & evaluation questionnaire based on the principles of the DOL framework.

E-research self-completion questionnaires with pre-scripted questions relevant to the research issue were administered through internet technology using web based survey tools in Google docs. Using the Create a Form option allowed a consistent look and layout with a functionality of various question types: multiple choice (mcq), rating scales, drop down etc. but also facilitated the option to offer Help – in the form of
further explanation. Responses were automatically saved to a spreadsheet for ease of analysis.

Three questionnaires were distributed via a link to the questionnaire accessed through a document placed on the internal server. In general, the questions were behavioural and attitudinal. Behavioural questions measured respondent’s behaviour – what people do? how often they do it? and why they do it? etc. Attitudinal questions measured subjective attributes: respondent’s opinions, perceptions, beliefs and feelings.

The aim was to collect statistical data in quantitative form (descriptive, inferential and explanatory) at a specific moment in time. This empirical data collected was later processed and analysed in the research process. Research results are independent of researcher. Participant opinions, feelings, thoughts etc. were asked for in the surveys thereby gathering qualitative data.

In order to ensure that data captured was as comprehensive as possible, that the questions fully prepared the respondents to offer answers, that the question meant the same thing to each respondent and that the kinds of answers constituted an appropriate response, various question formats were included (Cohen et al 2000). Foddy (1993) explains the process as one of encoding and decoding in which the researcher and learner both play a role in the encoding of requests and decoding of requests. Mindfulness of coding requirements ensured a variety of question formats.

- The researcher must be clear about the nature of the information required and encode a request for this format
- The respondent must decode this request in the way the researcher intends it to be decoded
- The respondent must encode an answer that contains the information researcher has requested
- The researcher must decode an answer as the respondent intended it to be encode

In attempting to reduce measurement error and not to lead the respondents, the following question formats were adopted:

- Classification/closed questions regarding the demographics of age, gender etc.
- Open questions: Qualitative data was returned as respondents were encouraged to give personal experiences/opinions. Particularly effective when considering

The question may not measure the factor it was designed to detect.
Dimension 1 – Attitudes and perceptions to learning but difficult to analyse. No definitive answers can be predicted in this type of question.

- Closed questions with radio button formats: for example - how often do you spend time? There was an element of concern that using closed questions may lead the responses.
- Use of Other: this was factored in to avoid closing the question. A design flaw was that there was no option to expand on the selection of “other” in a number of questions.
- Filter questions: If yes, go to…
- Multiple Choice Questions: Learning styles
- Questions using the Likert scale 5 point scale
- Unstructured/open-ended questions: Your turn… The respondents were given an opportunity to express their opinion. The Learner inventory was designed to add a sense of fun and creativity.

3.10.4 Piloting the questionnaires

3.10.4.1 Surveys using e-research questionnaires

1. **Pilot**: An online questionnaire was completed by other Learners on the programme prior to being issued to the research cohort to ensure the reliability of the questionnaire (Boyton & Greenhaigh 2004). Standardised questionnaires lead to reliability when the same questions presented in the same format and format responses are recorded in a uniform manner.

   a) Piloting to ensure question clarity and identify any problematic errors or ambiguity examined whether the question measured what was intended. Did all respondents share the same understanding of the question?

   b) Information on attitudes to digital media was gathered from the pilot. This was valuable to the management of the VTOS program to inform and aid programme planning.

2. **Pre-research** with Research group:

   a) An online self-completion questionnaire established the interests of individuals and gained a perspective of overall research group. The aim of this was to then tailor the type of user generated narrative to be explored (based on individual interests)
b) This survey established attitudes and perceptions to digital media. This positioned the learner within the Learning environment. (Appendix H)

3. **Post research** review & evaluation feedback questionnaire provided valuable quantitative and qualitative data. (Appendix K)

### 3.10.5 Field notes

Informal observation was incorporated into this study and used by this researcher as a method of gathering data by observing behaviours, events etc. As the method of observation used was a very simple observation, it cannot be considered as rigorous research. As discussed by Cohen et al, it was personal reflection and the validity may not be tested (2000).

As part of this process, field notes were made and taken, primarily as a memory aid (Lofland & Lofland 1984) to ensure continuity of the research process through prior planning and monitoring as the process unfolded. As Kember (2000) has said, it is “too easy to take things for granted without taking some time to stop and reflect”. These have not been incorporated into the study.

### 3.10.6 Assessment

In this research process, assessment was not intended to measure learning outcomes. There was a certain expectation of the entry behaviours and skills of the participants. While this may raise the question of researcher bias, it cannot be ignored that this group had been in a Teacher/Learner relationship for the previous ten months. Assessment was primarily concerned with ascertaining whether or not thinking skills had been stimulated and supported. This was deemed to have been achieved through the successful creation and publishing of a digital narrative in which participants were required to demonstrate their ability to use the strategies introduced, select and analyse digital media formats, apply what they had learned and synthesise the compiled information.

Indirect evidence of learning was evident in the responses to the surveys and management of the new software.
3.11 Reliability & Validity

Professional standards must be applied to the research process to ensure rigour, coherence and consistency. Consistency and replicability underpin reliability. Reliable research “must demonstrate that if it were to be carried out on a similar group of respondents in a similar context…similar results would be found” (Cohen et al 2000). Core to the research process is the question of external validity to question whether the data generated by the study is representative, valid and reliable. Every effort was made to ensure reliability and validity. The success of this may only be discussed on analysis of the findings.

3.12 Triangulation

Triangulation is used in an “attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint” (Cohen et al 2000).

Research validity can be achieved and bias minimised through the strategy of triangulation which refers using more than one approach to the research question and looking at the same data from different perspectives (Cohen et al 2000) (Creswell 1998). Triangulation supports the multi method approach which can strengthen understanding and apply credibility to the findings. Within this study, a between method of triangulation (Denzin 1970) is used to combine quantitative and qualitative data through contrasting methods of survey questionnaires and informal observation.

3.13 Ethics & integrity

Ethical considerations fall into four main areas according to David Gray (2009) author of Doing Research in the Real World:

- Avoid harm to participants
- Ensure informed consent of participants
- Respect the privacy of participants
- Avoid the use of deception (p. 73)
Informed consent is defined as

‘explaining as fully as possible, and in terms meaningful to participants, what the research is about, who is undertaking it, why it is being undertaken, and how it is to be disseminated [and] not as a once-and-for-all prior event, but as a process, subject to re-negotiation over time’

(British sociological association 2002)

There were no potential risks to the participant (or researcher) in this research project and all participants were over 18 years of age. However, as a courtesy and to ensure transparency, all participants were issued with and asked to sign an informed consent form. It had been created to ensure the four ethical principles of: respect, competence, responsibility and integrity as per the Nuremburg Code (Batteson 2012).

The Informed Consent form included information details of the research being undertaken, a request for voluntary participation, a promise of anonymity and reassurance that all information gathered is considered confidential and held securely. (Appendix C & Appendix D)

Permission was sought and obtained from VTOS Course Coordinator to carry out the research with Learners from the VTOS programme (Appendix B)

3.14 Conclusion

In this chapter, the research methodology has been discussed with consideration of the approaches to research. Evaluation of the case study approach and action research method led to the rationale for the selection of the case study method. Detailed explanations were given of the various data collection tools presented to the research participant group. Consideration was made of the importance of triangulation to attempt to ensure reliability and validity. The next section will present the finding of the research process.
Chapter Four – Research Findings

4.1 Introduction
This chapter will present an overview of the primary research findings from the pre-research survey to establish attitudes and perceptions to digital media (Appendix I) and the post research survey to consider thinking skills having used strategies from the DOL framework (Appendix L). The e-research tools as considered effective and an appropriate means of data collection comprised of self-administered questionnaires designed to elicit both quantitative and qualitative data. The findings will be presented by the research question.

4.2 Demographics
Initially, the potential research cohort for this research project had been eleven adult learners over the age of 21 years on a VTOS two year second chance education programme. As a sample of the overall VTOS programme, this would have been a representative 8.69% sample group. However, circumstances mitigated against full participation and ultimately, the unit response rate was 73% with seven participants successfully fully completing the questionnaires.

4.3 What are the attitudes and perceptions to the world of digital media by adult learners on a second chance education programme?

4.3.1 Respondent profile
The majority of respondents were female (six) with one male. The age range of the cohort is varied with the majority in the 30-40 age category. All respondents were born before 1982.

Overall, this was a multi-cultural group with members from Ireland, Morocco, Slovakia, Russia and Lithuania. English is a second language for two of the respondents.
4.3.2 Access to digital media and technology

An understanding of the concept of “digital” is evident as respondents associated the term digital with the tools (television, Internet) used to present the digitised media of images, videos and music. The 21st century skill of creativity was evident in one respondents association of watching “or making” movies.

All respondents indicated that they possess technology for use in the home and the responses indicate an overlap in that, the respondents have one or more item of technology. All respondents have a laptop; three own a personal computer and mobile technologies of phones and tablets are owned by four. Three respondents reported using e-books.

The majority indicated that they like using technology. It is used daily for varied use ranging from research, completing everyday online tasks of shopping, bill paying to online communication through email, primarily with Gmail (50%) and communication on social media. As one respondent said: “yes, it’s a great way of finding information fast and communicating.” Also good for storage and viewing photos and videos”

IT skill proficiency is indicated as all respondents use their skills to research course material, type up work, assignments and for personal information. Four respondents indicated that they use their IT Skills to pass the time while the remaining three only sometimes do this. The respondents were asked for a self-analysis of their IT skill proficiency in word processing, database methods, spreadsheet applications, desktop publishing, graphics, and use of the World Wide Web and use of e-mail. Overall, the majority consider their skills in word processing, use of the World Wide Web and e-mail to be good or comfortable. On the other hand, the majority cited their IT skills to be predominantly basic in spreadsheet applications, database methods, publishing and graphics. This would reflect that the research cohort had just completed their first year on the Ennis VTOS programme and would not yet have had instruction in the more specialised software programs.

This contrasts with the responses offered as to non-usage of digital media in which “lack of know how” of digital media was the predominant response followed by lack of time (two) and two respondents in the other category. Even though the respondents
were asked to expand on their answer if they answered “Other”, no explanations were offered.

4.3.2.1 Photography

One respondent did not attempt any of the questions in this section. While this may be accounted for if the person does not own a camera, it also meant that other questions were neglected\(^6\). (Just because someone does not own a camera does not mean that they cannot use one.) Four respondents have a digital camera with three respondents not owning a digital camera – the survey did not offer a phone camera as an option.

4.3.2.1.1 Familiarity with camera usage

Six of the seven respondents stated that they had skill in camera usage ranging from point & shoot to competent skill set. One person did not answer.

The management of photo media elicited varied responses:

- The majority (three) download the images to the PC while two others answered Other. A flaw in the survey design did not ask for an explanation on this. Family and friends manage the photos for the other respondent.
- Image editing is only achieved by two respondents using Picasa.
- Image printing: three respondents do not print, two print (one respondent at the shop) while one sometimes prints.
- Image usage: two respondents post to social media forums (e.g. Facebook) one has made a calendar. The majority (four) do nothing with photos.
- The majority (four) backup their images by putting them on to CD, USB, PC and external disk.
- Two respondents do not backup.

4.3.2.1.2 Video & video sharing

The majority of respondents (four) do not take video. Of the three respondents who use video, the equipment used is the mobile phone, digital camera and a flip camcorder with only one respondent making a DVD. Video is shared with family and friends by two respondents and saved by one and only one person uploads to Facebook. No one can edit videos.

\(^6\) This highlights a flaw with the questionnaire design which had not come to light in the pilot test.
4.3.3 **Attitudes to the Internet and World Wide Web**

All respondents use a search engine. However when asked which search engine, while six stated Google, other answers included Mozilla Firefox, Internet Explorer and Google Chrome browsers which would infer confusion on the understanding of the concepts of search engine and browser.

4.3.3.1 **Use of the World Wide Web:**

When specifically asked as to the usage of the World Wide Web, the responses indicate varied use of the www with “surfing” cited by the majority. This was not expanded on. No-one used the web for access to online forums.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online shopping</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>Watch TV</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>Online banking</td>
<td>3</td>
<td>11%</td>
</tr>
<tr>
<td>Book a flight</td>
<td>4</td>
<td>15%</td>
</tr>
<tr>
<td>Pay bills</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>Renew insurance</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Renew TV licence</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Pay car tax</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Just to have fun surfing the web</td>
<td>6</td>
<td>22%</td>
</tr>
<tr>
<td>Search</td>
<td>4</td>
<td>15%</td>
</tr>
<tr>
<td>YouTube</td>
<td>4</td>
<td>15%</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

*Figure 9: Attitudes & Perceptions Survey Response: Use of the World Wide Web*

When asked about participating in an e-learning environment on the web, four respondents stated that they had learnt in an e-learning environment. However, researcher observation noted that three respondents did not understand the concept of an e-learning environment. Once it had been explained, respondents were found to have undertaken online exams and work specific courses.

4.3.4 **Attitudes to Social media**

The term “social media” held different meanings to the respondents including communicating with people online, Facebook and Twitter. Only four of the respondents have a Facebook account which is primarily accessed using the PC. In general, login was daily for a period of between thirty minutes to an hour.
The majority do not access Twitter, Blog, Photo Blog, File sharing or RSS. Three respondents use Skype. Use of a Wiki generated five positive responses while two respondents stated that they had not used a wiki. Only one respondent uses digital apps particularly for music.

4.3.5 Attitudes and Perceptions to Learning - Dimension 1

The following section addresses Dimension 1 - the key attitudes and perceptions about the classroom and learning. It is the shared responsibility of both Learner and Teacher to maintain positive attitudes and perceptions and work individually or together to change negative attitudes and perceptions.

4.3.5.1 Confidence with digital technology:

All respondents indicated a level of confidence with digital technology. Many attributed this confidence to their participation on the VTOS programme. However, there was an indication that “more learning” is required and that the programme could support this.

4.3.5.2 Classroom climate:

4.3.5.2.1 Experience a sense of comfort

The responses to this section of the survey were open and honest which indicate that the participants felt comfortable about offering their responses. This would suggest that Dimension 1 of “being accepted” and having a sense of ease with fellow learners and the teachers may be considered to be achieved and inherent in the learning process with this research cohort. With regard to the sense of comfort:

“on personal level I feel intimidated by having to get up and speak in front of people especially in a language. Mostly but don't like when we have lectures in computer rooms, sitting on computer chairs facing the lecturer but not using the computer. There is often very little space around the computers to place paper work that you have to use for computer programmes. the canteen is very cold in the winter you have to wear your coat a lot.”

4.3.5.2.2 Experience a sense of order

All respondents agree that there is a sense of routine on the VTOS programme. All respondents experience a sense of safety in the learning environment and acceptable behaviours guidelines are observed as being in place
4.3.5.2.3 Attitudes to classroom tasks

All respondents believe that the interaction with digital technology in the classroom tasks is adding value to the learning process. The response was 100% positive to learners being clear about learning tasks and having the ability and resources to complete the tasks.

4.3.6 Learner Inventory

The last section of the survey was designed as a learner inventory to capture the 21st century skill of creative thinking. Below are some of the responses:

If you could be anything in the world, what would it be?
“a peacemaker Employed! Archeologist More confident in computers and anything technical Being content and happy and have my health. I would like to be travel consultant”

Where would you like to go if you could go anywhere?
“USA eygpt or dubai Israel, Tuscany Australia Italy. Then start work when i complete my course, if only part-time. I like America. I would like to live in Spain for a while”

If you could live during any period in history, when would it be?
“Home Victorian times The future! in 18th century Like to go back to 70's and have my mum still with me now in 2013 as she would be so proud of us a family Maybe about 20 years ago. World was a safer place.maybe 30 years ago”
4.4 Can the emerging 21st century learning and thinking skills required by today’s digital world of rapid technological change be fostered in an adult learning environment through the adaptation of the Dimensions of Learning framework?

On completion of the digital narrative and at the end of the input of the Dimensions of Learning strategies, all respondents were asked to complete an evaluation and review survey to consider if the 21st century learning and thinking skills required by today’s digital world of rapid technological change can be fostered in an adult learning environment through the adaptation of the Dimensions of Learning framework.

All respondents participated. This survey specifically explored the thinking skills of the adult learners within the different aspects of the Dimensions of Learning framework.

4.4.1 Dimension 1: Attitudes & perceptions

4.4.1.1 Feeling accepted by peers and teachers.

As a strategy to encourage all respondents to feel accepted by teachers and peers, a “game” of Two Truths and a Lie was introduced whereby everyone had to offer two truths and a lie and in turn the group members had to distinguish the lie. Everyone voluntarily participated fully. All respondents stated that they knew the teacher and fellow class mates better as a result of this strategy.

4.4.1.2 Understand and be clear about tasks

Initially the cohort was presented with a brief for their digital narrative: The story of the button. However, while the majority group response indicated that the Learners were clear about the task, it soon became evident that they did not perceive this task to be valuable and interesting and only became so “once the subject matter was changed” and everyone was given a choice to select their own topic. One respondent chose to stay with the original topic.

4.4.2 Learning style

In the pre-research survey, the perceived strongest learning style of the group, (individually in the survey) is that of a visual style with the kinaesthetic learning style indicated by two respondents. One respondent believed they learn best by listening (aural). However, the results of the VARK online questionnaire administered during the
research process contradict these findings as 71% (five) of respondents have a preferred read/write learning style with 29% (two) having an aural learning style preference.

4.4.3 Multiple Intelligences

Respondents displayed a combination of styles. Interpersonal and Intrapersonal intelligences scored strongest (three each) with Kinaesthetic, linguistic, visual spatial and naturalistic intelligences each receiving one score.

4.4.4 Dimension 2: Acquire & integrate knowledge

4.4.4.1 Declarative knowledge – construct meaning to concepts

With regard to the declarative knowledge concept of plagiarism, the majority of respondents (five) stated that they knew what plagiarism is: “copying others peoples work and passing it off as your own”, with one respondent not knowing and one respondent unsure. All respondents explained the concept of copyright, summarised in one respondent’s words as:

“copyright means that you cannot replicate or use another persons work without their permission or without paying for same.”

The IT literacy of the cohort was tested by asking the group to save the digital content to different file formats (.wlmp and .wmv). All respondents stated that they understood the difference and this was evidenced in the practical application to their digital narrative.

7 This research cohort has been completely familiarised with declarative knowledge (D2) concepts of plagiarism and copyright while on the VTOS programme. Breaches are not tolerated and invoke disciplinary procedures.
4.4.2 Procedural knowledge

Acquiring this knowledge is reflected in the ability to perform and use critical skills and processes (construct a model). The task required the research group to search online. All respondents replied that they were comfortable with the skills required to search online and all felt they had the skills to save information to a variety of technologies. This supports the responses previously given in the pre-research survey.

4.4.3 Shape and Internalise knowledge

The task for the research cohort was to learn and apply new software (windows moviemaker) in the creation of digital narrative. The challenge of this dimension was for learners to shape and internalise knowledge. Having successfully completed and produced a movie, in the evaluation survey, all respondents replied that they felt that they have the skill to explore the new software on their own at a later stage.

4.4.6.4: DOL strategies

The Dimension of Learning strategy of story boarding (abstracting and visualisation) was identified by 30% as potentially being useful in learning and study. 20% identified the strategies of concept/mind-mapping and brainstorming as having a potential future use.

4.4.5 Dimension 3: Extend & refine knowledge

4.4.5.1 Reasoning processes:

The processes involved in this dimension included the reasoning processes of comparing and classifying various digital media (images, video, and music), inductive reasoning, abstracting and visualising. While all respondents indicated that they understood the concepts of different media formats, from researcher observation, it became clear that some peer and researcher (MKO) assistance was required. There was no hesitation as to the appropriateness of the digital content selected.

4.4.6 Dimension 4: Use knowledge meaningfully

The respondents were required to apply self-analysis to their skills and abilities in decision making, problem solving and invention. Overall, the respondents were comfortable with decisions made about the digital story. A number of problems arose
for individuals in areas of digital content but they offered no solutions as to how they overcame these. Researcher observation noted that peer assistance and IT skills (to search for help) were employed. The responses to the inquiry as to invention and creativity elicited positive responses with one respondent offering: “It was a great learning process.”

4.4.7 Dimension 5: Habits of mind

Productive habits of mind are the habits used by critical, creative and self-regulated thinkers. The DOL framework cites specific traits and characteristics for each habit. The respondents were asked to self-rate their habits.

4.4.7.1 Critical thinking

- **Be accurate & seek accuracy – I check my work is correct and precise and I expect precision from others’ work.** The majority of respondents (five) felt that this is true for them with two respondents saying it is sometimes true for them.

- **Be clear and seek clarity - I tend to be a clear communicator and seek clarity.** Four respondents considered this statement to be very true for them while three respondents considered it to be sometimes true for them.

- **Maintain an open mind – I tend to have the ability to keep an open mind.** Four respondents considered this statement to be very true for them while three respondents considered it to be sometimes true for them.

- **Restrain impulsivity - I can delay making a decision until I have more information.** Five respondents considered this statement to be sometimes true for them while two respondents considered it to be very true for them.

- **Take a position when the situation warrants it - I tend to be take a position (stand) when a situation warrants it.** Two respondents considered this statement to be sometimes true for them while two respondents considered it to be very true for them.

- **Respond to other’s feelings and level of knowledge: I tend to be Respond to other's feelings and level of knowledge.** Two respondents considered this statement to be sometimes true for them while five respondents considered it to be very true for them.
4.4.7.2 Creative thinking

- **Persevere:** *I tend to persevere and stick to a task when doing something.* The majority of respondents (four) considered this statement to be sometimes true for them while three respondents considered it to be very true for them.

- **Push limits:** *I tend to push the limits of my knowledge and skills.* The majority of respondents (four) considered this statement to be sometimes true for them while three respondents considered it to be very true for them.

- **Standards of evaluation:** *I have my own standards of evaluation of my work.* The majority of respondents (four) considered this statement to be sometimes true for them while three respondents considered it to be very true for them.

- **Think outside the box:** *I like to think outside the box and can look differently at a task.* The majority of respondents (six) considered this statement to be sometimes true for them while 1 respondent considered it to be very true for them.

4.4.7.3 Mental habits that exemplify self-regulated thinking

- **Monitor thinking:** *I can monitor my own thinking*

  The majority of respondents (six) considered this statement to be sometimes true for them while 1 respondent considered it to be very true for them.

- **Plan appropriately:** *I actively plan and verbalise/write my plans*

  The majority of respondents (six) considered this statement to be very true for them while one respondent considered it to be untrue for them, one- sometimes true and one person did not understand the question.

- **Identify necessary resources:** *I can identify and use necessary resources - I am not afraid to ask for help*

  The majority of respondents (four) considered this statement to be very true for them while three respondents considered it to be sometimes true for them.

- **Feedback:** *I actively seek out and respond to feedback.*

  The majority of respondents (five) considered this statement to be sometimes true for them while two respondents considered it to be very true for them.
• Evaluate effectiveness of their own actions: *I evaluate the effectiveness of my own actions*

The majority of respondents (four) considered this statement to be sometimes true for them while three respondents considered it to be very true for them.

4.4.8 Digital storytelling

In the review of the dimensions as applied to the task of creating user generated digital content, the overall feedback was positive and encouraging.

4.4.8.1 Self-evaluation (D5)

The research participants were asked to rate their own digital creation.

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<th>Comment</th>
<th>Response</th>
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<tbody>
<tr>
<td>I did a really good job and I learned something new</td>
<td>4 57%</td>
</tr>
<tr>
<td>I am satisfied with my work</td>
<td>2 29%</td>
</tr>
<tr>
<td>I could have done better</td>
<td>1 14%</td>
</tr>
<tr>
<td>I did not do very well</td>
<td>0 0%</td>
</tr>
<tr>
<td>Other</td>
<td>0 0%</td>
</tr>
</tbody>
</table>

Figure 11: Dimension 5: Self-evaluation of digital narrative movie.

Overall, the rating of the digital narrative produced was positive. Two respondents used the “Other” option in the question to further expand on this: “I did a really good job” and “I learned something new.”

4.4.8.2 Perceive task as valuable and interesting (D1): *What did you value most about creating the digital story?*

All respondents stated that they found the task interesting (D2) and that they had the ability and resources to work with digital media (D5). The responses indicated that this new IT skill will be used in their own lives.

4.4.8.3 Apply declarative knowledge to a procedural task (D2): *Did you use sources from a variety of media formats?*

The majority said that they had used media from a variety of sources while two stated that they had not done so with one respondent not understanding the question.

4.4.8.4 Have you learned anything new about yourself and your thinking skills?

While there was no specific reference to thinking skills, the response to this question was overwhelmingly positive and very honest. One of the respondents cited their
understanding of their learning style: “I learned that I am an aural/read/write learner” while another respondent brought the new learning into their own personal life experience: “I have definitely learned to be more positive in myself and more confidence and to possibly listen a bit more”

4.4.8.5 Overall experience

In response to the question about the overall research experience, the responses incorporated all aspects of the dimensions as respondents mentioned working with others, learning new skills, creating digital content. There was a general sense that the concept of moviemaking was interesting, new and would be used again.

4.4.9 Observation

- An area of difficulty observed within the research environment was a level of difficulty encountered with the new software – Windows Live Moviemaker. However, peer interaction and peer assistance were evident and, in general resolved this. While the aim of the observation would (for the researcher) to remain low profile with no intervention or comment, it became evident that a level of scaffolding was required with the newly introduced software with some of the participants.
- Despite the researcher having worked with the research cohort in the role of teacher or the previous academic year, there is no evidence of acquiescence/co-operation bias in the participants’ completion of the e-research surveys.

4.4.10 Conclusion

This chapter presented the findings from the research undertaken. No discussion or commentary has been made on these findings. A detailed discussion will take place in the Chapter Five.
Chapter 5 – Discussion

5.1 Introduction

This chapter will interpret the empirical evidence in light of the current literature and the research questions. The insights gained from the research will then be analysed to consider the application of this framework to an adult learning environment.

5.2 What are the attitudes and perceptions to the world of digital media by adult learners on a second chance education programme?

5.2.1 “Every European Digital”

This study found that all participants indicated knowledge of the concept “digital media” and all had access to technology to varying degrees. This then would suggest that the Adult learners have become “digital” as envisioned by Vice President Neely Kroes (2013). It would also infer that this cohort of adult learners are “doing more with digital” thereby achieving a goal of the first phase of the National Digital Strategy envisioned by Minister Pat Rabbitte (2013).

Self-analysis of IT skills infers digital literacy competence. However, as discussed, the concept of literacy today has changed because of societal and technological advancements. Multiple literacies are required for 21st century world for learners of all ages who learn in a classroom without walls through easy access to the wealth of information, immediate communication, connectedness and digital tools of the World Wide Web.

5.2.2 Proficiency and fluency with the new medias & tools of technology

The learning skills and competencies required in the digital world have expanded with the four skills of Communication, Collaboration, Critical thinking and Creativity (4C’s) central to active participation in the Age of Convergence with its’ overlap in technologies and digital medias. While it is recognised today that most young people routinely engage with digital and social media, the adult learners interviewed indicated that they too regularly use new media, in particular email and online “surfing” which may be motivated by relevance and readiness to learn and echoes the Behaviourist theory that there is an observable change in learning.
However, it was found that the concept of social media held different meanings for the adult learner respondents with Facebook and Twitter being the most frequently identified. Four of the seven respondents hold a Facebook account and one respondent uses digital apps. Twitter, Blogging and RSS are not used by any of the respondents in the survey. This may imply that indeed, as proposed by Knowles (1984), they may not have a motivation to embrace these aspects of technology and thus it is their experiences (connecting with family and friends as indicated in the survey) which determine their interactions with technology as suggested by Seely Brown (2009). Based on their own perceptions of access to and interaction with technology, these learners cannot be considered “digitally deficient” as they seemingly do have skills to interact with the technologies but, the topics may not be of immediate relevance as Knowles (1984) suggests.

5.2.3 Digital native vs. Digital immigrant?

The findings indicate that the age profile of the research participants is greater than thirty years of age with two participants over fifty years of age and therefore they do not fit the category of “digital natives” or those born after 1980 as proposed by Marc Prensky (2001). This, too, would indicate that for those educated within the primary school system in Ireland, they would not have had the “opportunity to achieve computer literacy and to equip themselves for participation in the information society” (NCTE) as part of the ICT in Schools Programme of 2000. When asked to rate their skills with IT, the self-analysis of IT proficiency elicited positive responses with respondents stating that they use the Internet and World Wide Web from a range of activities from “having fun surfing the web” to paying bills online. All respondents offered opinion as to the meaning of digital media and nobody indicated that they did not like using technology but lack of time cited as being the main reasons for not using digital media.

5.2.4 Learners are flourishing in a digital era

Today’s digital world with access to a wide range of multimedia and opportunities to be the “prosumer” with all the multisensory experiences brings the Learner/participant into the world of “Connectivism” as proposed by Siemens (2004) in which learning moves from being an individualistic to a shared experience. In the creation of the digital media narrative, the adult learner cohort required the skill of creativity and ability to access online resource materials to produce digitally mediated content. (D3 - extending and
refining knowledge) Scaffolding by the MKO (Vygotsky (1978), prior knowledge and peer support facilitated this. The progression of the self-concept of Andragogy is evident in the finished, shared and peer reviewed digital content.

One of the respondents commented: “It was a lovely addition to our learning and definitely is one I will use again” which reflects the cognitivist viewpoint, identified in the literature review, that the combination of action and reflection facilitated the building of meaning and support in the creation of the new digital product as discussed by Adams & Burns (1999). It also supports the constructivist viewpoint as proposed by Marlowe and Page (2005) that technology can enrich the Learner’s use of a variety of sources and becoming an active participant.

5.3 Can the emerging 21st century learning and thinking skills required by today’s digital world of rapid technological change be fostered in an adult learning environment through the adaptation of the Dimensions of Learning framework?

Highlighted throughout this research has been the concept that 21st century learning in a dynamic, multimedia and hypermedia environment implies acquiring new skills of thinking and literacies and is according to Oblinger (2005) about engaging “in enquiry, lifelong learning and civic engagement”. As discussed, at the core of the Dimensions of Learning framework is the premise that five types of thinking (known as the Dimensions of Learning) are essential to promote effective learning.

- Dimension 1: Positive attitudes and perceptions about learning.
- Dimension 2: Thinking used to acquire and integrate knowledge.
- Dimension 3: Thinking used to extend and refine knowledge.
- Dimension 4: Thinking involved in using knowledge meaningfully.
- Dimension 5: Productive habits of mind.

5.3.1 Dimension 1: Attitudes & perceptions.

The first dimension purports that attitudes and perceptions affect a learner’s ability to learn. A key element is to establish positive attitudes about the learning environment – the classroom.
5.3.1.1 Classroom climate

5.3.1.1.1 Acceptance by teacher & peers

To explore the concept of acceptance, two tasks were put to the research cohort. The first task was an individual activity the goal of exploring how well people know each other. This task was held in an informal setting in which all participants and the Researcher (in the role of teacher) was asked to give Two Truths and a Lie about themselves. This was an informal learning experience, participation was voluntary and support Brookfield (1986) that learners need to be open and receptive. No verifiable findings can be presented from this exercise. However, from informal observation by the researcher, all participants appeared to be comfortable taking part. This is supported by the review & evaluation e-survey in which all respondents stated they enjoyed the exercise. In both pre and post research surveys, the majority response was that Dimension 1 has successfully been addressed in that the respondents feel accepted by fellow learners and teachers/staff on the Ennis VTOS programme.

Task 2 involved communication and collaborative work (key 21st century skills) to identify ten words to describe the class (research group). These words were then shared to collaboratively create a wordle. Designed as a group exercise, collaboration and communication were integral to the success of the exercise as the group members communicated ideas with each other. The exercise required learners to interact, be self-directed and independent as a group. There was evidence of effective use of interpersonal skills as all members participated and expressed ideas. These are part of lifelong learning transferable skills and vital to the workplace today.

5.3.1.1.2 Perceive a sense of comfort & order

This concept is introduced to the learner to foster thinking. Learners “define physical comfort in different ways” according to Carbo, Dunn, and Dunn 1986 and McCarthy, 1980, 1990 (cited in Marzano 1992). The participant responses echo this as they varied from comments on the physical aspect of furniture to work space to heat within the room. However for others, it is more a personal feeling of “being intimidated by having to get up and speak in front of people especially in a language” to a sense of discomfort with some people “more vocal than others and sometimes order is hard to control”.

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5.3.1.2 Classroom tasks

The framework considers that effective learning is influenced by the degree to which students perceive classroom tasks as valuable and interesting, believe that they have the ability and resources to complete tasks, and understand and are clear about tasks. It is important for learners to understand that their attitudes and perceptions about learning and classroom tasks significantly can influence what they learn from those tasks.

5.3.1.2.1 Valuable and interesting

Adult learners are task oriented in that they want practical applications from their learning (Knowles 1970) but must perceive tasks as valuable and interesting. The research cohort responses of: “Yes, yes, yes, most definitely, absolutely…” to the task of creating a digital narrative would indicate that the research group thought the task was valuable and interesting. In the introduction of the concept of task oriented digital narrative from the dimensions perspective of habits of mind thinking skills, the researcher proposed a topic - Story of the Button - to consider creativity and self-regulated thinking skills. However, from the informal observation it noted that the motivation of a number of the learners was challenged (Knowles 1984) as the task was evidently not “valuable and interesting”. According to Batterson (2012), change may occur during the research process for the participant which may “shift the focus of their studies as a result”. Participants were then offered a choice; to accept the suggested digital narrative topic or determine the subject of the digital narrative themselves. Six participants chose to change the focus of their narrative. All digital content produced displays evidence of life experience and relevance displaying unique and distinctive characteristics (Andragogy). The review responses indicate that while all learners were clear about the task, it only became valuable and interesting “once the subject matter was changed”.

5.3.1.2.2 Ability and resources

In the e-research survey, the concept of the respondents possessing the ability and having access to the resources to complete the task was introduced to participants to foster thinking. The self-concept proposed by Knowles (1984) is that the learner moves from dependency to self-directedness and awareness and is echoed in the theory of transformative learning as proposed by Professor Jack Mezirow (1991) as learners
become more reflective, they become more receptive to new ideas and are more open to learning.

For some adult learners, lack of confidence in their own abilities hampers a belief in their abilities and brings an element of risk. Risk may be seen to be too great if the learner does not have belief in their own ability and sometimes learners simply need to understand that, in fact, they do have the abilities to complete a task. Questions regarding beliefs in abilities and resources most certainly will elicit more negative responses to learners more recently returned to education. Stephen Brookfield (1986) has highlighted that “learner self-worth is core”

In general, the research cohort indicated that they have a belief in themselves and their abilities.

5.3.1.2.3 Clarity

Adult learners need to know why. Readiness to learn is directly related to understanding and clarity of the task. As part of the research process, transparency through an informed brief of the aims and objectives of the research process ensured that all respondents voluntarily chose to participate. The introduction of new IT skills through the creation of digital narrative in moviemaker built on their learning to date and the respondents were clear on this progression. Lack of clarity can be a determining factor in Learner progress. According to the DOL, when a learner is clear about the task and expectation, active learning can take place as more connections will be made between previous learning and learning new knowledge.

5.3.2 Dimension 2: Acquire and integrate knowledge

In helping learners to acquire and integrate new knowledge, they must acquire the skills and processes, learn a model (steps), shape the learning to make it relevant for them and then internalise it to make it effective for them. This reflects the constructivist theory of learning in which learning is considered to be an active process. The Dimensions framework proposes that there are two types of knowledge - declarative & procedural knowledge - which must be taught differently introducing different instructional strategies to accommodate diverse learning styles.
5.3.2.1 Declarative knowledge: The learner knows or understands … (know what)

Declarative knowledge is about information and constructing meaning—facts, concepts, principles and generalisations within content knowledge which the learner must know or understand. Learners connect knowledge to what they already know but may not consciously or explicitly make the connection. (Constructivism)

5.3.2.1.1 Construct meaning

The declarative knowledge concepts addressed during the research process were:
- The importance of virus protection,
- File management.
- Conventions of netiquette,
- IT vocabulary
- Concepts of plagiarism, copy right, creative commons.
- Moviemaker: transitions, import media, storyboard, effects, titles & credits etc.

A number of strategies were introduced to support the acquisition of declarative knowledge: the 3 step strategy of K-W-L charts, the 5 stage active reading technique of SQ3R, mind-mapping. (Appendix N)

5.3.2.1.2 Organise

Critical thinking (4Cs) and reasoning processes were required by the participants in order to use online searching using appropriate criterion for digital content of images, audio etc. The self-directed learning theory suggests that learning takes place when learners make responsible decisions about their own learning. All learners responded that they felt that they have the skills required to interact with the technology. This learning was supported by strategies of brain storming and mind mapping (look at thinking) which had been introduced as part of Dimension 2 of extending and refining knowledge.

5.3.2.1.3 Store

Mnemonics use a word, phrase or rhyme to provide a cue to information to be remembered. Introduced as a D2 strategy, it was not assessed in a knowledge recall situation as would be tested in an exam.
5.3.2.2 Procedural knowledge

Procedural knowledge involves the learner performing a process or demonstrating a skill taking some kind of action (mental or physical) through a series of steps. The introduction of the Windows Live moviemaker software to the research group required the acquisition of new procedural knowledge.

The literature discussion of Learning style models and the theory of Multiple Intelligences indicates that individuals have differing styles of learning and different “intelligences”, Gardner (2000) believes that every person has areas of strengths. Awareness of these and strategies to support them can help create a positive impact on the learning experience. Offering Learners a variety of learning strategies and activities can build on these strengths and, in turn, open avenues to others. (Appendix G)

Pearson (2013) proposes that the digital technologies of digital story creation and other metacognitive activities (concept mapping, classifying, etc.) appeal to those with predominance for intrapersonal intelligence while collaborative activities appeal to the interpersonal intelligence.

In using moviemaker as a forum for this process, learners acquired both declarative and procedural knowledge. They completed layered tasks with time to engage in layers of investigation and exploration and creation of content.

5.3.2.2.1 Construct models

Having the procedural knowledge to boot a PC, access software etc. required the learner to construct a model. However, an element of scaffolding by the researcher was required to introduce the stages and technical aspects (e.g. transitions) in using the moviemaker software. This collaborative problem solving with the researcher/teacher as the more knowledgeable other is the ZPD (zone of proximal development) as proposed by Vygotsky which is the difference between what the learner can achieve alone and what can be reached when given assistance and supported.

5.3.2.2.2 Shape

Having mastered the ability to construct a model, shaping occurs when a learner’s critical skills and reasoning processes come into play and the learner begins to adjust
and shape the model. This was an on-going process in the movie creation, as it was observed that all learners drafted, edited and readjusted regularly.

5.3.2.2.3 Internalise

Perform the skill without consciously thinking of every step – a skill called “automaticity” (Marzano et al 1997). Given the limitation of the time frame, it was not possible to allow extensive practice of using the software and as a result, it should be noted that the participants became familiar with the software rather than truly internalising the procedural knowledge.

In summary, both declarative and procedural knowledge is generally required in most tasks and learning. Declarative knowledge is primarily what will influence a successful learning outcome. As such declarative and procedural knowledge can be organized to create a hierarchy from specific to general knowledge.

5.3.3 Dimension 3: Extend & refine knowledge

Knowledge is not static. It is constantly extending and refining and additional learning and experiences may change understanding. Effective learning occurs when knowledge can be applied to the real life experience. Educational reformer, John Dewey (1916) believed that “We learn by doing if we reflect on what we have done.” The use of reasoning processes is core to extending and refining knowledge. Taking part in their own learning (Dewey) enables the Learner to see knowledge in new ways and to be able to express insights, understandings, ideas, or discoveries related to that knowledge.

While extending and refining knowledge, learners engaged in the some or all of the reasoning processes of comparing, classifying, abstracting, inductive reasoning, deductive reasoning, constructing support, analysing errors and analysing perspectives. Used in an unconscious manner daily, these interrelated processes can be used to deepen students understanding of what they are learning.

5.3.3.1 Complex reasoning processes

5.3.3.1.1 Comparing and contrasting

Self-directed learning and constructivism theories were apparent in the requirement to identify and articulate similarities and differences among items by examining key
attributes to gain insight and see distinctions. The producers (participants) had to decide appropriate images, video and music based on meaningful or interesting characteristics relevant to their own individual narrative.

5.3.3.1.2 Classifying
Grouping things into definable categories based on attributes (e.g. royalty free images, music and video) was necessary to determine if the selected images were appropriate in terms of resolution, correct file extensions and possible file conversion, saving images to a folder etc. It is evident that knowledge has moved beyond the acquisition of content knowledge (transformative learning) in how to select and categorise items to that of becoming reflective in making choices as discussed by Mezirow (1991).

5.3.3.1.3 Abstracting
Abstracting involves identifying and articulating the underlying theme or general pattern of information. Learners reasoned how selected media resources could be applied to narrate the story.

Other complex reasoning processes associated with extending and refining knowledge are: inductive reasoning, deductive Reasoning, constructing support, analysing errors in reasoning/thinking and analysing perspectives. These reasoning processes were not incorporated into this research project.

5.3.4 Dimension 4: Use knowledge meaningfully
The challenge is to engage learners in using knowledge in a context that is meaningful to them thereby motivating them to acquire knowledge to complete the task with increased level of engagement. This echoes the orientation of andragogy which considers that the learning must be of value to the learner and offer benefit outside the classroom. When adults see value and benefit from learning, this empowers and nurtures which, according to Brookfield (1987) (1995) will, in turn, impact on home, work and social circumstances. The reasoning processes associated with using knowledge meaningfully (D4) are: decision making, problem solving, invention, experimental enquiry, investigation and systems analysis. These adhere to the Four C’s of 21st century skills of critical thinking, communication & collaboration and creativity.
5.3.4.1 Reasoning processes

5.3.4.1.1 Decision Making & problem solving

Critical thinking and problem solving identified as part of required 21st century skills requires reasoning in making choices, connections and understanding with the ultimate goal of overcoming constraints or limiting conditions. In using knowledge meaningfully of Dimension 4, all participants were required to make decisions based on choices in a process of generating and applying criteria from choices that seemed equal, for example, the selection of digital resources, criterion applied in online searching and establishing how the results matched the criteria and, in turn, the project. Scaffolding by the Researcher ensured that Learners were able to overcome technical difficulties encountered due to unfamiliarity with the software.

5.3.4.1.2 Invention

This reasoning process requires creativity to develop an original product, in this case a digital narrative. This new product, a movie relevant to learner’s experiences using both procedural (in a meaningful context) and declarative knowledge involved drafting, editing, revision and ultimately synthesis in the generation of the digital movie.

5.3.4.1.3 Systems Analysis

The analysis of the parts of a system and how they interact involves thinking especially if a key part changes. The creation of the user generated digital content may be classed as system as it involves working parts that interact with one another. The software, windows moviemaker, required various stages of assimilation, construction and production. There were two parts to the system in a) the project and b) the movie. An integral part of the software was that the user collated and stored material in one location. It was imperative that the system must worked together to ensure a viable completed movie.  

The reasoning processes of experimental inquiry and investigation were not addressed in this research project.

8 * Scaffolding: Researcher demonstrated the system through a completed project and movie: Is Love Alive in .wlmp (project format) and .wmv (movie) formats
5.3.5 Dimension 5: Habits of mind – quality of one’s thinking

According to the DOL framework, both Dimension 5 which considers productive mental habits along with attitudes and perceptions of Dimension 1 form the backdrop and foundation of the learning process. They influence the reasoning and thinking processes in the Dimensions 2-4. The term habits has been used because, once developed, the habit will enable the learner to unconsciously use it to learn on their own (become more self-directing).

The habits of mind identified are categorised as: critical thinking, creative thinking and self-regulated thinking (core to the 4 Cs of 21st century skills). The presence of some or all of these habits is evident in the digital narratives created by the research participants. However, in researching this adaption of the DOL framework, the researcher chose to ask the participants themselves to rate their own habits of mind and the following is an overview of this self-concept and awareness.

5.3.5.1 Critical Thinking

The following Mental habits exemplify critical thinking:

- **Be accurate and seek accuracy**

In their self-analysis of thinking skills, five respondents claimed that they are accurate and seek accuracy while two respondents indicated that it is sometimes true. Not alone is the term accuracy related to error analysis (also in D3 extending and refining knowledge) for precision and correct work but it can also be applied to seeking accuracy from information – a skill identified in the 21st century skill set. Given today’s collaborative culture and interactivity now evident in all walks of life today and the amount of media experiences freely shared online by an increasing number of prosumers, it is vitally important to evaluate the credibility of information. 21st century citizens and learners need to have the critical thinking skills to evaluate, sift and interpret data and knowledge.

- **Be clear and seek clarity**

Four respondents claimed that they are clear communicators and seek clarity while three respondents indicated that it is sometimes true. Clear communication is fundamental in an effective learning environment. This may be from the learner’s perspective of
English as a second language, lack of clarity in a task or indeed, in body language and intonation of the instructor.

- **Maintain an open mind**

Three respondents claimed that they have the ability to keep an open mind while four respondents indicated that it is sometimes true. In the learning environment, learning is enhanced when an open mind will listen to different perspectives. As highlighted in the literature review, Etienne Wenger and Jean Lave (2006) have proposed a model of situated learning which built on the theory of social learning proposed by Jean Lave (1991) which requires a process of engagement and social interaction. In a world of diverse communities, languages, religions and traditions, maintaining an open mind can enhance communication and supports an increasingly connected world.

- **Restrain impulsivity**

Two respondents claimed that they have the ability to delay making a decision until they have more information while five respondents indicated that it is sometimes true. This is an unusual finding as one of the principles of andragogy is that adults have a wealth of their own life experiences. (Knowles 1984)

- **Take a position when the situation warrants it**

Two respondents claimed that they have the ability to take a position when the situation warrants it while five respondents indicated that it is sometimes true. When an open mind is maintained and impulsivity is restrained, it becomes easier to take a position based on evaluated evidence.

- **Respond appropriately to others’ feelings and level of knowledge?**

Five respondents claimed that they have the ability to respond appropriately to others’ feelings and level of knowledge while two respondents indicated that it is sometimes true. All interaction holds some form of message, implicit or explicit. Assessing that message is a skill which is increasingly challenging in an online participatory culture. 21st century work may now mean that physical interaction is non-existent and that all work may be carried out in the online environment. Having the skill to read people’s feelings and levels of knowledge will be core to collaboration and co-operation.
5.3.5.2 Creative Thinking

The following mental habits exemplify creative thinking:

- **Perseverance**

Four respondents claimed that they have the ability to persevere while three respondents indicated that it is sometimes true. The Dimensions of Learning framework considers that this skill is not just about continuing with a task until it is completed but also having the skill to seek assistance from a MKO, consider different perspectives and problem solving.

- **Push the limits of their knowledge and abilities.**

Three respondents claimed that they have the skill to push the limits of their knowledge and abilities while four respondents indicated that it is sometimes true. Dimension 5 expands on this to mean attempting new things and not just accepting challenges.

- **Generate, trust, and maintain own standards of evaluation.**

Three respondents claimed that they have the skill to push the limits of their knowledge and abilities while four respondents indicated that it is sometimes true. Self-directed learners have the ability to apply their own standards of evaluation to their work and can make decisions about their own learning.

- **Generate new ways of viewing a situation outside the boundaries of standard conventions**

When asked, six of the respondents replied that sometimes they can think outside the box and one respondent said it was very true for them. Generating new ways of viewing a situation is exactly what was being done in the creation of a media product in the digital story with its inherent decision making and problem solving.

5.3.5.3 Self-regulated thinking (metacognition)

Metacognition is knowledge and understanding of our own cognitive processes and abilities and those of others, as well as regulation of these processes. (SESS 2009)

The following mental habits exemplify self-regulated thinking as learners control their own learning.
• **Monitor thinking**

Only one respondent claimed that they have the habit to monitor their thinking while six respondents indicated that it is sometimes true. According to Dimension 5, monitoring thinking enables efficiency, fewer mistakes are made and analysis is on-going of what is working and what is not. Monitoring thinking involves monitoring mental strategies, thoughts and visual images.

• **Plan appropriately**

Planning is vital to the success of goals, in learning or in life. When asked if they plan appropriately, one respondent said it is untrue for them, one sometimes true, four very true for them and one did not understand what is being asked. The findings are very interesting as planning is such a core and important part of educational attainment (for example, submission of assessments require careful preparation and planning), and in worlds of everyday life and work

• **Identify necessary resources.**

When asked, four respondents believe they can identify and use necessary resources (ask for help) and three respondents said it was very true for them. Planning is inherent in this habit as identifying the necessary resources requires the ability to identify what’s needed, access the resources, evaluate and use appropriately and reassess.

• **Respond appropriately to feedback monitor**

71% (five) of the respondents indicate that they actively seek out and respond to feedback while 29% (two) say this is true for them. This would indicate that feedback may be sought, reflected upon and appropriate action taken if required as Vgotsky proposed in the Zone of Proximinal development or indeed may be reflective of the context based learning discussed by Dewey (1916) who believed the social environment to be educative.
- Evaluate effectiveness of their actions

This habit involves the learner being a process observer. Four respondents consider this to be true for them while three respondents believe it to be sometimes true. The ability to do this exhibits discipline and a level of high standards.

5.3.6 Overview

It has been continually noted in discussions of the DOL framework that Dimension 5 (D5 - productive habits of mind) is always in the background of the overall framework along with Dimension 1 (D1- attitudes and perceptions) to facilitate learning as learners can more effectively do the thinking required of the other dimensions when the habits of mind and attitudes and perceptions are in place. Developing mental habits enable regulation of thinking and actions. These habits are part of life and lifelong learning.

This discussion indicates that many of the theories of learning have been incorporated into the Dimensions of Learning framework. There is evidence the Lifelong learning standards identified by Marzano et al (p.258) of complex thinking standards, information processing standards, effective communication standards, collaboration/co-operation standards and habits of mind standards of self-regulation, critical and creative thinking all reflect the skills set (4 Cs) required for participation in 21st century learning. The strength of the involvement of the Adult Learner in the process may be, as proposed by Dewey (1916) that the environment and involvement in real life tasks and challenges supported the ability to learn.

5.4 Research Limitations

While not detrimental to the outcome of the research process, there were a number of factors which hindered the research.

5.4.1 Problem of anonymity

On analysis of the data, it became evident that the promise of anonymity (ethical consideration) offered to the participants restricted the findings. As the survey responses were not identifiable, it meant that there was no opportunity to co-relate the individual responses offered with the practical evidence generated in the movie. Therefore, it was not possible to identify specific instances of 21st century thinking skills in action for individuals. This had not been anticipated but could have been addressed based on
shared trust of the Researcher and participant due to time spent on the VTOS programme together. The potential had been there to expand on the findings but, overall, it has not made any difference to the overall findings of the research study.

5.4.2 Resource constraints

Central to Dimension 2 is declarative knowledge which includes knowledge to construct meaning about concepts and principles. Online media presented in digital format is subject to copyright and restrictions. In creating the digital narrative movie, due to limitation on access to sites under IT policy in the Adult Education Centre, it was not possible to download music images etc. from royalty free sites on the Learner’s PCs.

5.4.3 Time

This has been a small scale research project with the primary data collected over a two week time frame. A specific task was set (create a digital narrative) to introduce the DOL framework, but, learning new software AND being introduced to strategies to support the dimensions while participating in research (with required surveys etc.) was extremely ambitious. The time frame was too short. In hindsight, setting up the research process and conducting it over the year would have been much more effective.

5.5 Reliability & validity

5.5.1 External validity

The research cohort who participated comprised adult learners on a VTOS programme. If, as had been planned, all eleven potential participants had participated, this would have been 13.75% sample of the VTOS students. The reality is that only seven learners participated fully. It may be argued that the external validity of the study has been compromised as the case study is too small for the results to be generalised. This researcher would argue that this research could apply to any VTOS programme in Ireland as the entry level requirements to VTOS are the same throughout the country – age, employment status, educational attainment etc. and the types of learning offered are all FETAC modules.
5.5.2 Credibility

The research author holds no reservations about the authenticity, accuracy or honesty of the findings. While the selection of research participants may be considered to have an element of availability bias in that the research cohort were Learners on the Ennis VTOS programme and students of the Researcher (in role of Teacher), there is no evidence of acquiescence bias in the responses to the research surveys. Researcher bias may be raised in that some of the research questions may not have been expanded enough. However, this may be explained by the inexperience of the researcher.

5.6 Conclusion

In the discussion of the research findings, analysis of the findings would suggest that learners returning to education have already developed the core skills required to participate in a 21st century world as evidenced in the exploration of the habits of mind of Dimension 5. Even though adult learners may not interact with digital technologies to the extent that today’s generation does, apparently, they consider they have the skills which they require determined by their interaction needs. Based in an adult learning environment, the research cohort indicated positive attitudes and perceptions to the learning environment. In the creation of the digital narrative, the dimensions of acquiring knowledge, extending and refining knowledge and using knowledge meaningfully was supported by strategies of the framework.

The next chapter will conclude the research study by looking at a summary, discuss the research limitations and suggest areas for further research.
Chapter 6 – Conclusion

6.1 Introduction

The aim of this study was to apply the Dimensions of Learning framework to an Irish adult learning environment through the creation of digital media content using the medium of digital storytelling. The objectives were to investigate whether the framework can be adapted to adult learning, discover the attitudes and perceptions of adult learners to digital media and explore how the thinking skills of Communication, Collaboration, Critical thinking and Creativity can be fostered.

This research study began with an overview of the digital world of today and the opportunities it can offer allowing users social interaction, expression, communication, education and entertainment. Participation in this world requires a new skill set, now known as 21\textsuperscript{st} century skills to live, work and learn in this environment. Adults, coming into this world as learners have to face the new literacies and conventions. But, adults learn in a unique way as they are more self-directed and can take responsibility for their own learning. A brief overview considered the various theories of learning, especially Andragogy.

Thinking (learning) skills have been identified in the research based Dimensions of Learning framework. Attitudes and perceptions (D1) and habits of mind (D5) are the backdrop of learning as knowledge is acquired, extended and refined and used meaningfully. The five dimensions are considered to work together to help learners think positively and constructively about themselves and their learning environment and provide the thinking skills and strategies for lifelong learning. The framework was applied to an adult learner research cohort in which the participant adult learners became prosumers and created a multimedia rich digital story.

6.2 Key Research Findings

Drawing on the literature review and empirical evidence, it was found that:

1. In may be stated that, in the creation of digital narrative and as research participants, all members of the research cohort have demonstrated the 21\textsuperscript{st} century thinking skills of critical thinking, communication, collaboration and creativity to varying degrees.
2. From a practical and instructional viewpoint, the Dimensions of Learning framework may have the potential to be adapted and applied to an adult learning environment.

However,

3. It cannot be inferred that the evidence of the 21st century skills demonstrated by the research cohort is as a direct result of the application of the DOL framework within this research project. There are too many other factors at play - learner’s life experience, readiness to learn, orientation, motivation, confidence, levels of engagement with the researcher as class teacher and the short time scale of the research project.

4. The attitudes and perceptions to digital media by this cohort of adult learners are predominantly positive.

5. There is evidence through the creation of the digital content and from responses in the surveys that the Adult learners underestimate the importance of the self-regulation habit of planning. It cannot be stated whether this is due to lack of knowledge or perception of the concept of planning.

In general, the findings indicate that it was eminently feasible to introduce the strategies of the Dimensions of Learning framework to an adult learner in an adult learning environment. The adult learners, who participated, demonstrated the 21st century thinking skills of critical thinking, communication, collaboration and creativity to varying degrees as they created a digital narrative. However, based on the research and self-analysis by the learners, it cannot be inferred that the thinking skills were taught or fostered as a result of the framework Overall, all participants demonstrated and stated that they have competent digital literacy skills.

6.3 Recommendations for future research

6.3.1 Dyslexic adults in a digital world

During the literature search, a topic that emerged was presented in a paper: An Investigation into the effects that digital media can have on the learning outcomes of individuals who have dyslexia (Beacham & Alty 2006). It was beyond the scope of this research project to explore this. However, this researcher would predict that an investigation into the learning outcomes of dyslexic adult learners using the Dimensions
of Learning framework and user generated digital media content would generate some very interesting findings.

6.3.2 Planning

The research found that there were ambivalent attitudes to planning among the adult learner research cohort. There was no scope to investigate further but, given that proper planning can have such an important role to play in the worlds of education and work, this researcher proposes that it would be worth further investigation in the world of adult learning.

6.4 Conclusion

Today’s learners inhabit a world with a new landscape. It is a landscape of diverse learning and rapidly evolving digital media experiences. New technologies and learning opportunities are increasingly impacting on personal life, work, entertainment and education in a globalised world. As adults learn and re-learn, they are active participants in shaping their learning. The new learning environment of a digital world must now incorporate the 21st Century Skills of Communication, Collaboration, Critical Thinking and Creativity.

"...When people learn how to think and learn their self-esteem and confidence grow. When people learn how to learn they not only cope with change and new technology - they welcome it. When people learn how to think and learn they have acquired the basic skills to master information literacy, be professionally self-directed and to attain personal growth. When people learn how to think and learn they are empowered to change from passive consumers to active controllers of their own lives"

Caron Egle (2009)
Bibliography


This bibliography lists all the main secondary sources accessed, quoted and consulted during the course of this research study. They may not all be incorporated or discussed in the actual Thesis paper.

Beacham, N. A. & Alty, J. L., 2006. An Investigation into the effects that digital media can have on the learning outcomes of individuals who have dyslexia. *Computers & Education, Volume* 47, pp. 74-93.


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### Appendix A: Overview of the Dimensions of Learning Framework

#### Declarative Knowledge

<table>
<thead>
<tr>
<th>What will be done to help students acquire and integrate declarative knowledge? (p. 83)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1:</strong> What declarative knowledge will students be in the process of acquiring and integrating? As a result of this unit, students will know or understand . . .</td>
</tr>
<tr>
<td><strong>Step 2:</strong> What experiences or activities will be used in help students acquire and integrate this knowledge?</td>
</tr>
<tr>
<td><strong>Step 3:</strong> What strategies will be used to help students construct meaning for, organize, and/or internalize this knowledge?</td>
</tr>
<tr>
<td><strong>Step 4:</strong> Describe what will be done.</td>
</tr>
</tbody>
</table>

#### Acquire and Integrate Knowledge

<table>
<thead>
<tr>
<th>What will be done to help students acquire and integrate procedural knowledge? (p. 106)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1:</strong> What procedural knowledge will students be in the process of acquiring and integrating? As a result of this unit, students will be able to . . .</td>
</tr>
<tr>
<td><strong>Step 2:</strong> What strategies will be used to help students construct models for, shape, and/or internalize this knowledge?</td>
</tr>
<tr>
<td><strong>Step 3:</strong> Describe what will be done.</td>
</tr>
</tbody>
</table>

#### Procedural Knowledge

<table>
<thead>
<tr>
<th>Construct Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help students understand the importance of constructing models for procedural knowledge. (p. 94)</td>
</tr>
<tr>
<td>Use a think-aloud process to demonstrate a new skill or process. (p. 94)</td>
</tr>
<tr>
<td>Provide or construct with students a written or graphic representation of the skill or process they are learning. (p. 95)</td>
</tr>
<tr>
<td>Help students see how the skill or process they are learning is similar to and different from other skills or processes. (p. 96)</td>
</tr>
<tr>
<td>Teach students to mentally review the steps involved in a skill or process. (p. 96)</td>
</tr>
</tbody>
</table>

#### Shape

<table>
<thead>
<tr>
<th>Help students understand the importance of shaping procedural knowledge. (p. 97)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate and create opportunities for students to practice using the important variations of the skill or process. (p. 98)</td>
</tr>
<tr>
<td>Point out common errors and pitfalls. (p. 99)</td>
</tr>
<tr>
<td>Help students develop the conceptual understanding necessary to use the skill or process. (p. 99)</td>
</tr>
</tbody>
</table>

#### Internalize

<table>
<thead>
<tr>
<th>Help students understand the importance of internalizing procedural knowledge. (p. 103)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help students set up a systematic schedule. (p. 102)</td>
</tr>
<tr>
<td>Have students chart and report on their speed and/or accuracy when practicing new skills or processes. (p. 105)</td>
</tr>
</tbody>
</table>

#### Example of Using the Dimensions of Learning Framework

<table>
<thead>
<tr>
<th>Dimension 1: Attitudes and Perceptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>What will be done to help students develop positive attitudes and perceptions? (p. 39)</td>
</tr>
<tr>
<td><strong>Step 1:</strong> Are there any goals or concerns related to students’ attitudes and perceptions in general or related to that specific unit?</td>
</tr>
<tr>
<td><strong>Step 2:</strong> What will be done to address these goals or concerns?</td>
</tr>
<tr>
<td><strong>Step 3:</strong> Specifically, will anything be done to help students develop positive attitudes and perceptions about classroom climate and classroom tasks?</td>
</tr>
<tr>
<td><strong>Step 8:</strong> Describe what will be done.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimension 2: Acquire and Integrate Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct Meaning</td>
</tr>
<tr>
<td>Help students understand what it means to construct meaning. (p. 73)</td>
</tr>
<tr>
<td>Use the three-minute pause. (p. 73)</td>
</tr>
<tr>
<td>Help students experience content using variety of senses. (p. 53)</td>
</tr>
<tr>
<td>Help students to construct meaning for vocabulary terms. (p. 34)</td>
</tr>
<tr>
<td>Present students with the K-W-L strategy. (p. 53)</td>
</tr>
<tr>
<td>Create opportunities for students to discover or figure out new information for themselves. (p. 56)</td>
</tr>
<tr>
<td>Use instructional techniques that provide students with strategies to use before, during, and after they receive information. (p. 58)</td>
</tr>
</tbody>
</table>

| Construct Models |
| Help students understand the importance of constructing models for procedural knowledge. (p. 94) |
| Use a think-aloud process to demonstrate a new skill or process. (p. 94) |
| Provide or construct with students a written or graphic representation of the skill or process they are learning. (p. 95) |
| Help students see how the skill or process they are learning is similar to and different from other skills or processes. (p. 96) |
| Teach students to mentally review the steps involved in a skill or process. (p. 96) |

| Shape |
| Help students understand the importance of shaping procedural knowledge. (p. 97) |
| Demonstrate and create opportunities for students to practice using the important variations of the skill or process. (p. 98) |
| Point out common errors and pitfalls. (p. 99) |
| Help students develop the conceptual understanding necessary to use the skill or process. (p. 99) |

| Internalize |
| Help students understand the importance of internalizing procedural knowledge. (p. 103) |
| Help students set up a systematic schedule. (p. 102) |
| Have students chart and report on their speed and/or accuracy when practicing new skills or processes. (p. 105) |

#### Classroom Climate

- Help students understand that attitudes and perceptions are related to classroom climate influence learning. (p. 15)
- Establish a relationship with each student in the class. (p. 16)
- Monitor and attend to your own attitudes. (p. 17)
- Engage in equitable and positive classroom behavior. (p. 17)
- Recognize and provide for students’ individual differences. (p. 18)
- Respond positively to students’ incorrect responses or lack of response. (p. 19)
- Vary the positive reinforcement offered when students give the correct response. (p. 19)
- Structure opportunities for students to work with peers. (p. 20)
- Provide opportunities for students to get to know and accept each other. (p. 21)
- Help students develop their ability to use their own strategies for gaining acceptance from their teachers and peers. (p. 21)
- Frequently and systematically use activities that involve physical movement. (p. 25)
- Introduce the concept of "learning." (p. 24)
- Establish and communicate classroom rules and procedures. (p. 24)
- Be aware of noises, testing or threats inside or outside of the classroom, and take steps to stop such behavior. (p. 26)
- Have students identify their own standards for comfort and order. (p. 26)

#### Classroom Tasks

- Help students understand that learning is influenced by attitudes and perceptions related to classroom tasks. (p. 29)
- Establish a sense of academic trust. (p. 30)
- Help students understand how specific knowledge is valuable. (p. 30)
- Use a variety of ways to engage students in classroom tasks. (p. 31)
- Create classroom tasks that relate to students’ interests and goals. (p. 32)
- Provide appropriate feedback. (p. 33)
- Teach students to use positive self-talk. (p. 33)
- Help students recognize that they have the ability to complete a particular task. (p. 33)
- Help students understand that working with others can help complete a task. (p. 34)
- Help students believe in their ability to complete a task and believe that they have the ability to get the help and the resources needed. (p. 34)
- Help students be clear about the directions and demands of the task. (p. 35)
- Provide students with clarity about the knowledge that the task addresses. (p. 35)
- Provide students with clear expectations of performance levels for tasks. (p. 36)
### Dimensions of Learning - Overview

#### Dimension 3: Extend and Refine Knowledge

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparing (p. 139)</td>
<td>Would it be useful to show how things are similar and/or different?</td>
</tr>
<tr>
<td>Would it be useful for students to focus on identifying how similar things are different and how different things are similar?</td>
<td></td>
</tr>
<tr>
<td>Would it be helpful to have students describe how comparing things affects their knowledge or opinions related to the things?</td>
<td></td>
</tr>
<tr>
<td>Classifying (p. 125)</td>
<td>Would it be helpful to have students group things together?</td>
</tr>
<tr>
<td>Would it be beneficial for students to generate a number of ways to group the same list of things?</td>
<td></td>
</tr>
</tbody>
</table>

#### Dimension 4: Use Knowledge Meaningfully

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision Making (p. 200)</td>
<td>Is there an unresolvable issue important to the unit?</td>
</tr>
<tr>
<td>Is there an unresolved issue about who or what is the best or worst?</td>
<td></td>
</tr>
<tr>
<td>Is there an unresolvable issue about who or what has the most or least?</td>
<td></td>
</tr>
<tr>
<td>Problem Solving (p. 202)</td>
<td>Is there a situation or process that has some major constraint or limiting condition?</td>
</tr>
<tr>
<td>Is there a situation or process that could be better understood if constraints or limiting conditions were placed on it?</td>
<td></td>
</tr>
<tr>
<td>Invention (p. 214)</td>
<td>Is there a situation that can and should be improved upon?</td>
</tr>
<tr>
<td>Is there something new that should be created?</td>
<td></td>
</tr>
</tbody>
</table>

#### Dimension 5: Habits of Mind

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Inquiry (p. 202)</td>
<td>Is there an unexplained phenomenon (physical or psychological) for which students could generate explanations that can be tested?</td>
</tr>
<tr>
<td>Investigation (p. 254)</td>
<td>Is there an unresolved issue about the defining characteristics or defining features of something? (Definitional)</td>
</tr>
<tr>
<td>Is there an unresolved issue about how something occurred? (Historical)</td>
<td></td>
</tr>
<tr>
<td>Is there an unresolved issue about why something happened? (Historical)</td>
<td></td>
</tr>
<tr>
<td>Is there an unresolved issue about what would happen if . . . or what would have happened if . . . (Projective)</td>
<td></td>
</tr>
</tbody>
</table>

### Habits of Mind

- 1. Help students understand habits of mind.
- 2. Help students identify and develop strategies related to the habits of mind.
- 3. Create a culture in the classroom and the school that encourages the development and use of the habits of mind.
- 4. Provide positive reinforcers to students who exhibit the habits.

<table>
<thead>
<tr>
<th>A Resource for Teachers</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Thinking (p. 274)</td>
<td></td>
</tr>
<tr>
<td>Creative Thinking (p. 294)</td>
<td></td>
</tr>
<tr>
<td>Self-Regulated Thinking (p. 290)</td>
<td></td>
</tr>
</tbody>
</table>
Appendix B: Research Permission request

Ms Helen O'Sullivan
Co-ordinator
Ennis VTOS
Adult Education Centre
Clonroad Business Park
Ennis
Co Clare

08 May 2013

Dear Helen

As you are aware, I am currently engaged on the Digital Media Development Masters Programme with the University of Limerick.

The Research I have chosen to study for my Thesis is:

An exploration of the adaptation of the Dimensions of Learning Framework to promote thinking skills in a 21st century Adult Learning environment through the development of digital media narrative.

In order to conduct the research, I ask your permission to approach Adult Learners on the Ennis VTOS programme to offer them the opportunity to participate in this research.

This research will involve a number of stages:

1. **Pilot group**: Convenience group to be asked to participate in e-research self-completion online survey to establish attitudes and exposure to digital media. I propose that this exercise will, of itself, be of benefit to the VTOS programme in the information generated. It will also provide an opportunity to highlight any potential problems which may arise for the core research survey.

2. **Research participatory group**: I would like to engage the Year 1 Business Studies group in this research. This again is primarily a convenience sampling group as I have access to this class group. Also, I propose that the research will be a support for and an enhancement of their learning with digital technologies to date.

As this group has completed the Level 5: Internet module this year, I suggest that it is a natural progression to continue working with digital technology for the remainder of the year. I propose to carry out the research during class time in the weeks: 20th - 24th May and 27th – 30th May.

While this is a serious small scale social research, I would very much intend to make the experience enjoyable and informative for all participants.

I would like to assure you of my integrity in undertaking this research.

I would also ask for academic trust that all learning will support the Learners on the Ennis VTOS programme.
I am attaching a copy of:

- Proposed Consent form for the Pilot and Research groups
- General overview of the Dimensions of Learning Framework.

If you have any questions or concerns, please contact me and I will be very happy to discuss them with you.

Thank you
Sincerely

Vivienne Purcell
e-mail: vpurcell@clarevec.ie

Coordinator approval of research (received in email):

Re: Research Permission Request
To: Vivienne Purcell

Vivienne
I am happy for you to conduct your research with Ennis VTOS learners - I attach a file with some comments. If there is anything further you need me to do please do not hesitate to ask.
Good luck with it
Helen
Appendix C: Consent Form - Pilot Group

CONSENT FORM – PILOT GROUP

Good morning/afternoon,
I, Vivienne Purcell, am currently studying for Masters in Digital Media Development with the University of Limerick. I am conducting a Research project for my Thesis. Part of the Research involves working with Digital media and digital Technologies.

I would like to formally invite you, as a Learner on the Ennis VTOS programme to participate in the e-research online survey about your Use of and Attitudes to Digital Media.

- Participation is voluntary.
- Assurance of anonymity:
  - It is necessary to have signed consent forms as evidence of voluntary participation. These will be kept securely by me as the Researcher.
  - The survey is anonymous. You will NOT be asked for your name or personal details in the surveys or digital media content which may identify you. All participants will be issued with a number which will be randomly be selected by yourself. You will use this number to access an email account. Please keep this number to yourself. The researcher will not know who receives what number. If inadvertently, a student’s name appears anywhere in documentation or electronic media – the researcher promises to ensure that it is deleted.

Signing this Consent Form is only to ensure that all participants have participated in a voluntary capacity and have been fully informed. I again state that your name will not be associated with the Responses/Findings of the Research Survey.

If you CHOOSE TO PARTICIPATE - Thank you.
Please continue reading and then sign and date the form in the space allocated below.

If you choose NOT TO PARTICIPATE, Thank you for your time in reading this. Please be assured that this decision will not in any way affect your status within the class or on the VTOS programme. Please return the form.

Thank you for your time:

Signed: (Researcher): _______________________________
UL ID number: 11092459
e-mail: vpurcell@clarevec.ie

AGREEMENT:
I agree to participate in the e-Research Survey: The Use of and Attitudes to Digital Media by Students on the Ennis VTOS programme.

Name (BLOCK LETTERS): _______________________________
Signature: _______________________________ Date: _______________
Appendix D: Consent form - Research Participant

INFORMED CONSENT FORM

Good morning/afternoon,

I, Vivienne Purcell, am currently studying for a Masters in Digital Media Development with the University of Limerick.

I am conducting a Research project on:

An exploration of the adaptation of the Dimensions of Learning Framework to promote Thinking Skills in a 21st century Adult Learning environment through the development of digital media narrative.

I would like to formally invite you, as a member of the First Year Business Studies Group to participate in this research.

- Participation is voluntary.
  - You may choose NOT to participate.
  - If you initially agree, you may choose to withdraw at any time.
  - Please be assured that if you choose to leave the research process, any information/material which may have been generated by you will be destroyed.

- Assurance of anonymity:
  - It is necessary to have signed consent forms as evidence of voluntary participation. These will be kept securely by me as the Researcher.
  - You can be assured of complete anonymity. You will NOT be asked for your name or personal details in the surveys or digital media content which may identify you. All participants will be issued with a number which will be randomly be selected by yourself. You will use this number to access an email account. Please keep this number to yourself. If inadvertently, a student’s name appears anywhere in documentation or electronic media – the researcher promises to ensure that it is deleted.

What will you gain?

I ask for your academic trust that the Tasks that I assign will be valuable and will further support your learning with digital technologies on the VTOS programme.

I foresee that you will gain from participation in a variety of ways:

- Exploration of Learning Styles & Multiple Intelligences surveys.
- Participation in e-research self-completion online surveys. The information sought is primarily concerned with attitudes to digital media.
Responding to all questions is voluntary but it expected that participant will participate freely and with openness.

- Learn about Windows Moviemaker to create and share a movie. The skills acquired in this will, most certainly, be useful in your personal life.

**How much of your time is required?**

This research will take place during timetabled class times (as normal):

Monday: 11.30am-1.00pm

Thursday: 9.30am – 1.30pm

The research process will commence on the week beginning Monday 20th May and will be completed on Thursday 30th May 2013.

**Who will have access to data once it is collected?**

Data collected and analysed is integral to my Thesis. This will be submitted to UL for assessment and a copy will be stored in the UL Repository. This is available to UL students. A copy may also be made available to the VTOS programme, should the Co-ordinator wish to have it. Your name and/or personal details will not be associated with this work.

Signing this Consent Form is only to ensure that all participants have participated in a voluntary capacity and have been fully informed. I again state that your name will not be associated with the Responses/Findings of the Research Survey.

If you **CHOOSE TO PARTICIPATE** - *Thank you.*

Please continue to Page 3.

Read the Agreement. Sign & date the form and return.

If you choose **NOT TO PARTICIPATE,** *Thank you for your time* in reading this. Please continue to Page 4.

Please sign and return this form.

Thank you for your time:

Signed: (Researcher):

UL ID number: 11092459
e-mail: vpurcell@clarevec.ie
PAGE 3:

**I WISH TO PARTICIPATE** in the Research project

**AGREEMENT:**

- I have read the nature and details of the research project.
- I understand the purpose of the research project and the nature of my involvement in it.
- I agree to voluntarily participate.
- I understand that I may withdraw from the research project at any stage and that this will not affect my status within the VTOS programme, or with the Researcher/Teacher: Vivienne Purcell either now or in the future.
- I understand that while the information gained during the study may be published, I will not be identified and any personal information or results will remain confidential.
- I understand that if I have any concerns, I am free to contact the VTOS Co-ordinator to discuss my involvement in this research.

Signed: (Research participant) ____________________________________________
Print name: __________________________________________________________
Date: ________________________________________________________________

PAGE 4:

**I DO NOT** wish to participate in the Research project:

Signed: _________________________
Print name: _______________________
Date:   _________________________

Please be assured that this decision will not in any way affect your status within the class, with the Class Teacher or on the VTOS programme.

You may bring in other work for your timetabled class time while this research is being carried out. Alternatively, we can make arrangements with another class Teacher to facilitate you.

I regret that it will not be possible for you to complete questionnaires etc. as this would distort/detract from the overall research results.
Appendix E: Permission to use VARK

With permission I would like to introduce VARK to 15 Adult Learners who have returned to Education due to unemployment, early school leaving and other reasons. I often hear the comment when asked a question by an Adult Learner: "this is a stupid question but....." I would like to open the possibility that people learn in different ways. Following on from that, I am presently working on personal development personal study and part of my Research Thesis is looking at Learning Styles within a framework of the world of digital media. I would like to use VARK with my research class of 15 Adult Learners. It goes without saying that all acknowledgements will be made. Thank you
Vivienne Purcell
Ireland
## Appendix F: Multiple Intelligences and Digital Technologies

<table>
<thead>
<tr>
<th>Multiple Intelligences and Digital Technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Verbal</strong></td>
</tr>
<tr>
<td><strong>Logical</strong></td>
</tr>
<tr>
<td><strong>Visual</strong></td>
</tr>
<tr>
<td><strong>Kinesthetic</strong></td>
</tr>
<tr>
<td><strong>Musical</strong></td>
</tr>
<tr>
<td><strong>Intrapersonal</strong></td>
</tr>
<tr>
<td><strong>Interpersonal</strong></td>
</tr>
<tr>
<td><strong>Naturalist</strong></td>
</tr>
<tr>
<td><strong>Existential</strong></td>
</tr>
</tbody>
</table>

(Pearson 2013)
Appendix H: Questionnaire - Attitudes & Perceptions

THANK YOU for agreeing to participate in this e-Research Survey Questionnaire

The purpose of this survey is to investigate ATTITUDES and PERCEPTIONS to Learning and in particular, attitudes and perceptions to digital and social media by students participating on the Ennis VTOS programme.

Digital Media refers to text, audio, video and photo content that has been created and stored in electronic format which can then be manipulated, distributed and played by computers over networks or on other technologies in the electronic world of the 21st century.

Social media refers to the various online technology tools that enable people to communicate easily via the internet to share information and resources. Social media can include text, audio, video, images, podcasts, and other multimedia communications.

While the survey will be anonymous, the findings will be analysed and incorporated into the Research Thesis to be submitted as part of the research being undertaken for the Masters in Digital Media Development in Education.

Mile Buíochas (Many thanks)
Vivienne

*Required

Section 1: General information
Please complete ALL questions. Questions with the asterisk * require an answer and you will not be able to continue the quiz until you have addressed them. Inputting NA will allow you to continue if the question does not suit you.

Q1: Gender *
- Male
- Female

Q2: Age range *
- 21-25
- 26-30
- 31-35
- 36-40
- 41-45
- 46-50
Q3: Were you born? *
   - Before 1982
   - On or after 1982

Q4: Is English your first language? *
   - Yes
   - No

Q5: LEARNING STYLE: When you are learning something new, which approach do you prefer? *
   - SHOW me
   - TELL me
   - LET me DO IT
   - Other:

Q5a: If you selected Other, please explain:

Section 2: Access to Digital Media & Technology

Q6: What does the phrase "Digital media" mean to you? *
Please give as detailed an answer as possible

Q7: At home, do you have: *
Select whichever option is appropriate
   - Personal computer
   - Laptop
   - iphone/smartphone
   - iPad, Tablet/slate, notebook
   - Other:
Q7a: If you answered Other to the previous question, please explain:

Q8: Do you like using technology? *

Q9: When at home, how often would you power up and spend time on the computer/laptop/iPad/iPhone/smartphone *

- [ ] Hourly
- [ ] Daily
- [ ] Every second day
- [ ] Weekly
- [ ] Monthly
- [ ] Only if I have to.
- [ ] Rarely

Q9a: When you spend time on the computer/laptop etc., what do you use your technology for? *

Q10: Do you use IT skills to: *

Please select as appropriate

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Sometimes</th>
<th>Not very good at it</th>
<th>Do not know what IT Skills means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research course material</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type up course work/assignments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For personal information</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>To pass the time</td>
<td></td>
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</tr>
</tbody>
</table>
Q11: Overall, how would you rate your level of skills with Information Technology & the Internet *
Please select as appropriate

<table>
<thead>
<tr>
<th></th>
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<th>2</th>
<th>3</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Basic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confident</td>
<td></td>
<td></td>
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</tbody>
</table>

Q12: How would you best describe you ICT skills in the following? *

<table>
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<th></th>
<th>Basic</th>
<th>Comfortable</th>
<th>Good</th>
<th>Advanced</th>
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<tbody>
<tr>
<td>Word processing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of the World Wide Web</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of email</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spreadsheet methods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Database</td>
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<td></td>
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</tr>
<tr>
<td>Publishing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graphics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q13: email: Do you use email? *

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Have an account but never use it.</th>
<th>Forget the login/password</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Personal email</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Business email</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>School email</td>
<td></td>
</tr>
</tbody>
</table>

Q14: If you have a personal email account, what account type do you have? *
- [ ] Gmail
- [ ] Hotmail
- [ ] Live
- [ ] Yahoo
- [ ] Eircom
- [ ] Other:

Q14a: If you answered Other to the question above, please explain

Photography

Q15: Do you have a digital camera? *
If the answer to this question is NO, please move on to Q22

- [ ] Yes
- [ ] No

Q16: How familiar are you with the workings of the camera?

<table>
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<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

Absolute beginner - I point and shoot
Select a value from a range from 1, Absolute beginner - I point and shoot, to 5, Very competent

16
Q17: If you have a camera, do you?
Click the drop down arrow to select from a list.

Q18: Do you edit your images?
- [ ] Yes
- [ ] No

Q18a: If you edit your images yourself, what software do you use?

Q19: Do you print your images?
- [ ] Yes
- [ ] No
- [ ] Sometimes

Q19a: If you answered NO to the previous question, please explain what you do with the images
Use an electronic photo frame, create a DVD, nothing etc.

Q20: Have you ever used any of the following with your photos?:
- [ ] Photostory
- [ ] Moviemaker
- [ ] Self publish a photobook
- [ ] Post to social media website, for example, Facebook
- [ ] Upload to Flickr
- [ ] Make a calendar
- [ ] Other

Q20a: If you answered OTHER to the previous question, please explain

Q21: Do you backup your photos?
- [ ] Yes
- [ ] No
- [ ] OOPS! Keep meaning to!
Q21a: If You answered Yes to Q21, how do you backup your photos?

Q22: Do you take videos? *
If the answer is NO, please skip to Q25 in Section 3
- [ ] Yes
- [ ] No
- [ ] Sometimes

Q22a: If you take video - what do you use e.g. video-camera, phone, digital camera etc.
Please specify

Q23: If you take video - What do you do with the video clip?
- [ ] Upload to YouTube
- [ ] Leave it on the phone/camera
- [ ] Share with family and friends
- [ ] Edit it
- [ ] Save it for future generations!
- [ ] Other: ____________

Q23a: If you answered Other to Q23, please explain

Q24: Video editing
If you edit videos, what software do you use and what do you do with the edited videos.
Please give as much detail as possible

Section 3 - The Internet and the World Wide Web

Q25: Do you use a search engine to search for information on the Web
- [ ] Yes
- [ ] No
- [ ] Sometimes
- [ ] Other: ____________

Q26: What search engine do you prefer?
Q27: What do you most use the World wide web (WWW) for?

- Online shopping
- Watch TV
- Online banking
- Book a flight
- Pay bills
- Renew insurance
- Renew TV licence
- Pay car tax
- Just to have fun surfing the web
- Search
- YouTube
- Other: 

Q27a: If you answered Other to the previous question, please explain in as much detail as possible:

Q28: Do you ever ask question at an online forums
If the Answer is YES, please give as much detail as possible, explaining what sites you find most useful

Section 4 - Social Media

Q29: What does the phrase "Social Media" mean to you?
Please give as detailed an answer as possible

Q30: Do you use your computer for entertainment?

- Music
- CatchUp TV programmes
- YouTube
- Watch movies
Q30a: If you answered Other in the previous question, please explain in as much detail as possible.

Q31: Do you have a FACEBOOK account?
If NO, please continue to Q35
- [ ] Yes
- [ ] No

Q32: How do you access your Facebook account?
- [ ] Computer
- [ ] Mobile phone
- [ ] Electronic organiser
- [ ] Other: 

Q33: How often do you access your Facebook account?
- [ ] Hourly
- [ ] Daily
- [ ] Weekly
- [ ] Occasionally
- [ ] Never
- [ ] Other: 

Q34: How long do you spend on Facebook when you login?
- [ ] Less than 30 minutes
- [ ] 30 minutes - 1 hour
- [ ] 2 hours
- [ ] 3 hours
- [ ] 4 hours
- [ ] Other: 

Q35: Do you TWEET using Twitter?
- ☐ Yes
- ☐ No
- ☐ Do not have an account
- ☐ Do not know what Twitter is
- ☐ Have no interest
- ☐ Other: 

Q36: Do you use SKYPE?
- ☐ Yes
- ☐ No
- ☐ Do not have an account
- ☐ Do not know what SKYPE is
- ☐ Have no interest
- ☐ Other: 

Q37: Do you have or have you used a Wiki?
- ☐ Yes
- ☐ No
- ☐ Do not have an account
- ☐ Do not know what a Wiki is
- ☐ Have no interest
- ☐ Other: 

Q38: Do you BLOG?
- ☐ Yes
- ☐ No
- ☐ Do not have an account
- ☐ Do not know what a blog is
Q39: Do you PhotoBLOG?
- [ ] Yes
- [ ] No
- [ ] Do not have an account
- [ ] Do not know what a photoblog is
- [ ] Have no interest
- [ ] Other: 

Q40: Do you use file sharing software?
A file sharing program is a program designed to distribute or receive digital files over a network. For example, BitTorrent
- [ ] Yes
- [ ] No
- [ ] Do not have an account
- [ ] Do not know what file sharing software means
- [ ] Have no interest
- [ ] Other: 

Q41: Do you use RSS?
RSS (Really Simple Syndication) is a format for delivering regularly changing web content. Many news-related sites, weblogs and other online publishers syndicate their content as an RSS Feed.
- [ ] Yes
- [ ] No
- [ ] Do not have an account
- [ ] Do not know what RSS means
- [ ] Have no interest
Q42: Do you use Digital Apps

- [ ] Yes
- [ ] No
- [ ] Do not have an account
- [ ] Do not know what Digital Apps means
- [ ] Have no interest
- [ ] Other: 

Q42a: If you use Digital apps - what apps have you found to be most useful?

Q43: Do you read using e-books for example - Kindle?

- [ ] Yes
- [ ] No
- [ ] Do not know what e-books are
- [ ] Have no interest
- [ ] Other: 

Q44: Have you ever learnt anything through an e-learning environment?

- [ ] Yes
- [ ] No
- [ ] Do not know what e-learning means
- [ ] Have no interest
- [ ] Other: 

Q44a: If you answered Yes to Q44, please explain in detail

Q45: If you do not use digital media, why not?

- [ ] Lack of time
- [ ] Lack of confidence
Q45a: If you answered Other, please explain:

Section 5: Where are you now? - Attitudes and Perceptions to Learning

Dimension 1

Q46: What stage do you feel you are at now with your use of digital technology?
Consider where you feel you are now in terms of technology, social and digital media in your life - home, work, education.

Q47: Tell us - what can we do to support your digital learning?
Is there anything that you feel that the VTOS programme can do/should have done to help you with your technological/digital media education?

Q48: Speaking of VTOS! - do you feel that you know your fellow Learners on the VTOS programme?
You are now at the end of your first/second year. Do you feel that you know the other people on the VTOS programme (even on nodding terms) Please answer as honestly as possible?

Q48a: What can we do to help Learners get to know each other?
Do you have any suggestions to make to help us provide opportunities for VTOS learners to get to know each other?

Q49: Classroom climate: Do you feel accepted by your fellow Learners on the VTOS programme?
Please answer as honestly as possible

Q50: Classroom climate: Do you feel accepted by the Teachers/Staff on the VTOS programme?
Please answer as honestly as possible
Q51: If you have answered NO to either or both Q49 and/or Q50 - what can we do to help resolve this?
Please answer as honestly as possible

Q52: Comfort and order - do you feel physical comfort in the classrooms assigned to the VTOS programme?
Please explain your answer in detail and offer any suggestions you may have

Q53: Classroom climate - Comfort and order: does the VTOS programme have clear identifiable routines?
Please explain your answer in detail

Q54: Classroom climate - Comfort and order: Do you feel the VTOS programme has clear guidelines for acceptable behaviour?
Please explain your answer in detail

Q54: Classroom climate - Comfort and order: Do you feel safe while attending classes/studying at the Adult Education centre
Please explain your answer

Q55: Classroom Tasks: In general, do you feel that the tasks you do (exercises, assignments etc.) are VALUABLE to your learning?
Please answer honestly and in detail

Q56: Classroom tasks: Do you feel that you have the ABILITY to complete the tasks (exercises, assignments etc.) that you are assigned?
Please answer honestly and in as much detail as possible

Q57: Classroom tasks: Do you feel that you have the RESOURCES to complete the tasks (exercises, assignments etc.) that you are assigned?
Please answer honestly and in as much detail as possible
Q58: Classroom tasks: In general, do you feel CLEAR about what you are asked to do as part of your learning?

Please answer honestly and in as much detail as possible

Q58a: Classroom tasks: If the answer to the previous question about clarity is NO, please tell us how we can improve this?

Please answer honestly and in as much detail as possible

Section 6: Learner Inventory

This inventory is an interest inventory - what about you!

Q59: If you could be anything in the world, what would it be?
Please answer in detail

Q60: Where would you like to go if you could go anywhere?
Please answer in detail

Q61: If you could live during any period in history, when would it be?
Please explain

Q62: Is there any project/activity that you are currently working on (outside VTOS)
Please explain

Q63: Is there any project/activity that you would like to work on?
Please explain

Q63a: If you answered yes to the previous question - What is stopping you?
Please explain

Q64: Your turn......
Have you any comments, or did I leave anything out??
Appendix I: Response Summary - Attitudes and Perceptions responses

Section 1: General information

Q1: Gender

<table>
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<tr>
<th>Gender</th>
<th>Count</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Male</td>
<td>1</td>
<td>14%</td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
<td>86%</td>
</tr>
</tbody>
</table>

Q2: Age range

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-25</td>
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<td>26-30</td>
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<td>31-35</td>
<td>2</td>
<td>29%</td>
</tr>
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<td>36-40</td>
<td>1</td>
<td>14%</td>
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<td>41-45</td>
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<td>46-50</td>
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<td>29%</td>
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</tr>
<tr>
<td>61-64</td>
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<td>0%</td>
</tr>
</tbody>
</table>

Q3: Were you born?

<table>
<thead>
<tr>
<th>Year Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 1982</td>
<td>7</td>
<td>100%</td>
</tr>
<tr>
<td>On or after 1982</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>
Q4: Is English your first language?

Yes  5  71%
No   2  29%

Q5: LEARNING STYLE: When you are learning something new, which approach do you prefer?

SHOW me  5  63%
TELL me   1  13%
LET me DO IT 1  13%
Other     1  13%

Q5a: If you selected Other, please explain:

I learn best by writing notes on information as it is given

Section 2: Access to Digital Media & Technology

Q6: What does the phrase "Digital media" mean to you?

means to me that something to do with media, to me digital media means movies images and music..be it watching or making them Access to newspapers, television, videos on the computer. images Internet, Sky TV I think of videos and technology. all forms of electronic communication - smart phones, tablets, pcs etc

Q7: At home, do you have:

Personal computer  3  21%
Laptop            7  50%
iphone/smartphone  2  14%
iPad, Tablet/slate, notebook 2  14%
Other             0  0%

Q7a: If you answered Other to the previous question, please explain: No responses
Q8: Do you like using technology?

Yes, because I am interested to learn and to know anything new. Yes, I think it is a great way to learn and educate. I find it great when doing photos or music. Yes, because it keeps me up to date on what is happening and enables me to do work fast and accurately. Yes, Yes. I have become more confident in using it for gathering info + emailing family that live abroad. Yes, because it is fast and you can communicate with everyone. I love email and looking up information on the internet. There is always something to do when you are connected to the internet. I love my phone and being able to stay in contact with people. I love all the options available on the smart TV. Yes, it's a great way of finding information fast and communicating. Also good for storage and viewing photos and videos.

Q9: When at home, how often would you power up and spend time on the computer/laptop/iPad/iPhone/smartphone

<table>
<thead>
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<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Hourly</td>
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<tr>
<td>Daily</td>
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<td>86%</td>
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<td>Every second day</td>
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<td>14%</td>
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<td>Weekly</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Monthly</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Only if I have to..</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Rarely</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Q9a: When you spend time on the computer/laptop etc, what do you use your technology for?

- Searching for new information in what I look for
- Use it for research for school
- Use it for social media to interact with friends and family I don't see often
- Use it for printing and editing photos
- Reading
- Writing emails
- Checking bank account
- Topping up phone credit
- Reading newspapers and news websites
- Watching RTE and 4OD for TV programmes I have missed
- Researching looking for information
- Education + pleasure emails, reading newspapers, researching
- Browsing the internet, email, banking online, reading newspapers, booking holidays, shopping, looking for information
Research course material [Q10: Do you use IT skills to:]

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>6</td>
<td>86%</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>1</td>
<td>14%</td>
</tr>
<tr>
<td>Not very good at it</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Do not know what IT Skills means</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Type up course work/assignments [Q10: Do you use IT skills to:]

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>6</td>
<td>86%</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>1</td>
<td>14%</td>
</tr>
<tr>
<td>Not very good at it</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Do not know what IT Skills means</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

For personal information [Q10: Do you use IT skills to:]

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
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<td>100%</td>
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<td>No</td>
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<td>Sometimes</td>
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<td>0%</td>
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<tr>
<td>Not very good at it</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Do not know what IT Skills means</td>
<td>0</td>
<td>0%</td>
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</tbody>
</table>

To pass the time [Q10: Do you use IT skills to:]

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
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<td>Sometimes</td>
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<td>43%</td>
</tr>
<tr>
<td>Not very good at it</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Do not know what IT Skills means</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Q11: Overall, how would you rate your level of skills with Information Technology & the Internet?

<table>
<thead>
<tr>
<th>Rating</th>
<th>Count</th>
<th>Percentage</th>
</tr>
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<td>5</td>
<td>1</td>
<td>14%</td>
</tr>
</tbody>
</table>
Word processing [Q12: How would you best describe you ICT skills in the following?]

Basic 0 0%
Comfortable 2 29%
Good 4 57%
Advanced 1 14%

Use of the World Wide Web [Q12: How would you best describe you ICT skills in the following?]

Basic 1 14%
Comfortable 1 14%
Good 4 57%
Advanced 1 14%

Use of email [Q12: How would you best describe you ICT skills in the following?]

Basic 0 0%
Comfortable 1 14%
Good 4 57%
Advanced 2 29%

Spreadsheet methods [Q12: How would you best describe you ICT skills in the following?]

Basic 3 43%
Comfortable 3 43%
Good 0 0%
Advanced 1 14%

Database [Q12: How would you best describe you ICT skills in the following?]

Basic 3 43%
Comfortable 2 29%
Good 2 29%
Advanced 0 0%
Publishing [Q12: How would you best describe you ICT skills in the following?]

- Basic: 5 (71%)
- Comfortable: 1 (14%)
- Good: 1 (14%)
- Advanced: 0 (0%)

Graphics [Q12: How would you best describe you ICT skills in the following?]  

- Basic: 4 (57%)
- Comfortable: 1 (14%)
- Good: 2 (29%)
- Advanced: 0 (0%)

Personal email [Q13: email: Do you use email?]

- Yes: 7 (100%)
- No: 0 (0%)
- Have an account but never use it: 0 (0%)
- Forget the login/password: 0 (0%)

Business email [Q13: email: Do you use email?]

- Yes: 1 (14%)
- No: 6 (86%)
- Have an account but never use it: 0 (0%)
- Forget the login/password: 0 (0%)

School email [Q13: email: Do you use email?]

- Yes: 4 (57%)
- No: 2 (29%)
- Have an account but never use it: 1 (14%)
- Forget the login/password: 0 (0%)

Q14: If you have a personal email account, what account type do you have?

- Gmail: 3 (38%)
- Hotmail: 2 (25%)
- Live: 0 (0%)
- Yahoo: 1 (13%)
Eircom 2 25%
Other 0 0%

Q14a: If you answered Other to the question above, please explain

Photography

Q15: Do you have a digital camera?

Yes 4 57%
No 3 43%

Q16: How familiar are you with the workings of the camera?

1 2 33%
2 1 17%
3 1 17%
4 2 33%
5 0 0%

Q17: If you have a camera, do you?:

Download the images to the computer yourself 3 50%
Bring the camera to the shop and ask the assistant to do it for me 0 0%
Family member/friend manages the images for me 1 17%
The images stay on the camera 0 0%
Other 2 33%
Q18: Do you edit your images?

Yes  2  33%
No   4  67%

Q18a: If you edit your images yourself, what software do you use?
picasa

Q19: Do you print your images?

Yes  2  33%
No   3  50%
Sometimes 1 17%

Q19a: If you answered NO to the previous question, please explain what you do with the images

i get them printed at the shop - then back them up onto my computer

Q20: Have you ever used any of the following with your photos?:

Photostory 0 0%
Moviemaker 0 0%
Self publish a photobook 0 0%
Post to social media website, for example, Facebook 2 29%
Upload to Flickr 0 0%
Make a calendar 1 14%
Other 4 57%

Q20a: If you answered OTHER to the previous question, please explain

Haven't done any of the options have not used any of the above
Q21: Do you backup your photos?

- Yes: 4 (67%)
- No: 2 (33%)
- OOPS! Keep meaning to: 0 (0%)

Q21a: If you answered Yes to Q21, how do you backup your photos?

- put them on a cd
- To USB upload to the PC, and external disc
- back them up on hard drive of computer and also on external hard drive

Q22: Do you take videos?

- Yes: 2 (29%)
- No: 4 (57%)
- Sometimes: 1 (14%)

Q22a: If you take video - what do you use e.g. video-camera, phone, digital camera etc

- phone, digital camera
  - i use a flip camcorder

Q23: If you take video - What do you do with the video clip?

- Upload to YouTube: 0 (0%)
- Leave it on the phone/camera: 0 (0%)
- Share with family and friends: 2 (67%)
- Edit it: 0 (0%)
- Save it for future generations!: 1 (33%)
- Other: 0 (0%)
Q23a: If you answered Other to Q23, please explain
i would sometimes make a dvd and also upload to facebook

Q24: Video editing
dont know how to edit videos

Section 3: The Internet and the World Wide Web

Q25: Do you use a search engine to search for information on the Web
Yes 7 100%
No 0 0%
Sometimes 0 0%
Other 0 0%

Q26: What search engine do you prefer?
Mozilla Firefox. Google. Internet explorer. google
chrome Google google www.google.ie google google

Q27: What do you most use the World wide web (WWW) for?
Online shopping 2 7%
Watch TV 2 7%
Online banking 3 11%
Book a flight 4 15%
Pay bills 2 7%
Renew insurance 0 0%
Renew TV licence 0 0%
Pay car tax 0 0%
Just to have fun surfing the web 6 22%
Search 4 15%
YouTube 4 15%
Other 0 0%

Q27a: If you answered Other to the previous question, please explain in as much detail as possible:
N/A n/a just have fun mmmmmmmmmm n/a use it mainly to browse the internet

Q28: Do you ever ask question at an online forums
No no No yes No no no
Section 4: Social Media

Q29: What does the phrase "Social Media" mean to you?

Facebook, my spice, link tine, it means interacting with people online that you don't see that often Facebook, Twitter, Facebook, Twitter It means Twitter and Facebook Facebook, Twitter etc

Q30: Do you use your computer for entertainment?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music</td>
<td>5</td>
<td>31%</td>
</tr>
<tr>
<td>CatchUp TV programmes</td>
<td>5</td>
<td>31%</td>
</tr>
<tr>
<td>YouTube</td>
<td>3</td>
<td>19%</td>
</tr>
<tr>
<td>Watch movies</td>
<td>3</td>
<td>19%</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Q30a: If you answered Other in the previous question, please explain in as much detail as possible

N/a

Q31: Do you have a FACEBOOK account?

<table>
<thead>
<tr>
<th>Status</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>57%</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>43%</td>
</tr>
</tbody>
</table>

Q32: How do you access your Facebook account?

<table>
<thead>
<tr>
<th>Access Method</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer</td>
<td>4</td>
<td>44%</td>
</tr>
<tr>
<td>Mobile phone</td>
<td>2</td>
<td>22%</td>
</tr>
<tr>
<td>Electronic organiser</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>33%</td>
</tr>
</tbody>
</table>
Q33: How often do you access your Facebook account?

- Hourly: 0 (0%)
- Daily: 2 (29%)
- Weekly: 2 (29%)
- Occasionally: 0 (0%)
- Never: 0 (0%)
- Other: 3 (43%)

Q34: How long do you spend on Facebook when you login?

- Less than 30 minutes: 1 (14%)
- 30 minutes - 1 hour: 3 (43%)
- 2 hours: 0 (0%)
- 3 hours: 0 (0%)
- 4 hours: 0 (0%)
- Other: 3 (43%)

Q35: Do you TWEET using Twitter?

- Yes: 0 (0%)
- No: 6 (86%)
Q36: Do you use SKYPE?

Yes 3 43%
No 4 57%
Do not have an account 0 0%
Do not know what SKYPE is 0 0%
Have no interest 0 0%
Other 0 0%

Q37: Do you have or have you used a Wiki?

Yes 5 71%
No 2 29%
Do not have an account 0 0%
Do not know what a Wiki is 0 0%
Have no interest 0 0%
Other 0 0%
### Q38: Do you BLOG?

<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>86%</td>
</tr>
<tr>
<td>Do not have an account</td>
<td>1</td>
<td>14%</td>
</tr>
<tr>
<td>Do not know what a blog is</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Have no interest</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Q39: Do you PhotoBLOG?

<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>71%</td>
</tr>
<tr>
<td>Do not have an account</td>
<td>1</td>
<td>14%</td>
</tr>
<tr>
<td>Do not know what a photoblog is</td>
<td>1</td>
<td>14%</td>
</tr>
<tr>
<td>Have no interest</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Q40: Do you use file sharing software?

<table>
<thead>
<tr>
<th>Option</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>2</td>
<td>29%</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>57%</td>
</tr>
</tbody>
</table>
Q41: Do you use RSS?

Yes: 0 (0%)
No: 4 (57%)
Do not have an account: 2 (29%)
Do not know what RSS means: 1 (14%)
Have no interest: 0 (0%)
Other: 0 (0%)

Q42: Do you use Digital Apps

Yes: 1 (14%)
No: 5 (71%)
Do not have an account: 1 (14%)
Do not know what Digital Apps means: 0 (0%)
Have no interest: 0 (0%)
Other: 0 (0%)

Q42a: If you use Digital apps - what apps have you found to be most useful?

I would use apps and games alot on my phone calenders and music apps like music paradise
Q43: Do you read using e-books for example - Kindle?

Yes 3 43%
No 4 57%
Do not know what e-books are 0 0%
Have no interest 0 0%
Other 0 0%

Q44: Have you ever learnt anything through an e-learning environment?

Yes 4 57%
No 3 43%
Do not know what e-learning means 0 0%
Have no interest 0 0%
Other 0 0%

Q44a: If you answered Yes to Q44, please explain in detail

i have learned a lot from e learning, from messing around with computer i found how to do banking on line shopping. social media banking online courses have done online exams

Q45: If you do not use digital media, why not?

Lack of time 2 29%
Lack of confidence 0 0%
Lack of know how 3 43%
Have no interest 0 0%
I DO use digital media 0 0%
Other 2 29%

Q45a: If you answered Other, please explain:

Section 5: Where are you now?-Attitudes and Perceptions to Learning-
Dimension 1

Q46: Where stage do you feel you are at now with your use digital technology?

OK with it i am very confident in where i am at the moment in computers i have learned alot more in the last year since returning to education..i am more confident in typing documents. downloading. reserch and a lot more Am in a good place but could learn more about cameras, videos etc., home5 out of 10 I know alot more since I started this vtos course. I am not interested in social media I feel it is too intrusive. Feel i have learnt alot on this area over past year but still a bit to go

Q47: Tell us - what can we do to support your digital learning?

need more knowledge about it. i think it varies with everyone on how they learn and at what speed i think vtos is doing ok with how it is teaching.. Videos, storybooks etc., yes I need to develop more confidence and maybe take a slower paced class It is all practice. The more we use it at school the more confident we will become. Maybe a bit more learning on some areas mentioned above e.g. photo and video editing

Q48: Speaking of VTOS! - do you feel that you know your fellow Learners on the VTO S programme?

ok. i feel our class clicked really well and have been there for support of each other I know some of my fellow students well but not all. yes Yes, i know alot of the students in 1 and 2nd years, and all very friendly and helpful, Yes very well. Yes, feel i know everyone in my group pretty well and a few from other groups in my classes but not too many others

Q48a: What can we do to help Learners get to know each other?

n/a maybe a class where people have to interact and have fun for one hour a week I don't know Maybe some activity together Group quizzes or games Trips away from school that we have time to talk to each other. Maybe a class together for first and second year business students once a week would help if possible
Q49: Classroom climate: Do you feel accepted by your fellow Learners on the VTOS programme?

Yes yes definitly i dont feel judged and people except for who i am Yes, Yes, I love my classmate Yes, felt very welcome and happy in all my classes and still feel the same and really look forward to year 2. yes

Q50: Classroom climate: Do you feel accepted by the Teachers/Staff on the VTOS programme?

yes yes i feel i get along with teachers and staff and they have made me have more confidence in myself Yes yes Yes, found 1 class tough going but i did my best in the exams yes

Q51: If you have answered NO to either or both Q49 and/or Q50 - what can we do to help resolve this?

n/a n/a

Q52: Comfort and order - do you feel physical comfort in the classrooms assigned to the VTOS programme?

yes. yes in most classes but on personal level i feel intimidated by having to get up and speak infront of people especially in a language Mostly but don't like when we have lectures in computer rooms, sitting on computer chairs facing the lecturer but not using the computer. There is often very little space around the computers to place paper work that you have to use for computer programmes yes Yes fine the canteen is very cold in the winter you have to wear your coat alot. yes

Q53: Classroom climate - Comfort and order: does the VTOS programme have clear identifiable routines?

yes yes and there very suppotive if a situation arises Some classes better than others yes Yes I am not sure what this question means. yes

Q54: Classroom climate - Comfort and order: Do you feel the VTOS programme has clear guidelines for acceptable behaviour?

yes Yes, although sometimes other students talk very loudly and it's impossible to concentrate on own work. yes Yes Yes, I think most people understand what is acceptable. yes
Q54: Classroom climate - Comfort and order: Do you feel safe while attending classes/studying at the Adult Education centre

yes yes its my safe haven during the week a time for me to mix with adults Yes yes Yes Yes there are no troublesome people here. yes

Q55: Classroom Tasks: In general, do you feel that the tasks you do (exercises, assignments etc) are VALUABLE to your learning?

yes yes i have learned lots in the last year Yes yes Most definiterly Absolutely I am learning loads. yes

Q56: Classroom tasks: Do you feel that you have the ABILITY to complete the tasks (exercises, assignments etc) that you are assigned?

yes i would hope i have achieved the standard in which assignments and exams have been giving and that i have done my best at them Most of the time I think so Yes to the best of my ability The last two weeks are heavy going as alot of exams are on the same week and that can be quite tough. yes

Q57: Classroom tasks: Do you feel that you have the RESOURCES to complete the tasks (exercises, assignments etc) that you are assigned?

yes yes Yes, mostly Yes, I have Yes Yes, Yes

Q58: Classroom tasks: In general, do you feel CLEAR about what you are asked to do as part of your learning?

yes yes Most of the time Yes Yes Yes. Yes

Q58a: Classroom tasks: If the answer to the previous question about clarity is NO, please tell us how we can improve this?

n/a Na na I feel clear to understand N/A n/a n/a

Section 6: Learner Inventory

Q59: If you could be anything in the world, what would it be?

n/a a peacemaker Employed! Archeologist More confident in computers and anything technical Being content and happy and have my health. I would like to be travel consultant
Q60: Where would you like to go if you could go anywhere?

USA Egypt or Dubai Israel, Tuscany Australia Italy. Then start work when I complete my course, if only part-time. I like America. I would like to live in Spain for a while.

Q61: If you could live during any period in history, when would it be?

home Victorian times The future! in 18th century Like to go back to 70's and have my mum still with me now in 2013 as she would be so proud of us a family Maybe about 20 years ago. World was a safer place. maybe 30 years ago.

Q62: Is there any project/activity that you are currently working on (outside VTOS)?

no I am part of a committee in my estate and we always organise things for kids and families in the area No No I was involve in ICA drama and help out with tidy town No No

Q63: Is there any project/activity that you would like to work on?

at the monument no. N/a Writing I don't know Crochet No. to take my studies further

Q63a: If you answered yes to the previous question - What is stopping you?

n/a N/a If I knew, I would have overcome it I don't know It is in hand n/a nothing

Q64: Your turn......

no coming to VTOS was the best decision I ever made and has boosted my confidence, gave me a prospective of what I want to do in life and made lovely new friends Pretty thorough No So happy to get a place on this course and make new friends etc etc Well done to VTOS TEam No.

You have now reached the end of the survey questions. Please make sure that you click SUBMIT to ensure that your responses are recorded.
Appendix J: Dimension 1 – classroom climate.

D1: Wordle created collaboratively by research cohort to describe programme and classroom climate.
Appendix K: Questionnaire - Review & Evaluation

Review & Evaluation - Research group

Good morning
Thank you for agreeing to work with me on my Research Project.
The core of the research is a case study approach to investigate how the Dimensions of Learning Framework can be adapted to an Adult Learning environment to promote thinking skills. Dimensions of Learning aims to provide Learners with skills, strategies and processes for lifelong learning.
The Task for the process: Create a digital story using Windows Moviemaker based on a story planned and created by yourself.
*Required

Dimension 1: Attitudes & Perceptions

We learn more effectively when we have a positive attitude. It is the responsibility of both the teacher and the student to work to maintain positive attitudes and perceptions.
It is important for Learners to:

- Feel accepted by their teachers and each other
- Have a sense of comfort and order
- See learning tasks as interesting and worthwhile.
- Believe they have the ability and resources to complete tasks.
- Understand and be clear about learning tasks

Q1: D1: Do you feel that you know your teacher and fellow classmates a little better *

☐ Yes
☐ No

Q2: D1: How did you feel about participating in the Two Truth and a Lie game? *

Please select from the drop down list

Q3: D1: Do you feel comfortable working in pairs or would you prefer to work alone? *

☐ I feel comfortable working with others
☐ I prefer to work alone
Q4: The VARK online quiz gave you a snapshot of your LEARNING STYLE. What was your strong style? *
Please tick as appropriate

- Visual
- Aural
- Read/Write
- Kinesthetic
- Multimodal

Q5: The Multiple Intelligences online quiz gave an indication of your varying intelligences.
Please select the intelligences which appear to be strongest for you

- Kinaesthetic - body smart
- Linguistic - word smart
- Logical - number smart
- Intrapersonal - Myself smart
- Visual/Spatial - Picture smart
- Interpersonal - People smart
- Musical - Music smart
- Naturalistic - Nature smart

Q6: D1: You were given a challenge to take a "BUTTON" and create the outline of a story, were you clear about the task?
Please feel free to be very honest

Q7: D1: Did you think this was an interesting exercise?
Please explain your answer.

Dimension 2: Acquire and Integrate Knowledge

Q8: D2: Do you know what Plagiarism means? *

☐ Yes
☐ No
☐ Unsure

Q8a: D2: Can you explain Plagiarism in your own words?
What does it mean to you?

Q9: D2: Can you explain what copyright means in your own words? *
Q10: D2. A number of strategies were introduced, which did you feel would be useful to you in your study? *
Please select as many as you like
☐ Brainstorming
☐ Concept/mind mapping
☐ Linear mapping
☐ Story boarding
☐ K-W-L (remember the sharks!)
☐ None of the above

Q11: D2: Do you feel comfortable that you have the skills to search online? *
☐ Yes
☐ No
☐ Need help

Q12: D2: Do you feel that you are able to save information/images from the Web to your memory stick/desktop? *
☐ Yes
☐ No
☐ Need help

Q13: D2: Windows Moviemaker was introduced to you. Do you feel that you have enough skill to look at it in more detail at a later stage on your own? *
☐ Yes
☐ No
☐ Need help

Q13a: D1: Did you find working with moviemaker interesting and worthwhile? *

Dimension 3: Extend and Refine Knowledge

Q14:D3: Did you have any difficulty in deciding appropriate images/music/video for your project? *

Q15:D3: Did the images you selected work within the movie project? *
Q16:D3: Were you able to easily visualise how the story would evolve? *

Q17:D3: Do you understand the difference between the movie project and the movie itself? *

☐ Yes
☐ No
☐ Not sure

Dimension 4: Use Knowledge meaningfully

Q18:D4: Did you find it easy to plan, draft and create your movie? *

Q19:D4: Did you run into problems in creating the movie project? If YES, how did you overcome them? *
Please explain in detail

Q20:D4: Are you happy with your storyline? *
Please explain in detail.

Dimension 5: Habits of Mind

Q21:D5: How would you rate your CRITICAL THINKING habits of mind? *

<table>
<thead>
<tr>
<th>Untrue of me</th>
<th>Sometimes true of me</th>
<th>Very True of me</th>
<th>I do not understand what is being asked in this question</th>
</tr>
</thead>
<tbody>
<tr>
<td>I check my work is correct and precise and I expect precision from others' work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I tend to be a clear communicator and seek clarity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I tend to have the ability to keep an open mind</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I can delay making a decision until I have more information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I tend to be take a position (stand) when a situation warrants it</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q22:D5: How would you rate your CREATIVE THINKING? *</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Please take your time to read the options available</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I tend to persevere and stick to a task when doing something</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I tend to push the limits of my knowledge and skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have my own standards of evaluation of my work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like to think outside the box and can look differently at a task</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q23:D5: Do you SELF-REGULATE your thinking? *</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can monitor my own thinking. For example: &quot;If I did that, then this would happen...&quot;</td>
</tr>
<tr>
<td>I plan appropriately: I actively plan and verbalise/write my plans</td>
</tr>
<tr>
<td>I can identify and use necessary resources - I am not afraid to ask for help</td>
</tr>
<tr>
<td>I actively seek out and respond to feedback.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I tend to be Respond to other's feelings and level of knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untrue of me</td>
</tr>
<tr>
<td>---------------</td>
</tr>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>I do not understand what is being asked in this question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untrue of me</td>
</tr>
<tr>
<td>---------------</td>
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Digital Storytelling

As part of the research you were asked to create a movie project and movie telling a story using images/music/video you researched online. The challenge lay in working with the new software: Windows Moviemaker which you may not have been familiar with. So how did you do?

Q24: Self-Evaluation: Considering the effort, time and work it took to complete your movie, how would you rate your own work? *
- I did a really good job and I learned something new
- I am satisfied with my work
- I could have done better
- I did not do very well
- Other

Q24a: Self-Evaluation: If you answered OTHER to question 24 above, please explain
- I did a really good job and I learned something new
- I am satisfied with my work
- I could have done better
- I did not do very well
- Other
- NA

Q25: What did you value most about creating the digital story? *

Q26: Did you use sources from a variety of media formats? *
- Yes
- No
- Do not understand the question

Q27: Did you find it interesting to create a movie? *
- Yes
- No
- Do not understand the question
Q28: Do you believe that you have the ability and resources to work with digital media? *

☐ Yes
☐ No
☐ Do not understand the question

Q29: Have you learned anything new about yourself and your thinking skills? *

Q30: What did you learn while participating in this research which you found most interesting? *

Q31: Was there any part of this research process that you really enjoyed and would like to investigate further? *

Q32: Any other comments

Please feel free to leave a comment - all taken as constructive criticism!

Have you uploaded a) the movie project and b) the movie to the server as directed. If not, please do so when you have completed this survey.

Before doing so, ensure that you have saved all the images (workfiles) movie project and the movie (.wmv) to the one folder. Rename it as Movie with your initials. Upload it to the Vivienne folder>Movie>on the VTOS shared drive.

Míle Buíochas - Many thanks

I very much appreciate that you have supported me in my research for my study with UL by participating in this research. I hope that you enjoyed the process and learned something new along the way. Regards Vivienne

You have reached the end of the e-research survey. Please do not forget to submit your responses. Click SUBMIT.
Appendix L: Response summary - Review & Evaluation responses

Q1: D1: Do you feel that you know your teacher and fellow classmates a little better

Yes    7    100%
No     0    0%

Q2: D1: How did you feel about participating in the Two Truth and a Lie game?

Comfortable    0    0%
Enjoyed it   7    100%
Did not like it    0    0%
Was absent on the day    0    0%

Q3: D1: Do you feel comfortable working in pairs or would you prefer to work alone?

I feel comfortable working with others 6    86%
I prefer to work alone 1    14%

Q4: The VARK online quiz gave you a snapshot of your LEARNING STYLE. What was your strong style?

Visual    0    0%
Aural    2    29%
Read/Write    5    71%
Kinesthetic    0    0%
Multimodal    0    0%
Q5: The Multiple Intelligences online quiz gave an indication of your varying intelligences.

- Kinaesthetic - body smart 1 10%
- Linguistic - word smart 1 10%
- Logical - number smart 0 0%
- Intrapersonal - Myself smart 3 30%
- Visual/Spatial - Picture smart 1 10%
- Interpersonal - People smart 3 30%
- Musical - Music smart 0 0%
- Naturalistic - Nature smart 1 10%

Q6: D1: You were given a challenge to take a "BUTTON" and create the outline of a story, were you clear about the task?
Yes. Yes Yes i was clear but ended up doing my own project based on a holiday I changed the subject matter as I was not feeling very creative with the "button" Yes, I was yes but was not sure how to create a story around the button found that a bit difficult Yes, very clear.

Q7: D1: Did you think this was an interesting exercise?
Yes. I enjoyed gathering all the information, but when movie shown could have done a bit better but learnt where i went wrong. Yes I found the holiday movie project gave me a bit more scope than the button project Very, once the subject matter was changed. Yes, it was interesting. yes because it was getting you to use your reative and imaginitive side that maybe you would not use much Yes. It left us very free to be creative.

Dimension 2: Acquire and Integrate Knowledge

8: D2: Do you know what Plagiarism means?

Yes 5 71%
No 1 14%
Unsure 1 14%
Q8a: D2: Can you explain Plagiarism in your own words?

Some copying another persons writings for a project/speech is Plagiarism. If you copy someone else work from a book etc you must reference it. copying or taking another persons work and using it as your own without any reference as to the true source of the work Copying others peoples work and passing it off as your own. No referencing. to take someone else work, pictures, music etc Copying someone else's work without attributing it.

Q9: D2: Can you explain what copyright means in your own words?

Normally find this on books, who published and dated Copyright is a legal concept, enacted by most governments. copyright means that you cannot replicate or use another persons work without their permission or without paying for same Words, pictures, music are protected by copyright so that they are not used freely without the author/artist being recompensed for same. It could result in legal action if you try to flaunt this law. to have right for your own work, pictures, videos etc means that you cannot take an image a song a video with out concent from the original person A legal barrier on using the written or graphic material of others.

Q10: D2. A number of strategies were introduced, which did you feel would be useful to you in your study?

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brainstorming</td>
<td>2</td>
</tr>
<tr>
<td>Concept/mind mapping</td>
<td>2</td>
</tr>
<tr>
<td>Linear mapping</td>
<td>1</td>
</tr>
<tr>
<td>Story boarding</td>
<td>3</td>
</tr>
<tr>
<td>K-W-L (remember the sharks!)</td>
<td>1</td>
</tr>
<tr>
<td>None of the above</td>
<td>1</td>
</tr>
</tbody>
</table>

Q11: D2: Do you feel comfortable that you have the skills to search online?

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>7</td>
<td>100%</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Need help</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Q12: D2: Do you feel that you are able to save information/images from the Web to your memory stick/desktop?

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>7</td>
<td>100%</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Need help</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>
Q13: D2: Windows Moviemaker was introduced to you. Do you feel that you have enough skill to look at it in more detail at a later stage on your own?

Yes 7 100%
No 0 0%
Need help 0 0%

Q13a: D1: Did you find working with moviemaker interesting and worthwhile?
Yes. Watching the movies of the other students were amazing. Its much interesting for me its very good yes, it is something i think i would use in the future Great fun and very interesting. Yes, it was interesting yes it was very interesting in how a story can be put together.. and a lovely finish to detail It was a lovely addition to our learning and definitely is one that I will use again.

Dimension 3: Extend and Refine Knowledge

Q14:D3: Did you have any difficulty in deciding appropriate images/music/video for your project?
No. Tutor and i selected. No no No I was very clear on my subject matter and was able to put a story together based on my life experiences. No no Initially I had some difficulty but learned to focus on exactly what I wanted to find.

Q15:D3: Did the images you selected work within the movie project?
No. Not all, a few of photos bad quality. Yes yes Very well. Yes tes for the theme i had i found the images to work really well Most of them did.

Q16:D3: Were you able to easily visualise how the story would evolve?
Yes. But should have added more. Yes yes Yes, once I mapped it out on a piece of paper. Yes yes once i got started i could see it coming together Yes.

Q17:D3: Do you understand the difference between the movie project and the movie itself?
Yes 7 100%
No 0 0%
Not sure 0 0%

Dimension 4: Use Knowledge meaningfully
Q18:D4: Did you find it easy to plan, draft and create your movie?
Yes and no, but most certainly enjoyed. Yes yes Yes Yes yes i found it really easy and very enjoyable Yes

Q19:D4: Did you run into problems in creating the movie project? If YES, how did you overcome them?
Not really, as it was so short. Yes, its to fast Just needed some help in setting it up No but I had to get help with the music input. No big problems i found it a bit tricky when it came to uploading music for the background as some sites are not very straight forward Yes. I learned to make sure the text was visible on the image, changing the colour if necessary. The use of the auto movie maker facility was very helpful.

Q20:D4: Are you happy with your storyline?
Happy with what i presented but know now i could have added more. It was a great learning process. Yes yes Very. It always can be better yes i was happy with story line Pretty happy. Was surprised how the storyline changed - the biggest change was having to shorten the text as it was too lengthy.

Dimension 5: Habits of Mind

I check my work is correct and precise and I expect precision from others' work

[Q21:D5: How would you rate your CRITICAL THINKING habits of mind?]  
Untrue of me 0 0%
Sometimes true of me 2 29%
Very True of me 5 71%
I do not understand what is being asked in this question 0 0%

I tend to be a clear communicator and seek clarity [Q21:D5: How would you rate your CRITICAL THINKING habits of mind?]  
Untrue of me 0 0%
Sometimes true of me 3 43%
Very True of me 4 57%
I do not understand what is being asked in this question 0 0%

I tend to have the ability to keep an open mind [Q21:D5: How would you rate your CRITICAL THINKING habits of mind?]  
Untrue of me 0 0%
Sometimes true of me 4 57%
Very True of me 3 43%
I can delay making a decision until I have more information [Q21:D5: How would you rate your CRITICAL THINKING habits of mind?]

- Untrue of me: 0 (0%)
- Sometimes true of me: 5 (71%)
- Very True of me: 2 (29%)
- I do not understand what is being asked in this question: 0 (0%)

I tend to take a position (stand) when a situation warrants it [Q21:D5: How would you rate your CRITICAL THINKING habits of mind?]

- Untrue of me: 0 (0%)
- Sometimes true of me: 5 (71%)
- Very True of me: 2 (29%)
- I do not understand what is being asked in this question: 0 (0%)

I tend to be Respond to other's feelings and level of knowledge [Q21:D5: How would you rate your CRITICAL THINKING habits of mind?]

- Untrue of me: 0 (0%)
- Sometimes true of me: 2 (29%)
- Very True of me: 5 (71%)
- I do not understand what is being asked in this question: 0 (0%)

I tend to persevere and stick to a task when doing something [Q22:D5: How would you rate your CREATIVE THINKING?]  

- Untrue of me: 0 (0%)
- Sometimes true of me: 4 (57%)
- Very true of me: 3 (43%)
- I do not understand what is being asked in this question: 0 (0%)

I tend to push the limits of my knowledge and skills [Q22:D5: How would you rate your CREATIVE THINKING?]  

- Untrue of me: 0 (0%)
- Sometimes true of me: 4 (57%)
- Very true of me: 3 (43%)
- I do not understand what is being asked in this question: 0 (0%)
I have my own standards of evaluation of my work [Q22:D5: How would you rate your CREATIVE THINKING?]

<table>
<thead>
<tr>
<th>Statement</th>
<th>Untrue of me</th>
<th>Sometimes true of me</th>
<th>Very true of me</th>
<th>I do not understand what is being asked in this question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untrue of me</td>
<td>0</td>
<td>0%</td>
<td></td>
<td></td>
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<tr>
<td>Sometimes true of me</td>
<td></td>
<td>4</td>
<td>57%</td>
<td></td>
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<tr>
<td>Very true of me</td>
<td>3</td>
<td>43%</td>
<td></td>
<td></td>
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<tr>
<td>I do not understand what</td>
<td>0</td>
<td>0%</td>
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<tr>
<td>is being asked in this</td>
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<td>9</td>
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<td>question</td>
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</table>

I like to think outside the box and can look differently at a task [Q22:D5: How would you rate your CREATIVE THINKING?]

<table>
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<tr>
<td>Untrue of me</td>
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<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes true of me</td>
<td></td>
<td>6</td>
<td>86%</td>
<td></td>
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<tr>
<td>Very true of me</td>
<td>1</td>
<td>14%</td>
<td></td>
<td></td>
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<tr>
<td>I do not understand what</td>
<td>0</td>
<td>0%</td>
<td></td>
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<tr>
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</tr>
<tr>
<td>question</td>
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</tbody>
</table>

I can monitor my own thinking. For example: "If I did that, then this would happen..." [Q23:D5: Do you SELF-REGULATE your thinking?]

<table>
<thead>
<tr>
<th>Statement</th>
<th>Untrue of me</th>
<th>Sometimes true of me</th>
<th>Very true of me</th>
<th>I do not understand what is being asked in this question</th>
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<tr>
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<td></td>
<td></td>
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<tr>
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<tr>
<td>question</td>
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</table>

I plan appropriately: I actively plan and verbalise/write my plans [Q23:D5: Do you SELF-REGULATE your thinking?]

<table>
<thead>
<tr>
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<th>Sometimes true of me</th>
<th>Very true of me</th>
<th>I do not understand what is being asked in this question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untrue of me</td>
<td>1</td>
<td>14%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes true of me</td>
<td>1</td>
<td>14%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very true of me</td>
<td>4</td>
<td>57%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not understand what</td>
<td>1</td>
<td>14%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>is being asked in this</td>
<td></td>
<td>9</td>
<td></td>
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</tr>
<tr>
<td>question</td>
<td></td>
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</tbody>
</table>

I can identify and use necessary resources - I am not afraid to ask for help [Q23:D5: Do you SELF-REGULATE your thinking?]

<table>
<thead>
<tr>
<th>Statement</th>
<th>Untrue of me</th>
<th>Sometimes true of me</th>
<th>Very true of me</th>
<th>I do not understand what is being asked in this question</th>
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<tr>
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<td>0</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>3</td>
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</tr>
<tr>
<td>question</td>
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</tr>
</tbody>
</table>
I actively seek out and respond to feedback. [Q23:D5: Do you SELF-REGULATE your thinking?]

<table>
<thead>
<tr>
<th>Untrue of me</th>
<th>Sometimes true of me</th>
<th>Very true of me</th>
<th>I do not understand what is being asked in this question</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>0%</td>
<td>71%</td>
<td>29%</td>
<td>0%</td>
</tr>
</tbody>
</table>

I evaluate the effectiveness of my own actions [Q23:D5: Do you SELF-REGULATE your thinking?]

<table>
<thead>
<tr>
<th>Untrue of me</th>
<th>Sometimes true of me</th>
<th>Very true of me</th>
<th>I do not understand what is being asked in this question</th>
</tr>
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<tbody>
<tr>
<td>0</td>
<td>4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>0%</td>
<td>57%</td>
<td>43%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Digital Storytelling

Q24: Self-Evaluation: Considering the effort, time and work it took to complete your movie, how would you rate your own work?

<table>
<thead>
<tr>
<th>I did a really good job and I learned something new</th>
<th>I am satisfied with my work</th>
<th>I could have done better</th>
<th>I did not do very well</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>57%</td>
<td>29%</td>
<td>14%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Q24a: Self-Evaluation: If you answered OTHER to question 24 above, please explain

<table>
<thead>
<tr>
<th>I did a really good job and I learned something new</th>
<th>I am satisfied with my work</th>
<th>I could have done better</th>
<th>I did not do very well</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Q25: What did you value most about creating the digital story?
Been actually able to do it and how useful it will be for future works, could show my daughter how to do a photo album. Its new for me very good it was nice to be able to bring pictures and music together to create a movie - i like that fact that its a skill i can use again My sense of humour. it was fun my images Learning an exciting new skill was great! I will be able to use it for many family photographs and perhaps for some presentations.

Q26: Did you use sources from a variety of media formats?
Yes 4 57%
No 2 29%
Do not understand the question 1 14%

Q27: Did you find it interesting to create a movie?
Yes 7 100%
No 0 0%
Do not understand the question 0 0%

Q28: Do you believe that you have the ability and resources to work with digital media?
Yes 7 100%
No 0 0%
Do not understand the question 0 0%

Q29: Have you learned anything new about yourself and your thinking skills?
Well yes, i can do it Yes I learned that i am an aural/read/write learner Anything is possible to learn. Probably yes i have definately learned to be more positive in myself and more confidence and to possibly to listen a bit more Yes. Some good and some not so great!

Q30: What did you learn while participating in this research which you found most interesting?
The other students work, fab, all so different. I learn how to make my movie by researching for images and videos from the Internet. That its not as difficult as i would have thought which is true of alot of things That things are not as hard as they look I don't know learning about each other in the question game and learning how my results came out in the test we had to take The way words and images can combine to tell a story and how relatively easy that can be.
Q31: Was there any part of this research process that you really enjoyed and would like to investigate further?

Enjoyed all. Yes. i would like to make to make movies using my own photos Maybe do it in more detail. Everything I enjoyed definatly the moving making i really enjoyed and feel there is so much more i could learn from it The whole moving making thing interests me and I will investigate further

Q32: Any other comments

Enjoyed moviemaker. No interesting project - it is good to learn things which can be useful No it was great to learn something that i have never even looked at before.. because of fear of doing it wrong or not understanding it Am delighted to have learned this!

Have you uploaded a) the movie project and b) the movie to the server as directed. If not, please do so when you have completed this survey.

Míle Buíochas - Many thanks

PLEASE CLICK SUBMIT
### Appendix M: Research Timeline

<table>
<thead>
<tr>
<th>Week beginning</th>
<th>Proposed Calendar of Study and Thesis development</th>
</tr>
</thead>
<tbody>
<tr>
<td>02 Nov 2012</td>
<td>Finalise the Thesis Proposal and submit.</td>
</tr>
<tr>
<td>05 -12 Nov 2012</td>
<td>Secondary research – continue secondary research for Literature review.</td>
</tr>
<tr>
<td>19 Nov 2012</td>
<td>UL – meet Tutor</td>
</tr>
<tr>
<td>26 Nov 2012</td>
<td>Review of work to date and implement any adjustments to be made. Prepare permission/consent forms etc. and apply for Research approval from Ethics Board. Continue Secondary research.</td>
</tr>
<tr>
<td>03 Dec 2012</td>
<td>Secondary research. Plan and prepare the Primary research brief. Seek permissions for research from potential participants &amp; Programme Co-ordinator. Review online survey and update as necessary. Ensure participant access available.</td>
</tr>
<tr>
<td>10 Dec 2012</td>
<td>UL – Research Conference 1</td>
</tr>
<tr>
<td>17 Dec 2012</td>
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<tr>
<td>24-28 Dec 2012</td>
<td>Away</td>
</tr>
<tr>
<td>31 Dec 2012 – 04 Jan 2013</td>
<td>Christmas holidays: Plan of work to be continued over the holiday period. Continued Preparation for primary research of the Project.</td>
</tr>
<tr>
<td>07 Jan 2013</td>
<td>Draft Lit review to Tutor</td>
</tr>
<tr>
<td>09 Jan 2013</td>
<td>Continued Preparation for primary research &amp; continue secondary research</td>
</tr>
<tr>
<td>16 Jan 2013</td>
<td>Finalise primary research briefs for the Project. Ensure all hardware &amp; software is compliant.</td>
</tr>
<tr>
<td>04 -11 Feb 2013</td>
<td>Draft preparation</td>
</tr>
<tr>
<td>18 Feb 2013</td>
<td>Draft e-research survey sent to Supervisor and feedback received</td>
</tr>
<tr>
<td>25 Feb -25 Mar 2013</td>
<td>On-going research and draft write up</td>
</tr>
<tr>
<td>01 – 05 Apr 2013</td>
<td>Easter holidays. Continued work on write up.</td>
</tr>
<tr>
<td>08 -15 Apr 2013</td>
<td>Draft write up</td>
</tr>
<tr>
<td>23 Apr 2013</td>
<td>Conference call with Supervisor and Group</td>
</tr>
<tr>
<td>27th Apr 2013</td>
<td>Face-to-Face meeting with Supervisor to discuss work to date.</td>
</tr>
<tr>
<td>20th May &amp; 23rd May 2013</td>
<td>Research: face-to-face contact</td>
</tr>
<tr>
<td>27th May &amp; 30th May 2013</td>
<td>Research: face-to-face contact</td>
</tr>
<tr>
<td>01-30 Jun 2013</td>
<td>Draft write up: Draft submission to supervisor for feedback</td>
</tr>
<tr>
<td>01-31 Jul 2013</td>
<td>Draft write up</td>
</tr>
<tr>
<td>08 July 2013</td>
<td>Conference call with Supervisor and Group</td>
</tr>
<tr>
<td>01-31 Aug 2013</td>
<td>Draft write up</td>
</tr>
<tr>
<td>October 2013</td>
<td>Submission of Thesis for grading and for consideration at the Winter Exam Board</td>
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Appendix N: Resources

The following are some of the strategies and resources presented to the research cohort as part of the DOL framework to foster 21st century thinking skills of Communication, Collaboration, Critical Thinking and Creativity in the development of digital media narrative.

Mind mapping

![Mind Map Diagram]

This resource was originally adapted and presented by this researcher as part of the project required for the Grad Dip in Digital Media development 2012-2013

Other mind mapping resources:

SQ3R: SQ3R incorporates the stages of: Survey, Question, Read, Recall and Review in order to structure the reading content.

**SQ3R — Reading Technique**  
*Increasing Your Retention of Written Information*

The acronym SQ3R—Survey, Question, Read, Recite, Review.

The SQ3R reading technique is a study-reading technique that was developed by Francis P. Robinson of the Ohio State University.

SQ3R is a useful technique for fully absorbing written information. SQ3R helps you to create a good mental framework of a subject, into which you can fit facts correctly. It helps you to set study goals. It also prompts you to use the review techniques that will help to fix information in your mind. By using SQ3R to actively read a document, you can get the maximum benefit from your reading time.

The acronym SQ3R stands for the five sequential techniques you should use to read a book:

- **Survey:**
  Survey the document: scan the contents, introduction, chapter introductions and chapter summaries to pick up general idea of what the piece is about. Look at the headings, read any words in capitals, dates, graphs and statistics. Form an opinion of whether it will be of any help. If it does not give you the information you want, discard it.

- **Question:**
  Make a note of any questions on the subject that come to mind, or particularly interest you following your survey. Perhaps scan the document again to see if any stand out. These questions can be considered almost as study goals - understanding the answers can help you to structure the information in your own mind. What have I learned from that particular sentence/paragraph?

- **Read:**
  Now read the document. Vary the way you read and your reading speed. Read through useful sections in detail, taking care to understand all the points that are relevant. In the case of some texts, this reading may be very slow. This will particularly be the case if there is a lot of dense and complicated information. (While you are reading, it can help to take notes in Mind Map format)

- **Recall:**
  Once you have read appropriate sections of the document, run through it in your mind several times. What was the text about? Make your notes now. Don’t copy. Set out the main points as you remember them and check with the text if you are not sure.

- **Review:**
  Once you have run through the exercise of recalling the information, you can move on to the stage of reviewing it. Look back over the text to make sure you haven’t missed anything or distorted the information in the passage. Check your notes for gaps. A particularly effective method of reviewing information is to have to teach it to someone else!

*Do not put your notes away. Review them soon and often.*
K-W-L strategy

Introduced by Donna Ogle in 1986, K-W-L charts have been widely used to help learners prepare for reading by organising what learners Know (K), want to learn (W) before they have read and then reflecting on what they have learned (L).
Brainstorming Rules

How to Brainstorm

1. Write down every thought and idea. Every thought and idea has value.

2. Record thoughts and ideas very quickly. Keep things moving with a rapid flow of ideas.

3. Do not interrupt the flow to judge any thoughts or ideas. Record all thoughts even if they seem off topic, unrelated, or even dumb.

4. Remember that ideas that do not seem worth recording might prove to be important after all. At the very least, they may lead to other valuable ideas.

5. Brainstorming can be done alone, but the more people involved in the process, the more ideas will be generated.

6. Keep brainstorming until the ideas slow down. Take a deep breath, pause, and be ready to record some more ideas. They will still trickle in for a while.

7. When the ideas finally seem to slow to a stop, look over what was generated.

8. Use the best ideas.
Digital story telling

Royalty free music:

The following websites are good places to find royalty-free music to use in your project.

- **MagnaTune**: [http://magnatune.com/](http://magnatune.com/)
- **download.com**
- **Partners in Rhyme**
- **Free piano music by William Cushman at Ghost Notes Blog**: [http://ghostnotes.blogspot.ie/](http://ghostnotes.blogspot.ie/)

Free Image Sources

Image-Editing

- **Photoshop Elements** Trial Version (PC)
- **SumoPaint** - Online Image-editing Photoshop-like Tools
- **Pixlr** - Online Image-editing Tools
- **iPiccy** - Online Image-editing Tools

Image Search Engines

- **Behold** - **Search** engine for quality creative commons photos on Flickr
- **Creative Commons** - Search engine artists sharing their work with non-commercial organizations
- **Google Images** - Advance Searching Strategies
- **Flickr Storm** - search engine using the filter for non-commercial images
- **Stock.Xchang** - Free Stock Images
- **Behold**
- **Tagxedo**
- **liteflick**
- **Multicolr Search Lab** -
- **World Images** - search engine hosted by San Jose State University more than 75,000 images

Copyright

- **Fair Use and Copyright for Teachers**