The Impact of a Social Learning Network on Teaching and Learning of History at Junior Certificate in a Rural Secondary School – A Case Study

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Declaration

I hereby declare that this work is entirely my own and has not been submitted for the award of any degree at any other university.

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Abstract

We live in a changing society where information technologies have become an integral part of society. The emergence of social media networks or Web 2.0 technologies has provoked many in education fields to question the very nature teaching and learning.

New technologies provide the platform for educators to rethink pedagogical practice in light of the 21st century learner. There is a shift from the traditional mode of teaching where the teacher is central to the learning process, to one where learners construct meaning through interaction and collaboration with others. Learning is no longer restricted to the classroom but more so to all facets of life, at work, play and home. The phenomenon that is social networking sites lends weight to their integration into teaching and learning. Social media shifts the emphasis from the content of the subject to the learning activities and human interactions around which content is situated.

The research study involved forty second year students from a rural co-educational secondary school in Co. Limerick. It looks at the implications of using a social learning network on teaching and learning of History at Junior Certificate in a rural secondary school. The participants were divided into two groups – a control group and a study group. The control group were taught using traditional methods of teaching and the study group were taught using a social learning network. Students participated in questionnaires, t-testing, observations and interviews. Both groups underwent a pre-test and a post test in order to compare results. Furthermore, the study focused on pedagogical practice and presents literature on the necessity for change in education delivery.
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Chapter 1

Introduction

1.1 Statement of Topic

Since the arrival of the digital age, technology is evolving all the time and with this, education is also witnessing a similar trend. Information technologies have become part and parcel of modern society. Richardson (2012) certainly supports this viewpoint and insists that education must evolve for the 21st century learner. He highlights how education has changed from one where schools were built upon a fundamental premise that knowledge and information were scarce to one where this is no longer the reality. He challenges traditional thinking about education and outlines how schools can adjust to this new digital age. Richardson states that “the Internet has delivered an explosion of learning opportunities for today’s students…Traditional educators, classrooms and brick-and-mortar schools are no longer necessary to access information.”

The very nature of teaching and learning is transforming from an environment where educators teach in isolation to one where they can communicate instantly and directly, collaborate and share information (Carlson and Cadio, 2002). Carlson and Cadio argue that technology “embraces a shift away from teacher-centered, lectured-based instruction toward student-centered, interactive, constructivist learning.” Dan Power (2012) argues that the emergence of social media has triggered an “education revolution” where its impact is radically changing the way education has been traditionally delivered.

From his study of Marshal McLuhan’s ‘Global Village’, Symes (1995) infers that social media sites like Facebook, Twitter and YouTube connect people around the world “in ways Marshall McLuhan could not have dreamed of when he popularised the term back in the 1960s.” It turns out that half a decade later, we find that McLuhan’s concept has materialised. New ideas and information is being shared by people all over the world via the digital media, notably, the Internet (Symes, 1995). Panjiar (2012) explains that it is not surprising that the impact of social media is being felt considerably in the education sector stating that “with the help of platforms and social media tools, students nowadays are collaborating on world challenging projects, and educators are bringing expert lecturers into their classrooms via social media.” Students that learn this way tend to be more focused,
more motivated and experience what psychologist Czikszentmihalyi (1990) describes as “optimum flow” in the classroom. According to Forrester and Jantzie (1998), learning theorists are advocating the greater use of technology in learning situations so as to replicate optimum moments of flow. In Prensky’s words, today’s generation of learners “have spent their entire lives surrounded by and using computers, video games, digital music players, video cams, cell phones and all the other toys and tools of the digital age.” Prensky (2001) defines this generation of learners as “Digital Natives”. In his book Growing up Digital: The Rise of the Net Generation, Tapscott suggests that learning is undergoing a transformation, whereby what he defines as “broadcast” learning is being substituted by “interactive” learning. Prensky goes as far to suggest that the education system is playing catch-up as educators attempt to redesign a curriculum that is more relevant and appropriate to the digital generation. A curriculum that adopts and applies, for example, social media activities that these learners are already familiar with. Prensky supports this argument and presents the following question: “Should the Digital Native student learn the old ways or should the Digital Immigrant educators learn the new?” Prensky concludes, arguing that educators must teach in the language and style of their students – the digital language. Given the influence social media has on society and education, it is reasonable to ask what influence it will have on the learning process for students. Will it influence their attainment? More importantly, will it influence their attitude to the learning process or experience as a whole?

1.2 Central Project Question

In the last decade, the impact of social media has had a profound effect on teaching and learning across a range of disciplines. Statistics indicate that social networking is here to stay. Currently, there are almost 2.5 million Facebook users in Ireland alone, which accounts for over 50 per cent of the population or more importantly, almost 75 per cent of the online population. Nielsen Online (2009) estimates that, globally, 67% of Internet users accessed social networking sites in 2008. According to the 2009 Youthnet report (Hulme, 2009), 75% of 16-24 year olds claimed they could not live without the Internet. The very nature of education and how it is delivered stands at a crossroads. Do educators choose a path in which we “destroy what is great about the Internet and how young people use it” or do we choose a favourable one in which “we make smart choices and head toward a bright future” in a digital age?
There is no doubt that students are actively engaging in an online community culture and therefore, as educators, should we be rethinking the very meaning of teaching and learning in the 21st century? In their report (2010) entitled “Transforming American Education: Learning Powered by Technology”, the US Department of Education suggests that despite the challenges faced by educators today, the delivery of education requires a rethink. As with Prensky, the report states that “the challenge for our education system is to leverage the learning sciences and modern technology to create engaging, relevant and personalised learning experiences for all learners that mirror students’ daily lives and reality of their futures.”

The Cisco Connected Insights white paper “Transforming Education, Transforming Lives: A Path Toward Next-Generation Learning” outlines that today’s education is undergoing change at an unprecedented rate. The paper explains that globalisation and technological change mean that tomorrow’s workforce needs to have “new skills and be prepared to learn throughout life.” Adding to this, it highlights the critical role that technology has to play in improving equity. “Students from across the globe can use technology to interact with resources and information, outside experts, and one another regardless of physical location or demographic status.”

The very nature of social media is what will drive education for digital learners.

Palfrey and Gasser (2008) state that young people do not distinguish between the online and the offline. Their opinion is based on the notion that today’s learners do not see their digital identity and their real-space identity as separate things. They just have a shared identity where they are “joined by a set of common practices.” They feel comfortable in online environments as they do in offline ones. Their “hybrid lives” are the norm. This hybrid nature is not seen as anything remarkable. Social media has become multi-faceted and multi-functional; the emergence of social learning network sites is testament to this. Edmodo, a social learning network, offers new and exciting opportunities for teaching and learning. The modern day classroom demands teachers to differentiate their teaching in order to meet the needs of all learners. Edmodo provides teachers with a route through which they can customise the education model to accommodate all differences.
This case study aims to address the following questions:

1. Why should teachers rethink their pedagogical practice in light of the emergence of Web 2.0 technologies?
2. What are the implications of social learning networks on teaching and learning of History at Junior Certificate level in a rural secondary school?

1.3 Relevance

Presently, educators are witnessing a shift from traditional methodologies to those that give a greater emphasis on the higher order learning. Many students’ lives today are filled with technology that gives them “mobile access to information and resources 24/7, enables them to create multimedia content and share it with the world, and allows them to participate in online networks where people from all over the world share ideas, collaborate and learn new skills.”

For the 21st century learner, the learning extends beyond the walls of the classroom where students “are free to pursue their passions in their own way and at their own pace”, where opportunities are “limitless, borderless and instantaneous.” According to Seely Brown and Adler (2008), the Internet is and will play a central role in the evolution of education. They describe how the most profound impact of the Internet, which has yet to be fully realised, is its ability to support and expand the various aspects of social media. They develop on this notion stating that social media challenges the traditional “Cartesian” view of knowledge and learning which “assumes that knowledge is a kind of substance and that pedagogy concerns the best way to transfer this substance from teachers to students.”

Seely Brown and Adler (2008) suggest that learning via social media stands in sharp contrast from the Cartesian premise of “I think, therefore I am”, to one where learning says, “We participate, therefore we are.” Social media shifts the emphasis from the content of the subject to “the learning activities and human interactions around which that content is situated.” Learning this way changes the way people learn from an individual endeavour to one that is collaborative. Given the influence social media has on society and education, it is reasonable to ask what influence it will have on the learning process for students. Will it influence their attainment? More importantly, will it influence their attitude to the learning process or experience as a whole?
1.4 Research Methodology

The research approach chosen for this project will be a descriptive case study. A multi-method case approach will be implemented in order to yield a combination of qualitative and quantitative data. The data collection tools used by the author include pre-case statistical analyses, pre-tests, pre and post questionnaires, observations and semi-structured interviews.

1.5 Structure

Chapter 1 introduces the study and provides an insight into the context of the research. The author outlines the central project question and discusses his reasons for choosing the topic. The author includes relevant literature to provide further insight into the context of the study. The chapter concludes with an overview of the research methodology.

Chapter 2 reviews the literature available on the use of social learning networks as a teaching and learning tool. It cites research and commentary on the emerging culture of Web 2.0 technologies, where the social network tools provide new and innovative opportunities of education. Furthermore, it highlights why educators must rethink pedagogical models in light of the digital age of learners. In light of this, it outlines the challenges faced by teachers alike in the implementation of social learning networks in the classroom. The author will present findings and recommendations from the Department of Education and Science’s Inspectorate in addition to references from a selection of papers from the National Council for Curriculum and Assessment (NCCA) and the National Centre for Technology in Education (NCTE). Chapter 2 concludes with a details on learning theory and its implications of social learning networks as a learning tool.

Chapter 3 addresses the methodology to be implemented in this study. It details the research questions and describes the methods that will be used to gather the research data. It explains the nature of the setting and participants of the study and provides a brief overview of the Junior Certificate syllabus. The chapter concludes by chronologically mapping out and detailing the research paradigm for the case study.
Chapter 4 analyses the data and findings gathered throughout the course of the research study. The quantitative and qualitative data is presented visually using tables, graphs and charts. Statistical analyses are compared and presented for the study group and control group. The author identifies trends and themes emerging from the collected data.

Chapter 5 discusses the key findings that emerged from the data outlined in the previous chapter. The author outlines the key research questions and discusses the findings with reference to the literature discussed in Chapter 2. Additionally, the chapter will examine the findings in view of the projects’ three central questions.

Chapter 6 concludes the study by making links between the findings and discussions with the research outlined in the literature review. The author discusses limitations of the study, formulates conclusions and makes recommendations for further work in this area.
Chapter 2

Literature Review

2.1 Introduction

This chapter provides a literature review on the use of social learning networks as a teaching and learning tool. It cites research and commentary on the emerging digital landscape of Web 2.0 technologies, where social network tools provide new and exciting opportunities for education. Furthermore, it highlights why educators alike, must rethink the models they use for teaching and learning. It outlines the challenges faced by the education system in the implementation of social learning networks in the classroom. This has significant relevance against a backdrop of negative portrayal by the broadcast media. This chapter will also provide insight into how History is taught at post-primary level in Ireland and will reference the findings of the Department of Education and Science’s Inspectorate in addition to references to the National Council for Curriculum and Assessment’s (NCCA) reports. Chapter two concludes with a detailed study of learning theory and the use of social learning networks as a learning tool.

2.2 Looking Beyond Traditional Thinking – The 21st Century Model

2.2.1 The Digital Age – Challenging Traditional Pedagogical Practice
In a detailed study on how people learn, Bransford et al. explain that, “In the most general sense, the contemporary view of learning is that people construct new knowledge and understandings based on what they already know and believe.” Bransford et al. suggest that teachers must adapt their pedagogies; they must know their students well and build on existing knowledge and abilities. The CISCO White Paper (2008) questions the ability of traditional modes of classroom instruction to engage and inspire students when life outside the classroom has changed so dramatically. Schon (1983) suggests that in many cases, the reluctance of teachers to adapt their pedagogies to suit the present day learner is often due to a lack of confidence in their ability to apply new technologies. This is primarily dictated by continued professional development, albeit lack of it. “Professionals are called upon to perform tasks, for which they have not been educated, and the niche no longer fits education, or the education no longer fits the niche.” Furthermore, Schon highlights how the digital age has presented the teacher with an on-going dilemma where the ability to adapt is unprecedented. “The dilemma of the professional today lies in the fact that both ends of the gap he is expected to bridge with his profession are changing so rapidly: the body of knowledge that he must use and the expectations of the society that he must serve. Both these changes have their origin in the same common factor – technological change.” Leask (2001) adds that the demands of a content-heavy curriculum attributes to teachers’ reluctance to integrate technologies into educational practice. “Teachers concerned to use pupil time to maximum advantage are therefore likely to avoid ICT use.” Leask outlines the following features of institutions which affect benefits gained in ICT use (Appendix L):

1. Quality Management
2. Quality of other partners
3. Stance towards IT generally
4. Current and anticipated levels of financial and physical resources available and required
5. Quality of new technology available

A study of teens in the United States brought to light a remarkable trend – the classroom is the only place where learners disconnect. Moreover, since emergence Web 2.0, social network sites such as Facebook has grown by 270 percent in 2006. In fact, the emergence of social media networks, as described by Palfrey and Gasser (2008) has merged the “non-
digital” world with the “digital world”. In her book ‘Winter of our Disconnect’ (2010), Susan Maushart’s research reinforces Palfrey and Gasser’s observation as she explores the effects of digital media, or moreover, the effects of being disconnected from it, on her children. At its very deepest level, the book provides a wider view into the impact of new media on the lives of families, into the very heart of the meaning of home. Despite the relatively recent arrival of what Marshall McLuhan termed as the “Global Village”, Maushart highlights how new media is functioning as a “force-field separating my children from what my son, only half ironically called RL (Real Life).”

Berry (2011) states that the 21st century learner requires pedagogies to change. In order to be adequately prepared for third level and beyond, they must be equipped with a different set of skills and knowledge than was needed in the past. “In the emerging workplace, most students – not just an elite few – must be able to find, synthesize, and evaluate information from a wide variety of subjects and sources.”

Seely Brown and Adler (2008) echo Berry’s observation with rhetoric that mirrors Prensky’s theory of “Digital Natives”. The authors describe 20th century pedagogy as one in which the dominant approach to education focused on helping students “build stocks of knowledge and cognitive skills that could be deployed later in appropriate situations.” This is juxtaposed with that of the 21st century learner which demands a new approach to learning – “one characterized by a demand-pull rather than the traditional supply-push mode of building up knowledge in students’ heads.”

The “demand pull” approach proved effective in what was a relatively stable, slowly changing world in which careers typically lasted a lifetime. But the 21st century is quite the opposite. “The world is evolving at an increasing pace. When jobs change… we can no longer expect to send someone back to school to be retrained.”

Furthermore, the Alliance for Excellent Education report (2012) outlines that there is a culture shift in the way students of today learn. “To meet the needs of the diverse students’ population, the education system must provide a more personalised, rigorous, and collaborative learning environment that moves from teacher-directed, one-size-fits-all instructional strategies toward a learner-centred model.”
The National Council for Curriculum and Assessment in their discussion paper entitled “Curriculum Assessment and ICT in the Irish Context (2004) cited many arguments for promoting the use of ICT in education, with particular focus and attention given to the use of the Internet. The paper stated that, “In recent years, the pervasive influence of ICT has significantly increased our capacity, as a society, to generate, manipulate, store and transmit large quantities of information cheaply and to communicate with others instantaneously.”

Furthermore, the paper predicts that given the pace at which technologies continue to grow, “technological literacy will become a basic functional requirement for our work, social and personal lives.”

The National Centre for Technology in Education (NCTE) outlines that ICT has a potentially big role to play in supporting students’ learning especially for students with special needs. It outlines how ICT tools can provide a non-threatening environment in which the level and pace for learning can be geared to suit individual needs. Additionally, it explains how this technology can provide a means for students to accomplish tasks independently and therefore not have to rely continually upon others.

The implications of ICT and education on society are multi-faceted according to the OECD report “Learning to change ICT in Schools” (2001). It distinguishes between three rationales for the inclusion of ICT in education.

1. **Pedagogical Rationale**
   ICT can increase the “breadth and richness” of the learning experience and support the development of higher-order thinking skills.

2. **Social Rationale**
   “Digital literacy” is a “requirement and a right for all learners.” Therefore, ICT is an essential life skill in the same way that literacy and numeracy is.

3. **Economic Rationale**
   ICT is central to driving economy. There is a demand for personnel skilled in the use of ICT.
The Institute for Prospective Technological Studies\(^{xl}\) (2010) indicates that Learning 2.0, a concept that broadly summarises all opportunities arising from the use of social media for learning, gives rise to technological innovation in education by:

- Increasing the accessibility and availability of learning content;
- Providing new formats for knowledge dissemination, acquisition and management;
- Allowing for the production of dynamic learning resources and environments of high quality and interoperability;
- Embedding learning in more engaging and activating multimedia environments;
- Supporting individualised learning processes by allowing learner preferences to be accounted for; and
- Equipping learners and teachers with versatile tools for knowledge exchange and collaboration, which overcome the limitations of face-to-face instruction.

### 2.2.2 The Role of the Internet for the 21st Century Learner

Richardson (2006) remarks that developments made in information and communication technologies have triggered a noticeable trend that shows no sign of stopping; that is “the movement of curriculum to digital, online environment.”\(^{xli}\) Today’s schools find themselves increasingly faced with a difficult dilemma that “pits a student body that has grown up immersed in technology against a teaching faculty that is less facile with the tools of the trade.”\(^{xlii}\) The emergence of social media networks or Web 2.0 technologies as an integral part of mainstream social culture has provoked many in educational organisations to reflect on the very nature of how they facilitate for effective teaching and learning in the 21st century. Mason and Rennie (2008) outline that the popularity of social media networks or Web 2.0 technologies, particularly with young people, “has led many educators to think that this practice and enthusiasm could be turned to an educational use.”\(^{xliii}\) The phenomenal uptake of new technologies by young people has led many experts in the education field to ask the following question: Are learners changing and to what extent are they undergoing this process? Mason and Rennie (2008) focus much of their research on the effect the internet, notably, social networking, has on learners who have grown up with these as an integral part of their environment. Prensky (2001), renowned for his literature on the effects of digital media on young people today, states that “today’s students think and process information fundamentally differently from their predecessors. These differences go further and deeper...
than most educators suspect and realise.”

Owen (2004) presents a sociological viewpoint of how the evolution of technology has intrinsically left today’s generation of learners no choice but to evolve with it. “Because the nature of technology by society influences what the society is and becomes, individuals who do not become technologically literate will be left behind. Influences of a technology include the nature of the medium, the way the medium extends human senses, and the type of cognitive processing required by the medium.”

According to a Netday report (2006), the fastest growing age group for using the Internet are 2-6 year olds. The report outlines that 30% of students within this age group “have their own e-mail accounts, primarily e-mailing their friends, parents, and other family members.” A further 14% have an Instant Messenger (IM) screen name. What is more significant from the findings of this report is that 71% of these students use computers in their free time. “They play games (60%); visit favourite websites (40%); listen to music (32%); use software to draw pictures, make cards, or movies (32%); talk or e-mail friends or family (20%); and use a search engine to look for information (20%).” From an Irish perspective, O’Neill and Dinh (2012) state that “going online is an everyday occurrence for the vast majority of Irish children.” Young people spend on average one hour per day online. “Most go online from home (87%). Many also do so from school (66%), in friends’ homes (64%), in public libraries (14%) and in internet cafés (9%).” O’Neill and Dinh point out a significant trend in the multitude of devices that young people are using to access the internet. “Internet use is mostly via a shared PC (64%) but young people also go online using other devices such as a shared laptop (51%), mobile phone (46%), a games console (44%), their own laptop (28%) or smartphone (23%).” According to Prensky (2004), “this online life is an entire strategy for how to survive and thrive in the twenty-first century where cyberspace is a part of everyday life.” And, in addition, “the possibilities for what Digital Natives can do online are growing exponentially.” Richardson (2006) echoes Prensky’s sentiments, and delves even further, where he explores the neurological effects of the online culture with today’s learners. Richardson suggests that education systems must embrace the world of the internet in order to meet the needs of the 21st Century learner. “Today’s students may not be well suited to the more linear progression of learning that most educational systems employ.” Richardson cites research by William D. Winn, Director of the Learning Centre at the University of Washington, who believes that the years of computer use creates children that “think
differently to us. They develop hypertext minds. They leap around. It’s as though their
cognitive structures were parallel, not sequential.siii

2.2.3 Connectivism – The 21st Century Model for Learning

Siemens (2004) claims that Web 2.0 technologies have changed the way people today learn
and that the three pillars of learning theory; that is behaviourism, cognitivism and
constructivism are no longer relevant in the society that we live in.

The focus of behaviourism is on the conditioning of observable human behaviour.
Cognitivism refers to mental activity such as thinking, remembering, learning and using
language. Constructivists believe that all humans have the ability to construct knowledge in
their own minds through a process of discovery and problem-solving. The extent to which
this process can take place naturally, without structure and teaching is the defining factor
amongst those who advocate this learning theory (Forrester & Jantzie, 2011).

According to Siemens (2004), these learning theories are limited given that they only look at
learning as a process which happens inside of the person. These theories fail to address the
learning that takes place outside of people. Siemens outlines that “Learning theories are
concerned with the actual process of learning, not with the value of what is being learned. In
a networked world, the very manner of information that we acquire is being learned. The
need to evaluate the worthiness of learning something is a meta-skill that is applied before
learning itself begins.”siv Siemens further adds that “In today’s environment, action is often
needed without personal learning – that is, we need to act by drawing information outside of
our primary knowledge. The ability to synthesise and recognise connections and patterns is a
valuable skill.siv The inclusion of technology and connection making as learning activities
shifts learning theories into the 21st Century. He has coined a theory he calls connectivism
which is driven by “the understanding that decisions are based on rapidly altering
foundations. New information is continually acquired. The ability to draw distinctions
between important and unimportant information is vital. The ability to recognise when new
information alters the landscape based on decisions made yesterday is also critical.sivi
According to Mason and Rennie (2008), connectivism as a theory presents a model of learning that reflects a society in which learning is no longer personal, individualistic activity. It acknowledges the fact that the ways people learn and function are altered when new tools are used. They conclude by stating that connectivism is the “foundation for the learning skills and tasks needed for learners to flourish in a digital era.”

2.3 Empowering Learners

“Technology is becoming persuasive in all areas of life, and the greatest impact is arguably in education.” (O’Neill & Perez, 2006) O’Neill and Perez (2006) highlight two ways of measuring the extent to which technology has fundamentally changed education. Firstly, technology is so multi-faceted by the myriad of ways in which it can be used to enhance the learning experience. Secondly, and more importantly, is its impact “on future generations and their ability to function in an increasingly technology-driven society.” Traditional methods of education are changing as a result of the integration of technology into the classroom. The use of web-based learning is encouraging learners to be active “through exploration, and creation, challenges, or collaborations.” Loveless and Ellis (2001) reinforce this view stating that the use of web-based technologies facilitates for a higher order of learning.

“Constructing knowledge from information requires far more than the ability to use a variety of ICT techniques or skills with the latest range of software applications: it relates more to an ability to question, access, interpret, amend, analyse, construct and communicate meaning from information.” Watkins et al. (2001) outlines the following models of learning:

1. Reception – concerned with quantity, facts and skills; assumes transmission of knowledge from an external source (e.g. teacher). Emotional and social aspects are not attended to.
   \[\text{Learning} = \text{being taught}\]

2. Construction – concerned with the learner’s construction of meaning through discussion, discovery, open-ended learning, and making decisions.
   \[\text{Learning} = \text{individual sense-making}\]

3. Co-construction – concerned with the learner’s construction of meaning through interaction and collaboration with others, especially through dialogue
   \[\text{Learning} = \text{building knowledge with others}\]
In order for education to evolve and integrate technologies, Watkins et al. insist that educators need to rethink how they teach. With this, curriculums need to move away from ones where teachers are under pressure. Consequently they become more controlling and promote the first model. According to Watkins et al., this model is dominant in most countries. Leask (2001) argues that this model for teaching is outdated. It fails to reach out to all learners’ intelligences as outlined by Gardner (1993) who articulates that there “exists a multitude of intelligences, quite independent of each other; that each intelligence has its own strengths and constraints.” New technologies provide the platform for the second and more importantly the third model which go a long way towards catering for all types of learners. The construction model enables learners to connect with previous knowledge, “extending understanding and helping them to learn to see things in new ways.” The co-construction model “operates in a way where learners create knowledge together, and they may create a collaborative product from this.”

Leask (2001) challenges the idea “that teachers are fountains of knowledge and that children are empty vessels waiting to be filled with the knowledge and wisdom of their teacher.” Furthermore, that “instead of restricting access, teachers need to encourage skills in which learners seek new information and consider alternative viewpoints, question their sources, and make judgements about the validity and reliability of evidence and information presented to them from a range of sources.” Educators are facilitating for the needs of all learners. In view of Gardner’s Multiple Intelligences, learners tend to be visual, auditory or kinaesthetic. Visual learners “perceive visual or spatial information” and make meaning of it. Kinaesthetic learners “need to do” in order to learn. They “need to try out, experience, and imitate in order to learn more deeply. Auditory learners “think in words” in order to create meaning. By integrating technologies in education, teachers are ensuring that learning is an effective and meaningful experience for all.

The OECD published a report in 2001 entitled ‘E-Learning: The Partnership Challenge’. The report examines aspects of the impacts of new information and communication technologies on education and training in OECD countries, what is broadly referred to as e-learning. The
The report was compiled against a backdrop of increased growth and rise in demand for education and training to respond to the requirements of what it termed as “the knowledge society”. It outlines that ICT “has a very broad and pervasive impact on the entire education process – on learning environments, on the content of learning, on empowerment of the learner and on the forms of communication used.”

The report emphasises the growing potential for ICT, to empower the learner by offering choice and potentially more engaging and effective means of learning.

Ito’s et al. (2009) study of children and new media highlights the digital divide that is present between young people today and older generations. Young people adopt lifestyles that are interdependent with a perpetually developing media ecosystem and with seductive media cultures of creativity, communication and collaboration. Livingstone (2009) identifies how the youth’s “always on” and “constantly connected” way of life offers new opportunities for learning. The reality of the 21st Century learner is that they are no longer passive consumers of knowledge but also producers, indicating a more active approach to learning (McLoughlin and Lee, 2007).

Furthermore, the Pew Internet and American Life Project outlines that “content creation by teenagers continues to grow with 64% of online teenagers aged 12-17 engaging in at least one type of content creation, up from 57% in 2004.” This trend has increased significantly in more recent times, with 95% reported to be online in 2011 (http://www.pewinternet.org). Therefore, educators must embrace the internet and the technologies associated with it so as to empower learners, which stands in stark contrast with many traditional pedagogies which deny students the autonomy necessary to shape their own learning experience.

According to McLoughlin and Lee (2007), the arrival of the “two-way Web” offers unique opportunities for us to “expand how we teach, communicate, learn and create knowledge.” The knowledge-based society demands new educational approaches and pedagogies. “In a digital world, with high connectivity and ubiquitous, demand driven learning, there is a need to expand our vision of pedagogy so that learners are active participants or co-producers rather than passive consumers of content.” Therefore, learning
becomes a participatory, social process that supports personal life goals and needs. Learning
is not restricted to the classroom; it is an activity that happens throughout life, at work, play
and home. Beyond the walls of the classroom, there is a “plethora of online groups of
individuals that are self-directed, vital, self-managed and active in the generation of new
ideas.”

Web 2.0-based social software tools are opening new doors for more effective
learning for the modern day learner. Pachler et al. (2010) cite the arrival of media devices
notably mobile technology as a key player in the large changes that have taken place for
children in society. “Children continue to gain ever increasing access to functionally
convergent digital media and mobile devices; their bedrooms are increasingly becoming
multi-media centres where they engage in meaning-making that is personally motivating for
them.”

OFCOM (2008b, p.5) has highlighted the fact that in the UK, 84% of people aged
8 or more use, or have access to, mobile technology. Pachler et al. argue that “mobile
learning is an emerging, and rapidly expanding field of educational research and practice
across school…It is also gaining increasing importance in what is frequently referred to as
‘informal’ learning and is starting to attract the interest and imagination of practitioners in all
phases of education.”

2.4 Defining Social Media and Web 2.0 Technologies

The term “social media” can be interpreted in many ways, but can be broadly defined as a
“second generation, or more personalised, communicative form of the World Wide Web that
emphasises active participation, connectivity, collaboration and sharing of knowledge and
ideas among users.” In order to provide a clear definition of what social media is,
commentators tend to explain it within the remit of Web 2.0 technologies. Web 2.0 is also
referred to as the “Read-Write Web” (Richardson, 2006) in which the web is seen as a “two-
way medium, where people are both readers and writers.” In other words, Web 2.0 is an
umbrella term used to define “internet services that foster collaboration and information
sharing.” The term is often applied to websites and internet services that facilitate social
media and peer to peer interaction tools. Davis et al. (2012) state that “the term social media
technology (SMT) refers to web-based and mobile applications that allow individuals and
organisations to create, engage and share new user-generated or existing content, in digital
environments through multi-way communication.” Since the introduction of social media,
the functionality of internet has shifted beyond the static pages of earlier websites to ones where users can interact and collaborate via social media tools.

Alexander (2006) states that Web 2.0 software has “powerful implications for education” and is fundamental to addressing the needs of today’s diverse students. Web 2.0 applications include:

- Weblogs (blogs)
- Wikis
- Really Simple Syndication (RSS)
- Podcasting
- Social Network Sites
- Tag-based Folksonomies or Social Tagging
- Peer-to-peer Media Sharing (P2P)

Social media refers to any content that is “created, shared, and commented on by a broader community of users.” Gorringe (2009) discusses the significance of social media and its ability to change how people receive and communicate information – that is, it transforms “how people discover and share news, information and content.” It changes the way people interact and so “it changes monologues (one to many) to dialogues (many to many)” allowing people who could never have reached each other before “to connect in the online world.” Services that support the production and sharing of social media include weblogs, wikis, video sites like YouTube, and most social networks.

2.5 The Birth of Social “Learning-Specific” Networks

2.5.1 Background

In the last decade, social media has transformed peoples’ lives, particularly in how we think about our relationships, our connections with and our affinity to others and the influence and persuasive power of online communities on our perception of the “real world”. (Davis et al., 2012). The inception of the internet has changed the way we communicate. However, as
Davis et al point out, it was not until the arrival of social media interfaces like Facebook, Twitter and MySpace, that we have really seen the massive harnessing potential of online connectivity on our lives. Social media “links people together in ways that resemble traditional feelings of connection, belonging and loosely defined memberships, exchange of feelings and ideas, and the reporting of experiences and actions.” Indeed, the fact that users can create, maintain and access a wealth of online communities for free, offers new opportunities to do all sorts of things they once didn’t do. Shirky (2010) propounds an interesting analogy on this stating that “in the world of media, we are like children, sitting quietly at the edge of a circle and consuming whatever grown-ups in the centre of the circle produced. That has given way to a world in which most forms of communication, public and private, are available to everyone in some form.” According to O’Keefe et al. (2011), the use of social media websites “is among the most common activity of today’s teenagers and young adolescents.” The Journal of Computer-Mediated Communication provides the following definition for social network websites:

…as web-based services that allows individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of their connections and those made by others in the system.

The European Network and Information Security Agency, outlines that the defining characteristics of a social network site are:

- Tools for posting personal data into a persons’ ‘profile’ and user-created content linked to a person’s interests and personal life
- Tools for personalised, socially focused interactions, based around the profile (e.g. recommendations, discussion, blogging, organisation of offline social events, reports of events)
- Tools for defining social relationships which determine who has access to data available on SNSs and who can communicate with whom and how.
Shih (2009) states that the lightning pace of technology has made the world a very different place than a few years ago. She explains that today's students “don’t use e-mail except with ‘grown-ups’ like professors and potential employers – they Tweet about what they had for breakfast and send Facebook messages.” In summary, a social network website is an online platform that focuses on building social network among people who have shared interests, activities, backgrounds or real-life connections.

Social network websites generally offer the following common features:

- No prerequisite - any internet user with an e-mail address can register
- Free of charge – no subscription required
- Group – supports user-defined groups which can be both private or public
- Privacy – control of privacy
- Media albums – upload photos and videos
- Notifications – receive notifications on updates for all items, users and groups
- Discussions – supports discussions with relation to media, posts etc.
- E-mail – supports e-mail between all users

Boyd (2007) provides a history of social network websites. In view of the common features listed above, Friendster, established in 2002, was the first to encompass many of these. While Friendster was originally set up as a platform for people to meet potential partners, it very quickly evolved and by 2003, people were using it to track down old school friends and set up profiles for entertainment purposes. Gradually, Friendster would attract younger participants who adopted very different strategies than their older counterparts. “While many adults find value in socialising with strangers, teenagers are more focused on socialising with people they knew personally and celebrities that they adore.”

The arrival of MySpace in 2003 set the foundations of the social media culture for young people today. MySpace utilised the popularity of music culture to attract young teenagers to their network. However, just like its predecessor, MySpace would evolve to attract “less musically engaged” participants because of the “available social voyeurism and the
opportunity to craft a personal representation in an increasingly popular online community.\(^{xc1}\) By 2005, MySpace was one of the most popular social network sites for teenagers in the United States but in Europe and beyond, teenagers were on a variety of other social network sites. In September 2005, Facebook was founded to serve third level students initially and then would open its doors to teenagers. Although many other social network sites would be set up throughout the world, for example, Bebo, Piczo, Tagworld and Mixi, Facebook has become one of the most prominent interfaces in social network providers with approximately 750,000,000\(^{xcii}\) users as of March 2013.

2.5.2 Social Network Sites and the 21st Century Learner

According to a Norton Family Report (2010), globally, children are spending more time online: on average more than 1.6 hours per day. This adds up to 11.4 hours per week, an increase of 10 per cent since 2009.\(^{xciii}\) Livingstone et al. (2011) outlines that 38 per cent of 9-12 year olds and 77 per cent of 13-16 year olds in Europe have a social network profile. Facebook is used by one third of 9-16 year olds.

<table>
<thead>
<tr>
<th>Country</th>
<th>Social Network Sites (SNS)</th>
<th>% 9-12 years</th>
<th>% 13-16 Years</th>
<th>% 9-16 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ireland</td>
<td>Facebook</td>
<td>21</td>
<td>47</td>
<td>34</td>
</tr>
<tr>
<td>UK</td>
<td>Facebook</td>
<td>34</td>
<td>79</td>
<td>58</td>
</tr>
<tr>
<td>Europe</td>
<td>SNS (incl. Facebook)</td>
<td>38</td>
<td>77</td>
<td>57</td>
</tr>
</tbody>
</table>

[Fig. 2.1 Users of Social Network Sites (%) Norton Family Report 2010]

These statistics indicate a significant trend in the popularity of young peoples’ uptake of social network profiles and it raises the following question – Why are social network sites becoming an integral part of youth culture today?
Boyd (2007) attempts to address this trend – that is, how young people engage through social network sites today provides long lasting insights into identity formation, status negotiation and peer-to-peer sociality. At a simple level, young people engage in social media to maintain connections with friends and for the entertainment value of it. On the other hand however, Boyd explores this even further by looking at youth identity and culture in the 21st century. Boyd explains that in a digital world, social network sites are a necessity for young peoples’ social development. They are “arenas for the formation and enactment of social identities.”

By interacting with “unfamiliar others”, young people are socialised into society. Public online domains are where social norms are set, where common ground is formed. Teenagers’ social identity is partially defined by themselves, but increasingly defined by these “unfamiliar others”. Boyd reiterates what was discussed earlier in this chapter, reinforcing the argument that this technology and networked publics are not going away. She goes on to echo Ito’s et al. (2009) “digital divide” theory, whereby society needs to educate teens to navigate these unfamiliar social structures and learn from what they are experiencing.

Given the increased amount of time young people are spending online today, particularly on social network sites, it would be naive to ignore the potential this technology has for the 21st century learner. The “always on” and “constantly connected” culture of young people today has significant implications for learning. Shih (2009) argues that social networks are changing the way young people use the internet. “Already, more and more people are using social networking sites as their main entry point to the web.”

Levin and Arafah (2002) have identified a widening gap between “internet-savvy” students and their schools. Their research has indicated that “one of the most common activities youth report undertaking online is schoolwork.” However, they highlight how little is known about how students use the internet for schoolwork or about their attitudes to online learning. This is the fundamental problem according to Levin and Arafah, who attribute this to the fact that “many schools and teachers have not yet recognised – much less responded to – the new ways students communicate and access information over the internet.” Students have reported that there is a substantial disconnect between how they use the internet for school and how they use the internet during the school day and under teacher direction. For the most part, Levin and Arafah’s findings have indicated that students’
education use of the internet occurs “outside of the school day, outside of the school building and outside the direction of their teachers.” In summary, the findings of Levin and Arafeh’s report outlined very clearly how students use the internet in relation to their education (Appendix K).

In an attempt to provide just cause for the reluctance of schools to integrate the internet into students’ learning, Levin and Arafeh cite many reasons for this. For one, schools face significant barriers for integrating it into their operations. Cost, technical knowhow, training and use together with legalities and policy-making, have all made “adoption of the internet challenging for educational institutions, teachers and students.” Furthermore, internet-savvy students reported that their schools, teachers and peers are at times, frustratingly illiterate, naïve, and even afraid of the online world. One factor that can further attribute to teachers’ fear of the online world is professional inertia, which is discussed later in this chapter. However, in view of their findings, Levin and Arafeh insist that the growing use of the internet outside of school presents educators with opportunities to “expand their reach and to engage students in new and thoughtful ways.” To add, the authors warn educators of how students are becoming increasingly dissatisfied with conventional approaches to teaching and learning. They conclude their report with a very clever and effective citation from the writings of Latin writer, Seneca, whose words ring as true today as they did 2,000 years ago: “The fates guide those who go willingly; those who do not, they drag.”

2.5.3 Social Learning Theory and Social Learning Networks

Social learning theory is derived from constructing meaning and knowledge from social influences. Albert Bandura, a social cognitive theorist, carried out an experiment to prove how social influences including the media have adverse effects on people, especially children. Consider the following statement:

“Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do. Fortunately, most human
According to Bandura’s social learning theory, learning centres on the reinforcement process. Bigge (1982) explains that through reinforcement, learning “is the process of representations of behaviour construed through informative feedback resulting from one’s direct behaviour, one’s observation of examples of behaviour in other people, and the consequences of both.” Bandura recognises three kinds of levels of reinforcement:

1. Direct, External Reinforcement – based on the direct experiences of the learner – learners will regulate their behaviour on the basis of consequences
2. Vicarious Reinforcement – where the learner imitates the behaviour of a peer that results with a reward of some kind – positive reinforcement
3. Self-administered Reinforcement – based on the emotions experienced by the learner – self-satisfaction

All three are characterised by reciprocal interaction. Although social theory is aimed at the functions of people in society, according to Bigge (1982), it has implications for education also. Like all human relationships in groups, teacher-student relationships are reciprocal. Schlechty and Atwood (1977) develop this thought further, outlining that there is a prevalent tendency in society to assume that teachers act and students respond. It would be credulous to assume that students are passive components in the learning process. Schechty and Atwood note that as part of the classroom social process, the teacher not only influences but is also influenced in return. “The teacher develops conscious and sometimes subconscious strategies to induce students to behave in ways believed to lead to learning. Similarly, students develop strategies – sometimes consciously, more often perhaps subconsciously and unarticulated – to induce teachers to behave in ways students perceive to be in their own interest.”

Palinscar and Brown (1984) have researched extensively in the area of reciprocal teaching and in many ways their insights can be applied to teaching using the internet. She outlines that reciprocal teaching is “a dialogue between teachers and students for the purpose of jointly constructing the meaning of text.” The internet offers new and exciting opportunities
for actively engaging students through this reciprocal process. Notably, the use of social learning networks enables users to engage in sharing, interaction and collaboration as a means of constructing meaning from what they have learned. Sherman and Kurshan (2005) state that “constructing meaning comes from interacting with others to explain, defend, discuss, assess our ideas and challenge, question and comprehend the ideas of others.”

Through social interaction, students can express and develop their understanding of what they are learning. Sherman and Kurshan go further to argue that online communities are instrumental to engaging students in a learning process that elicits their interest. “Interested students challenge their existing knowledge and more likely to develop conceptual frameworks that integrate prior knowledge and new information into understanding.” Moreover, by focusing on students’ interests, “you increase the probabilities that students will be intrigued and explore their understandings.” Additionally, with online communities, there is a potential to break down the social barriers between the learner and the teacher, a trend often associated with the traditional culture of teaching. This process can bridge the gap between real life at school and real life outside of school, the result of which should be “a much higher potential for transfer in addition to deeper and more meaningful learning.”

2.5.4 Social Learning Networks – A Natural Progression

“The most profound impact of the internet, an impact that has yet to be fully realised, is its ability to support and expand the various aspects of social learning.” (Seely Brown & Adler, 2008) The emergence of social learning networks has in truth being a very natural progression. Sheridan (2012) asserts that people are increasingly turning away from social giants like Facebook and Twitter in favour of smaller niche social networks, and often for good reason. “People aren’t likely to flee Facebook outright but they will increasingly augment their online social experience by using other networks whose size, privacy, and more customised parameters are more suited to specific tasks and goals.” A Cisco White Paper (2008) questions whether or not traditional modes of classroom instruction can inspire and engage learners when life outside the classroom has changed so dramatically. It reports that “for many learners, class is the only time in their day when they completely disconnect.” Figure 2.1 illustrates the media consumption of a Dutch student. Not only does it provide a clear picture of the role media has to play in young peoples’ lives, but more
importantly, it highlights the significant amount of internet use, particularly the fact that connectivity is at its lowest during school hours.

![Media Consumption Graph]

and social network sites, it seems only logical that social networks have evolved and emerged as a key learning tool within the education sector. The Alliance for Excellent Education published a report in 2012 which details a culture shift in the way students learn through the use of digital media. The report outlines how it is a necessity for students today to have acquired a very different set of skills and knowledge than was needed in the past by the time they leave second and third level education. “In an emerging workplace, most students – not just an elite few – must be able to find, synthesise, and evaluate information from a wide variety of sources and subjects.” To facilitate this, there requires a shift from a teacher-centric culture to one that supports learner-centred instruction with an intense focus on the student. The report adds to state that use of virtual learning environments such as social learning networks “offers flexible learning opportunities that are relevant to students and engage them deeply in directing and taking responsibility for their individual learning.” In order to meet the demands of the diverse student population, the education system must, according to recommendations made in the report, provide a more personalised, rigorous and collaborative learning environment, that moves from “teacher-directed, one-size-fits-all instructional strategies toward a learner centred model.”
Social learning networks have announced themselves amidst this culture shift in the way the 21st century student learns. The statistics indicate that children today are communicating with their peers online, especially through social network sites. Given that these digital learners have a high interest in social media already; it makes sense for educators to integrate these technologies into the learning experiences.

2.6 Social Learning and Social Learning Networks

2.6.1 Social Learning

Perhaps a simple way of explaining the concept of social learning is via Seely Brown and Adler’s (2008) social construction concept. Their definition of social learning is based on the premise that our understanding of content is socially constructed through interactions with others. Interestingly, what is important here is that the focus is more so on how students are learning rather than what they are learning. Brown and Adler cite the work of Richard J. Light (2001) of the Harvard Graduate School of Education who discovered that one of the strongest determinants of students’ success in higher education was their ability to form and participate in small study groups. “Students who studied in groups…were more engaged in their studies, were better prepared for class, and learned significantly more than students who worked on their own.”

Social learning shifts the focus from the content of what is being taught to learning activities and human interaction around which the content is situated. Brown and Adler consider the traditional Cartesian view of knowledge and learning – that is, knowledge is a kind of substance that can be passed from teacher to student through pedagogical strategies. The Cartesian view of knowledge and learning is based on the premise of “I think, therefore I am.” In contrast, the social view of learning says, “We participate, therefore we are.”

2.6.2 Social Learning Networks

Social learning networks encompass many of the tools associated with social network, with emphasis on the learning process while at the same time maintaining the social dimension which is key motivation tool for today’s learners. In summary, a social learning network helps harness the power of social media to customise the classroom for each and every
learner both within the school environment and outside it. In brief, social learning networks provide the following:

- A secure place to connect and collaborate, share content and educational applications
- Access homework, grades, class discussions and notifications\textsuperscript{cxvi}

### 2.7 Social Learning Networks as a Pedagogical Tool – Perspectives

Studies conducted by the Institute for Prospective Technological Studies (IPTS) suggest the high take up of social media applications. IPTS research demonstrates that social media can contribute to enhancing learning and teaching opportunities in Europe. Their findings indicated that social media gives rise to technological innovation in education by:

- Increasing the accessibility and availability of learning content;
- Providing new formats for knowledge;
- Allowing for the production of dynamic learning resources and environments;
- Embedding learning on more engaging and activating multimedia environments;
- Supporting individualised learning processes by allowing learner preferences to be accounted for; and
- Equipping learners and teachers with versatile tools for knowledge exchange and collaboration, which overcome the limitations of face-to-face instruction.


The report adds that using social media as a learning tool promotes innovation in pedagogical thinking by encouraging teaching and learning processes that are based on personalisation and collaboration. Consequently, “interaction patterns between and among students are changed, re-defining the roles of teachers and learners.”\textsuperscript{cxvii} Teachers need to be more adaptable and more open to alternative approaches to teaching. This notion is echoed by Leask (2001) who argues that “the idea that teachers are fountains of knowledge and that children are empty vessels to be filled with the knowledge and wisdom of their teacher is untenable in the information age.”\textsuperscript{cxviii}
Dunn (2011) provides a contrasting perspective on the use of social media and how it can have a detrimental effect on the learning process.

- Many students rely on the accessibility of information on social media specifically and the web in general to provide answers. That means a reduced focus on learning and retaining information.
- Students, who attempt to multi-task, checking social media sites while studying, show reduced academic performance. Their ability to concentrate on the task at hand is significantly reduced by the distractions that are brought about social media sites.
- The more time students spend on social sites, the less time they spend socialising in person. Social networking sites are not an adequate replacement for face-to-face communication. Students who spend a great deal of time on social networking are less able to effectively communicate in person.
- The popularity of social media, and the speed at which information is published, has created a lax attitude towards proper spelling and grammar. This reduces a student’s ability to effectively write without relying on a computer’s spell check feature.
- The degree to which private information is available online and the anonymity the internet seems to provide has made students forget the need to filter the information they post.


Another trend emerging from social media is students’ tendency to replace appropriate written word with phonetic abbreviation in their writing. According to Vosloo (2009), in recent years “teachers and parents have blamed texting for two ills: the corruption of language and the degradation in spelling in youth.” However, Vosloo takes an opposing stance to this stating that “extensive reading and writing that happens – in the form of texting – holds potential for literacy development.”

2.8 Social Learning Networks
2.8.1 Edmodo

In recent years, the impact of social media has had a profound effect on teaching and learning. Edmodo blogger Andy McKiel states that “the proliferation of social networking tools has led many of our teachers and students to explore the use of these tools and begin to realise the benefits they offer.” McKiel highlights the challenges faced by schools in the use of social media as an education tool. Unfortunately, the use of social media is often hindered by content filtering which prevents the use of social networking tools in schools. He speaks of a real desire among students to have access to these tools. However, in most cases, schools are missing out on some great opportunities to teach students how “to utilise social media ethically and responsibly by preventing their use within our schools.”

While it is difficult to ignore the negative headlines in recent times concerning the effects of social media on society, Social learning network Edmodo, offers a real solution to providing students with all the tools that they associate with social networks such as Facebook, MySpace and Twitter, while at the same time, ensuring that the focus is on social learning rather than just the social. Edmodo is a social learning network for students, teachers and parents. Its interface is similar to Facebook and therefore makes it easy for users to navigate through the site to check grades, assignments and write posts to fellow students, teachers and parents. Students can submit their assignments and view their grades in addition to teachers’ comments about their assignments. The service is instant and paperless. Furthermore, teachers can set up groups for individual classes or small focus groups, making communication easier and more efficient. The fact that it is a secure environment encourages teachers, students and parents to freely share ideas and information. Edmodo “enables teachers to create closed networks with their students in a Facebook-like platform that virtually reproduces the classroom environment in many ways.

2.8.2 A Comparative Study: A Look at other Social Learning Networks

At present there is an abundance of social learning networks available on the internet, and while similar, have their own distinctive qualities.
Einztein – The Social Learning Network for Smarter Education

Einztein was founded with the role to curate resources through a social learning network that allows open and closed learning communities to connect and coexist. Einztein has many similarities to Edmodo and “brings the power of social networking to higher education and lifelong learners by enabling anyone to create an online community for resource sharing, collaboration and discussion.” All these Web 2.0 tools are available to users for free.

SchoolRack

As with Edmodo and Einztein, Schoolrack is a free Web 2.0 application and once again offers a range of education tools. In addition to offering open and closed communities, resource sharing, collaboration between teachers, students and parents and discussion boards, SchoolRack offers users with the option to build and customise websites to feature their own content.

Summary

<table>
<thead>
<tr>
<th>Features</th>
<th>Edmodo</th>
<th>Einztein</th>
<th>SchoolRack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Share information, documents and files</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
2.9 Implementation of Social Learning Networks – Barriers to Adoption

### 2.9.1 Teacher Training and Support

Prensky (2001) defines teachers born before 1980 as “Digital Immigrants”; those of whom speak an out-dated language (that of the pre-digital age). Prensky states that teachers must learn to communicate in the language and style of their students. However, there is an echo of reluctance within the teaching cohort in Irish schools for embracing the new technologies and in many cases, for good reason. Teachers cite lack of time, insufficient knowledge of the pedagogical uses of technology and a lack of existing information software. Furthermore, professional inertia is an on-going issue in education. Taylor (2013) defines inertia as “The tendency of people, having once established a life trajectory, to continue on that course unless acted on by a greater course.” Taylor argues that the biggest problem with overcoming inertia is change and with this, there is no certainty. The British Educational and Communications Technology Agency (BECTA, 2003) cites that there is a necessity for teachers to receive on-going training in the use of these technologies to enhance learning. Collaboration between teachers and their peers is also a factor in successful integration of new media in teaching. Such practices can only encourage teachers to embrace change in education.

### 2.9.2 A Limited “Assessment of Learning” Curriculum

Educators are faced with an Irish education system that is curriculum driven; a curriculum that sways in favour of assessment of learning rather than assessment for learning. Consequently, there is little scope for exploration and creativity. For these reasons, it would be easy to understand why one might opt for the traditional “behaviourist” approach to learning. However, in an era where educators are experiencing at first hand, the golden age of

<table>
<thead>
<tr>
<th>Feature</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report grades</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private/Group messaging</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Customised website to feature content</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Sync with Google Drive</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
technology, attention must be given to enhancing the overall learning experience through the use of innovative technologies. Through consultation, strategic planning and collaboration, educators can strive to achieve this, thus, offering students of all abilities a learning environment where they can realise their potential.

In 2006, the Department of Education and Science published their report “Looking at History: Teaching and Learning History in Post-Primary Schools.” It reported a slow but certain growth in both the awareness and the use of ICT by teachers. However, in many schools, access for history classes to ICT facilities has been limited because of the individual school’s computer room (or rooms) being required for other ICT-assisted classes. In their analysis of teaching and learning, inspectors identified a common trend. Student-centred approaches to teaching and learning were found to be quite limited. The perceived length of the Junior Certificate syllabus and insufficient class contact time has been cited as serious obstacles to the development of such strategies.

2.9.3 “Blurring Distinctions between Work and Play”

McLoughlin and Lee (2009) suggest that some students struggle with social media from an educational context. For the digital generation, who regard social media as a personal recreational tool, the blurring distinction between work and play poses significant challenges. McLoughlin and Lee have observed that in some cases that “secondary students see the internet as their territory and that they feel uncomfortable when this territory is encroached upon by their teachers.”

2.9.4 Conclusion

The research outlines the emergence of Web 2.0 technologies and examines how social network tools are providing new and exciting opportunities for education. Such is the pace that Web 2.0 technologies have developed to become an integral part of mainstream culture that educators are forced to rethink pedagogical practice (Bransford, 1999). Presently, the challenge for teachers is in the integration of these technologies to their teaching so that learning is relevant and meaningful for the “digital natives” (Prensky, 2001). The dilemma facing teachers lies in bridging the digital divide between their profession and the learners.
that stand before them. Experts in the education field argue that today’s learners are changing due to the phenomenal uptake of these technologies (Schon, 1983). Given the amount of time young people are spending online today, particularly on social networking sites, it would be naïve to ignore how this might be affecting how people learn. Young people are using social networking sites to engage in sharing, interaction and collaboration as a means of constructing meaning (Sherman & Kurshan, 2005). The emergence of social learning networks has been a natural progression in that it seems only logical that the 21st century learner is provided with a learning environment that is more personalised, rigorous and collaborative. Dunn (2011) provides a contrasting perspective on the use of social learning networks, arguing that may have a detrimental effect of learning citing the distractive nature of these sites as major contributor to this. Nevertheless, these technologies are not going away and if anything, will continue to develop and improve. Young people are using social networking sites to engage in sharing, interaction and collaboration as a means of constructing meaning. The emergence of social learning networks has been a natural progression in that it seems only logical that the 21st century learner is provided with a learning environment that is more personalised, rigorous and collaborative.

Chapter 3

Research Methodology

3.1 Introduction

The emergence of Web 2.0 technologies has created new opportunities for education and has significant implications on learning for the 21st century student. Learners of today differ greatly from the learners of yesterday. They have grown up in a world where the use of digital media has become second nature to them. The increasing popularity of social media has prompted experts to put this practice into educational use. (Mason & Rennie, 2008) Web-based technologies are playing a pivotal role in redefining the traditional meaning of the “classroom”. The impact of social media is being felt in many facets of society, and education is one facet where it is being felt most. This study examines the rationale behind researching the implications of social learning networks on the teaching of history at post-primary level. This chapter defines the criteria involved in the study and describes the setting, the participants and considers the appropriate methods of data collection for this research.
3.2 Research Questions

The research aims to examine the implications of social learning media on teaching and learning of history for students at Junior Certificate level. It focuses on the effectiveness of Edmodo – a social learning network, on teaching and learning in a rural secondary school in Ireland. The following questions will be addressed:

1. Why should teachers rethink their pedagogical practice in light of the emergence of Web 2.0 technologies?
2. What are the implications of social learning networks on teaching and learning of History at Junior Certificate level in a rural secondary school?

3.3 Education Research

Cochran-Smith and Lytle (1993) define teacher research as a “systematic, intentional inquiry by teachers.” They base this definition in part on the work of Lawrence Stenhouse (1985) who defines research in general as a “systematic, self-critical enquiry”, and in part on an ongoing survey of the literature of teacher writing.

Verma and Mallick (1999) outline the challenges faced by teachers undertaking education research. They describe the field of education as a complex one in which researchers have to deal with many variables simultaneously and that some of these cannot be controlled or quantified. Furthermore, they highlight how educational research can be complicated with factors such as the interaction between the investigators and the human subjects of study which can influence the way conclusions are drawn. There is a risk of subjectivity rather than objectivity in that the researchers may find it difficult to “disassociate themselves from the phenomena under study.”
Research has been classified in various ways. Verma and Mallick (1999) outline the following categories:

- **Pure or basic research** – discovery of facts which are fundamental to extending the boundaries of knowledge in a particular area or discipline.
- **Applied or field research** – applying new knowledge as solutions to day-to-day problems to establish generalisations about teaching and learning situations.
- **Action research** – focuses on a problem in a particular setting whilst conducting research.
- **Evaluation research** – refers to systematic procedures which are adopted over time to collect and process data concerning the effectiveness of a particular programme or set of events.

The term “teacher research” is an umbrella term used to describe the different methods of research used by teachers to gather information (Verma & Mallick, 1999).

### 3.4 Research Paradigm - Considerations

The design of a research study begins with the selected topic and a paradigm. A paradigm is essentially an umbrella term to describe the methods of research. Carr and Kemmis (1986) state that “a paradigm embodies the particular conceptual framework through which the community of researchers operates and in terms of which a particular interpretation of ‘reality’ is generated.”

Over the last century, different paradigms have emerged due to remarkable growth in social sciences research. According to Dash (2005), there are mainly two paradigms that apply to educational research:

1. **Positivism** – involves quantitative methodology, utilising experimental methods involving study and control groups and administration of pre-test and post-tests to measure gain scores. Here “the researcher is external to the research site and is the controller of the research process.”
2. *Anti-positivism* – concerned with the ability of the person to construct knowledge; therefore knowledge is “personally experienced rather than acquired from or imposed from outside.”\(^{\text{cxxxi}}\) (Appendix A)

### 3.5 The Case Study Approach

The research undertaken for this project follows a case study approach. Robert K. Yin defines the case study as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used.\(^{\text{cxxxii}}\) Furthermore, the most important application of case studies is “to explain presumed casual links in real-life interventions that are too complex for the survey or experimental strategies.”\(^{\text{cxxxiii}}\) According to Cohen et al. (2007), a case study “is a specific instance that is frequently designed to illustrate a more general principle, it is the study of an instance in action.”\(^{\text{cxxxiv}}\) The “single instance” that the authors are referring to here is of a bounded system, for example, a child, a class, a school, a community. A case study provides a “unique example of real people in real situations, enabling readers to understand ideas more clearly than simply presenting them with abstract theories and principals.”\(^{\text{cxxxv}}\) According to Bell (2005), case studies are particularly useful for individual researchers in that they provide “an opportunity for one aspect of a problem to be studied in some depth.”\(^{\text{cxxxvi}}\) Yin (2003) outlines three types of research strategies that can be used:

1. *Exploratory case studies* are used to explore a the field of research when the exact research question is not clear. They often serve as motivation, define research design and hypotheses.
2. *Descriptive case studies* try to obtain information on the particular features of an issue. A phenomenon is described in detail and investigated in its natural setting.
3. *Explanatory case studies* are suitable for casual case studies. They study an event or setting and its interrelationships in depth.
This case study is descriptive in which the methodology will follow Yin’s (2003) five components of research design using the case study approach:

1. Design the case study
2. Conduct the case study: Preparing for the data
3. Conduct the case study: Collecting the evidence
4. Analyse the case study evidence
5. Reporting on the case study

In this study, a multi method case study will be implemented in order to yield both qualitative and quantitative data. The data collection tools used by the author include pre and post questionnaires, observations, focus groups with students, teachers and parents and semi-formal interviews. Using multiple data collection tools, also known as triangulation, ensures that “correct operational measures for the concepts being studied are used.”

Where there is more than one observer or participant in the research setting, triangulation takes place. Cohen et al. (2007) state that the use of more than one method bridges issues of reliability and validity.

3.6 The Setting

The school chosen for this case study is a secondary co-education centre located in the County Limerick. It boasts a tradition of enhancing education through the use of innovative technologies. The school in question is one of the fastest growing schools in the country with the student cohort doubling since 2007. The school structure is such that it has a Principal, Deputy Principal, 6 Heads of Year, 48 Mainstream Teachers, 4 Special Needs Teachers and 3 Special Needs Assistants. The school has “Delivering Equality of Opportunity in Schools” (DEIS) status within the Department of Education. The research process will encompass the input of mainstream teachers, Special Needs Teachers and Assistants, 2nd year students and parents. The choice of this school was a natural one given that the researcher is a teacher in the school and is responsible for the administration of IT throughout the campus. Edmodo, a Social Learning Network, was rolled out in the school in September 2012 and since then has become an integral part of teaching and learning throughout the school community.
3.7 Participants

The study group and the control group for this research will be randomly selected from two class groups. 40 students in total will be selected from a population of 80 second year students. Each group will be comprised of 20 students. The study group will have 11 males and 9 females while the control group will have 10 females and 10 males. The students’ average age is 14 and they come from a working class agricultural background.

3.8 History Curriculum

At Junior Cycle, History should introduce young people to the job of a historian and to the sources and techniques which historians use to find out about the past. It should also provide young people with a wide tapestry of past events, issues, people and ways of life through which they can come to perceive patterns such as cause and consequence, change and continuity. It is in the past that they will find roots of the contemporary world.

The syllabus aims to ensure that students:

- Acquire knowledge of and understanding of human activity in the past
- Understand the contemporary world through the study of the past
- Develop a conceptual understanding and the ability to think independently
- Develop a range of skills essential for the study of History
- Are encouraged to develop positive attitudes such as commitment to objectivity and fairness, and an acceptance that people and events must be judged in the context of their value and time.
- Are encouraged to develop an interest and enthusiasm for History and a value of their heritage from the past.

Students should develop the skills essential to the research and writing of history. They should learn to:

- Locate historical information from a variety of sources
- Select relevant information to answer historical questions
- Examine critically this information on the grounds of fact and fiction
3.9 Ethical Research – Informed Consent

Informed consent is essential when carrying out an educational study as it “protects and respects the right of self-determination and places responsibility on the participant should anything go wrong in the research”\textsuperscript{cxxxviii} – in this study, students together with their parents or guardians exercise their right of self-determination; the subject has the right to refuse to take part or to withdraw themselves from the research at any point. Diener and Crandall (1978) define informed consent as “the procedures in which individuals choose whether to participate in an investigation after being informed of facts that would be likely to influence their decisions.”\textsuperscript{cxxxix} A consent letter was issued to students requesting permission from their parents or guardians to take part in the study (Appendix A).

3.10 Pilot Study

A pilot study was carried out so as to pre-test the questionnaires in order to ensure accuracy, reliability and validity of these data collection tools. Teijlingen and Hundley (2001) outline the importance of running pilot studies for all data collection tools. “One of the advantages of conducting a pilot study is that it might give advance warning about where the main research project could fail, where research protocols may not be followed, or whether proposed methods or instruments are inappropriate or too complicated.”\textsuperscript{cxl} A pilot group comprising of four teachers and eight students were issued with the proposed questions for the pre and post questionnaires. Both students and teachers were instructed to check the suitability of the language used, spell check and also to suggest if some questions needed restructuring due to ambiguities.
3.11 The Case Study – In Practice

Data was collected using a number of research methods. Like all research studies, the need for numerous research methods is important, particularly for a case study. Yin (1994) points out that “the need to use multiple sources of evidence far exceeds that of other research strategies, such as experiments, surveys, or histories.” Moreover, according to Yin, the most important advantage of using multiple sources of evidence is the development of “converging lines of inquiry”. Yin outlines that this is a key process of triangulation and ensures that any finding or conclusion in the case study “is likely to be much more convincing and accurate.”

3.11.1 Pre Questionnaires

Each student completed a pre questionnaire prior to the commencement of the study (Appendix E). The purpose of the pre questionnaire was to provide data on a variety of topics with particular focus on participants’ use of the internet at school and at home. The data collected can be seen as a collection of variables, some of which were of interest to the research in isolation, while others are primarily of interest when compared with other variables.

3.11.2 Pre Case Statistical Analysis

A pre case statistical analysis was completed to ascertain whether or not there was a significant difference in the attainment levels of students from both sample groups (Appendices A-C). The data was gathered from three controlled assessments which were carried out over an 18 month period. The data gathered from these assessments was an integral part of the pre-testing. It measured the attainment of both sample groups. The data was combined with the data of the pre-test to determine if there was a significant difference in the mean attainment of both groups.

3.11.3 Pre-Testing and Post Testing
A pre-test was implemented at the beginning of the study. The aim of this was to compare and contrast the participants’ levels of knowledge of the topic prior to the 8 week programme of study.

A post-test took place during the final week of the study. This test was a duplicate of the pre-test and was used to collect data that would enable the researcher to compare the levels of knowledge and comprehension of students from the control sample and the study sample (Appendix G and J).

### 3.11.4 Observations

Observations were carried out to focus on students’ ability to utilise Edmodo effectively. Cohen et al. (2007) state that the distinctive feature of observation as a research process is that “it offers an investigator the opportunity to gather ‘live’ data from naturally occurring situations.” The researcher can observe directly what is taking place in situ whether this activity is occurring in school or at home. In this case, the researcher has chosen to structure the observational checklist using a scoring rubric rating scales that involved holistic ratings. In a holistic rubric, “the criteria are considered in combination on a single descriptive scale.” Also, holistic rubrics support broader judgements concerning the quality of the process (Appendix F).

### 3.11.5 Online Intelligence Testing

In the interest of validity students in the study group underwent two online intelligence tests so as to identify their learning styles – Visual, Kinaesthetic or Auditory. This data was used to support the data analysis of the post questionnaire.

3.11.6 Post Questionnaires and Semi-Structured Interviews – Multi-Method Approach

The rationale behind the multi-method approach was to ascertain the students’ attitudes through the teaching of history via Edmodo – The Social Learning Network. The questionnaire was structured using a series of open and closed questions. This research tool included selected response questions, ranked responses, routed questions and scaled responses. The data obtained from the semi-structured interviews was an effective tool for filling the gaps from any incomplete or omitted data evident in the post questionnaire findings. Students and three teachers who were using Edmodo in school were subject to the interviews (Appendix H).

3.11.7 Limitations of Research

Yin (1984) outlines three arguments against case study research.

1. Lack of rigour – the case study investigator is often subjective rather than objective.
2. Generalisations are made from theory rather than population.
3. Case studies are often too long, difficult to conduct and produce massive amounts of documentation.
4.1 Introduction

The research findings for this case study are presented in this chapter. The purpose of this study is to determine the impact of Edmodo on teaching and learning in the classroom. The findings presented within this study are based exclusively on the data collected from the secondary primary school in question. The data represents two sample groups comprising of 20 students in each which were randomly selected from the population group of second year students in the school. The two samples included a control group and a study group. The study was conducted over an eight week period. Both sample groups studied the same topic – The Age of Revolutions. The control group were subjected to the “traditional” classroom setting from which they were taught using “conventional” methodologies including use of textbooks, whiteboard for note-taking and worksheets. On the other hand, the study group, while following the same scheme of work, were taught in a classroom setting where Edmodo was used. The findings of this study are represented using charts, tables and written analysis.

4.2 Statistical Procedures

The statistical procedures used in this study encompass two categories:

1. Descriptive Statistics
   Data collected during this study is that of two randomised sample groups that were selected from the population group of second year students in the school.

2. Inferential Statistics
   The use of inferential statistics was to make predictions or inferences about the population from observations and analyses of the sample groups.

4.3 The Research Tools

The following research tools were used in this study as discussed in Chapter 3.

- Pre Case Statistical Analysis (Appendices A-C)
- Pre and Post Questionnaires (Appendices E & H)
4.4 Pre Case Statistical Analysis

4.4.1 Introduction

A pre-case statistical analysis was conducted in order to measure and compare the attainment of students in the control group and the study group over an 18 month period (Appendices A-C). The data collected over this period was used to establish if there was any significant difference in the attainment levels of students from both samples. A sample of 20 students was randomly selected for both groups from a population of 98 second year students.

The sample represents male and female students aged between 13-14 years as summarised in the following table.

<table>
<thead>
<tr>
<th></th>
<th>Mean Age</th>
<th>Male %</th>
<th>Female %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>13.5</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Study Group</td>
<td>13.5</td>
<td>55</td>
<td>45</td>
</tr>
</tbody>
</table>

[Table 4A: Sample Summary – Feb 2012]

The data was gathered from the following controlled assessments.
4.4.2 Hypothesis Testing

The null hypothesis $H^0$ stated that there is no significant difference between the means of both groups in terms of their average levels of attainment across a range of subjects including: English, Irish, Maths, French, History, Geography and Science. The alternative hypothesis stated that the control group and the study group had significant differences in their levels of attainment across the seven subject areas.

Null Hypothesis – $H^0: \mu_1 = \mu_2$

Alternative Hypothesis – $H^1: \mu_1 \neq \mu_2$

The following table summarises the statistics for both groups across the seven subject areas combined.

<table>
<thead>
<tr>
<th>Study/Control Group – Summary – February 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Group</strong></td>
</tr>
<tr>
<td>Mean %</td>
</tr>
<tr>
<td>Standard Deviation</td>
</tr>
<tr>
<td>Sample Size</td>
</tr>
<tr>
<td>Difference of means</td>
</tr>
<tr>
<td>df (degrees of freedom)</td>
</tr>
</tbody>
</table>
The calculated t-statistic was 0.0720, while the critical t-value with 38 degrees of freedom was 2.024. Given that the t statistic is less than the critical t value at 0.05 level of significance, the data fails to reject the null hypothesis. Thus the mean attainment of both samples is assumed to be reasonably equal. This is further reinforced with p=0.943 which is greater than 0.05.

In order to add validity to this hypothesis, a two-tailed test was carried out for each of the three controlled assessments that were implemented over 18 months prior to the commencement of this study. Table 3A provides a summary of the data returned for the three assessments.

<table>
<thead>
<tr>
<th>Mean %</th>
<th>Mean Difference %</th>
<th>t-Statistic</th>
<th>2 tail Sig P</th>
<th>Critical t-Value (0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Group</td>
<td>Control Group</td>
<td>Study Group</td>
<td>Control Group</td>
<td></td>
</tr>
</tbody>
</table>
Analysis of the data collected for the three assessments revealed students’ level of attainment was comparatively similar for both groups. The Christmas Examination (2011) data shows that the study group scored marginally better than the control group with mean difference of 0.47%. The calculated t statistic was 0.1975 which was less than the critical t value of 2.024 at 0.05 level of significance. This suggests that there was no significant difference in the mean percentage scores of both groups.

The Summer Examination (2012) showed little disparity from the previous examination. As with the previous data, the control group averaged marginally higher than the control group with a mean difference of 0.52%. Given that the t statistic valued at 0.3594 was less than the critical t value, the implications are that there was no noticeable difference between the two mean scores.

The final collection of data from February 2013 indicated the similar trends that emerged from the previous t tests. The control group displayed a mean percentage of 69.73% with the study group averaging 66.85%. This indicated a mean difference of 2.88. The calculated t statistic was 0.6094 which is within the 0.05 level of significance. Therefore, like the previous two test, the researcher can accept the null hypothesis – that is, that both groups demonstrated similar levels of attainment prior to the study.
A t test was also carried out to look at attainment levels for History independently from the other subjects. There was no disparity between the trend revealed here and that of the previous test. The control group averaged a mean score of 76.52% against 73.58% for the study group. This illustrated a 2.94% difference which was within the 0.05 level of significance.

<table>
<thead>
<tr>
<th>History Attainment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Group</strong></td>
</tr>
<tr>
<td>Mean %</td>
</tr>
<tr>
<td>Standard Deviation</td>
</tr>
<tr>
<td>Sample Size</td>
</tr>
</tbody>
</table>

| Difference of means | 2.94 |
| df (degrees of freedom) | 38  |
| Calculated t-statistic | 1.0653 |
| 2 tail Sig P          | 0.2933 |
| Critical t at 0.05 level of significance | 2.024 |

### 4.4.3 Summary

The null hypothesis stated that there was no significant difference in the attainment levels of students in the study group and the control group. The data returned from the two-tailed tests failed to reject this hypothesis.
4.5 Pre Questionnaire

4.5.1 Overview

The aim of the pre questionnaire was to identify trends in students’ use of the internet both at school and at home (Appendix E). The main focus of this research tool was to compare students’ use the internet at home with use at school.

4.5.2 Survey Data

Profile of Participants

The rationale behind the questionnaire was such that issues relating to gender were beyond the scope of this research study and are not taken into account when the data was analysed. The students subject to this study had a male population of 55% and a female population of 45% (Fig. 4.5A).

Do you use the internet use at home?
93% of respondents use the internet at home and 7% of respondents do not. 7% of respondents stated that they do not use the internet at home. The reason cited was that respondents had no access to the internet at home. This figure is a reflection of current trends in Ireland which indicate that in 2012, 76.8% of the population were online (www.newmediatrendwatch.com) (Fig. 4.5B).

100% of respondents use the internet at school. The school has a designated IT laboratory which caters for the teaching the ICT syllabus and serves as a drop-in room for teachers wishing to utilise the facility for class time. ICT is taught to all year groups in the school.
Those students who have mobile devices are given access to the wireless broadband (Fig. 4.5C).

**How often do you use the internet for learning tasks at school?**

80% of respondents were of the opinion that they used the internet for learning tasks at school “sometimes”. 10% stated that they used it “a lot” while a further 10% cited that they used it a “little”. 20% of the students surveyed said that they used the internet for learning tasks in school on a daily basis. A further 80% said they used it 2-3 times per week. Of the 20% who use the internet for learning tasks on a daily basis, 60% said they used mobile devices to get connected (Fig. 4.5C).

**Do you like using the internet for learning tasks?**

10% - Yes, 90% - No
90% of respondents said they like using the internet for learning tasks. 10% of respondents said they did not like using the internet for learning tasks. The respondents in favour of using the internet for learning tasks said that they enjoyed using the internet for learning tasks because it helps them understand the subject matter better. Also, many felt that they could engage more in the task and remember what they have learned. Visual stimuli such as video and images are cited as major factors in the appeal of the internet to the respondents for learning. In recent years, the school has invested in a broadband system that can cope with the high demand of internet users on campus. The large percentage of students who like using the internet for learning tasks is primarily as a result of staff’s commitment to integrating the use of online technology in their teaching (Fig. 4.5D).

**Do you think you work better on learning tasks that require use of the internet?**

Of the study population, 90% of respondents are of the opinion that they work better on learning tasks that require use of the internet. The response rate was 10% for those who said that they do not work better on learning tasks that require use of the internet. The majority of respondents stated that the internet helps them remain on task for longer periods of time and
that they are more interested and understood the subject matter better. Furthermore, the internet helps them visualise what they were learning, notably through the use of video, images and maps. It is apparent from Fig. 4.5D that a majority of students are in favour of integrating the use of internet into teaching and learning. This is indicative of the 21st century learner who has grown up in an environment that is saturated with online digital technologies. Interestingly for the 10% of respondents who stated that they do not work better when using the internet, reason cited was that internet is a distraction (Fig. 4.5E).

How many hours per day do you use the internet?

Over half of the participants indicated that they use the internet for approximately 1-2 hours per day. This is an opinion of participants and is not measured by the researcher. 35% of the cohort estimate that they use the internet for 2-3 hours per day with 10% of respondents going online in excess of 3 hours per day. The obvious trend emerging from this data is that
although 7% of the population indicated already in this research (Fig.4.5B) that they are getting online at school via IT lab or wireless network (Fig. 4.5F).

What time of the day are you most online?

![Percentage chart showing time of day online]

[Fig. 4.5G: What time of the day are you online most?]

The most striking result to emerge from the data above is that 70% of respondents stated that they are online most at night (after 19:00). A further 25% are online during the evening (16:00-19:00) and 5% of respondents are online most in the morning (05:00-12:00). This shows a disparity between the amounts of time students spend online at school with that at home. It is apparent from the chart that respondents have increased access to the internet at home. The trend that stands out from this data is that school is the time of the day when students are least connected. Those who are online most at night time cited their friends being online as the main reason for being connected. Facebook and internet chat was cited as common web applications used at this time. The school in question has a strict IT policy which blocks any access to social networking websites. Respondents who are online most at evening time said that the main reason for this is to assist with homework tasks and carry out research for project work (Fig. 4.5G).

Which of the following applications do you use most often on the internet?
This chart is quite revealing in several ways. First, the data shows that approximately three quarters of the population use the internet to access social networking websites. This compared with gaming websites which are accessed most by 15%. A further 8% cited that they used homework applications such as Edmodo and e-mail most while 5% use music and video applications more often than any others. It can be seen from the chart that social networking is a dominant theme in terms of internet use in 14-15 year olds. A further trend emerges when comparing gender with internet use. There is a slight disparity in how the female cohort and the male cohort use the internet. 80% of girls surveyed said that they use social networking sites, notably Facebook and Twitter, more than any other online application. A further 70% of female respondents stated that other than social networking sites, they accessed music and video sites such as YouTube regularly.

Of the 15% of respondents who stated that they used gaming websites most, all were male. The 6 male respondents accounts for 28% of the male cohort. Meanwhile, 48% said they use Facebook more than any other online application with 24% opting to use music and video sites most (Fig. 4.5H).
The single most striking observation to emerge from the data comparison in Fig. 4.5I and Fig. 4.5J is that students use the internet differently at school than when at home. There are many factors at play here; for one, the school restricts users from accessing specific websites, typically, Facebook, Twitter and other social networking websites. While music/video and gaming websites are not completely restricted, it is discouraged by management. However, this is not enforced on mobile devices. This accounts for the 10% of students accessing these websites respectively while at school. The response rate was 90% for Google search engines which respondents stated is used for schoolwork-based research.

When at home, 75% of respondents indicated that they spend more time on Facebook than any other website. 15% stated that they use gaming websites the most when at home while 5% highlighted YouTube and the Google search engine as the most used. The pattern emerging is that social networking is playing an increasingly important role in the lives of young people today. The correlation between this and the time of day respondents access the internet is interesting and presents lots of questions regarding education role of social media (Fig. 4.5I/4.5J).
4.5.3 Summary of Findings

Different trends emerged from the pre-questionnaire when comparing how students are using the internet at home with school. For one, the time of day when students are most online was when they were finished school. The responses indicated that students spend less time “connected” and more time “disconnected” when they are in school. The dominant trend is that students are using the internet more at home than at school. Furthermore, respondents’ use of the internet varies in terms of whether they are in school or at home. The underlying factor which is being suggested here is that when students are at home, they have more time, more privacy and more liberties in terms of the kinds of websites that they are accessing.

4.6 Observation – Performance Assessment

4.6.1 Overview

An observational checklist was designed to monitor and record students’ performance in both the IT lab and domestic online setting (Appendix F). The checklist focused on the following behaviour:

(i) Application to the relevant tasks
(ii) Appropriate use of Edmodo at surface level

Four observations were carried out over the eight week period of the study. The observations were carried out by two mainstream teachers and two Resource teachers

The observers’ role was to monitor the students’ use of the Edmodo website through informal observations with the aid of an observational checklist (Appendix C). Furthermore, additional observations took place on the part of the author who monitored students’ online performance via Edmodo outside of the classroom setting. Feedback was provided via the use of semi-structured interviews, where observers were asked to comment generally on students’ application and appropriate use of Edmodo.
The observation of students’ performance was measured using scoring rubrics that involved holistic ratings. The scoring rubric option was chosen because it enabled the observers to address several variables or qualities within the same scale. The activities being observed, within a specific category represents the process that directly illustrates a degree of accomplishment in the students’ application of Edmodo.

### 4.6.2 Observations – Summary

Participants were provided with a video tutorial ([http://www.youtube.com/watch?v=4-KBwriCO-Q](http://www.youtube.com/watch?v=4-KBwriCO-Q)) which gave the students an overview of how Edmodo can be used to enhance teaching and learning. In addition to this, the author allocated the two forty minute Edmodo sessions for practical demonstrations where participants were guided through the input and output tools. The demonstrations focused on the following categories:

(i) Accessing Edmodo  
(ii) Input/Output tools  
(iii) Appropriate use of Edmodo

Over the eight week period of the social learning network project, four observations were carried out in the IT lab with further ones carried out outside of class time. Observers were provided with a scoring rubric to score students use of Edmodo under the above mentioned categories. The scoring scale was structured as follows:

- **4 – Excellent** – The student meets the standard of excellence for the category and demonstrates exemplary performance or understanding.  
- **3 – Proficient** – The student meets the acceptable standard for the category by demonstrating solid performance or understanding.  
- **2 – Adequate** – The student just meets the acceptable standard for the category by demonstrating solid performance or understanding  
- **1 – Limited** – The student is not yet meeting the acceptable standard for the category and has serious errors, omissions and misconceptions.
4.6.3 Research Findings

### Accessing Edmodo

<table>
<thead>
<tr>
<th></th>
<th>Week 1</th>
<th>Week 3</th>
<th>Week 5</th>
<th>Week 7</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Score</td>
<td>3.75</td>
<td>3.9</td>
<td>4</td>
<td>4</td>
<td>3.91</td>
</tr>
</tbody>
</table>

[Table 4F: Accessing Edmodo]

Students scored very high in the “Accessing Edmodo” category. Within this category, they were required to be able to log on to Edmodo using their school e-mail. Furthermore, they were required to demonstrate how to access Edmodo using the URL [www.edmodo.com](http://www.edmodo.com) and to join a class group using the code provided by the teacher. The mean score for students’ ability to “access Edmodo” was 3.91. Once the data was collated, it showed that all 20 participants showed steady improvement in this category over the eight weeks of the study. Female participants scored a mean score of 3.91 on conclusion of the observations. Male participants on the other hand, scored marginally better with a mean score of 3.94.

### Input/Output Tools

<table>
<thead>
<tr>
<th></th>
<th>Week 1</th>
<th>Week 3</th>
<th>Week 5</th>
<th>Week 7</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Score</td>
<td>2.95</td>
<td>3</td>
<td>3.75</td>
<td>4</td>
<td>3.42</td>
</tr>
</tbody>
</table>

[Table 4G: Input/Output Tools]

When measuring the participants’ ability to use the various “input/output tools”, the data returned differed from that of the “Accessing Edmodo” category. The mean score after Week 1 was 2.95 which had increased marginally by Week 3. This is partly due to time constraints and the multi-faceted nature of the input and output tools. By Week 5, the mean score for the group had increased significantly to 3.75 and by Week 7 participants had reached a mean
score of 4. An average score over the eight week period was 3.42. Female participants scored a mean score of 3.55 while male participants marginally less with 3.50.

<table>
<thead>
<tr>
<th></th>
<th>Week 1</th>
<th>Week 3</th>
<th>Week 5</th>
<th>Week 7</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Score</td>
<td>3.65</td>
<td>3.9</td>
<td>4</td>
<td>4</td>
<td>3.88</td>
</tr>
</tbody>
</table>

[Table 4H: Appropriate Use]

Observers were required to monitor students’ appropriate use of language under the “Appropriate Use” category. The purpose of this was to discourage the use of slang or “texting” style language in participants’ responses to posts and discussion threads. Participants scored excellently throughout the observation period with an average mean score of 3.88 by Week 7. Female participants scored an average of 3.87 in this category with male participants scoring a little higher with 3.96.

### 4.7 Paired Sample T-Test

#### 4.7.1 Background

The purpose of the paired sample t-test was to determine if there was a reliable significant difference between the two means of the pre-test and the post test. From the data acquired in the post test carried out at the end of the study, it is clear that the academic ability of the students in both the control group and study group increased. The mean percentage result of the study group at the beginning of the project was 34.25. On conclusion of the project, the mean percentage for the study group was 88 marking a significant increase of 53.75. The mean percentage result of the control group after the pre-test was 36.75 which increased to 78.75 at the end of project. This marked an increase of 42.

#### 4.7.2 Findings

A paired sample t-test was conducted to analyse how significant the increase is for both groups. The null hypothesis $H^0$ stated that there was no difference between the mean
percentage scores of the pre-test and the post test within each group. The alternative hypothesis $H_1$ stated that the mean percentage score of the post test is greater than the mean percentage score of the pre-test within each group.

Null Hypothesis – $H^0$: $\mu_1 = \mu_2$

Alternative Hypothesis – $H^1$: $\mu_1 \neq \mu_2$

<table>
<thead>
<tr>
<th></th>
<th>Total Group</th>
<th>Pre-Test</th>
<th>Post Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean %</td>
<td>36.75</td>
<td>78.75</td>
<td></td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>10.04</td>
<td>11.11</td>
<td></td>
</tr>
<tr>
<td>Sample Size</td>
<td>20</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

Difference of means | 42

df (degrees of freedom) | 19

Calculated t-statistic | 15.995

1 tail Sig P | 0.0001

Critical t at 0.05 level of significance | 1.7291

[Table 4I: Paired Sample t Test – Control Group]
The analysis of the data from the control group indicates that the null hypothesis $H_0$ must be rejected and that the alternative hypothesis $H^1$, that is, that the post-test mean percentage score is greater than the pre-test score, is accepted. The calculated $t$-statistic was 15.995, while the critical $t$-value with 19 degrees of freedom was 1.7291. Given that the calculated $t$-statistic is significantly greater than 1.7291, the null hypothesis is rejected. This is further reinforced by the $P=0.0001$ which is less than critical $t$-value of 0.05.

<table>
<thead>
<tr>
<th>Study Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Group</strong></td>
</tr>
<tr>
<td>Mean %</td>
</tr>
<tr>
<td>Standard Deviation</td>
</tr>
<tr>
<td>Sample Size</td>
</tr>
</tbody>
</table>

| Difference of means | 53.75 |
| df (degrees of freedom) | 19 |
| Calculated $t$-statistic | 24.739 |
| 1 tail Sig P | 0.0001 |
| Critical $t$ at 0.05 level of significance | 1.7291 |

The analysis of the data from the study group indicates that the null hypothesis $H_0$ must be rejected. The data indicates that the post-test mean percentage score is greater than the pre-test score. Students in the study group scored greater in the post-test with an average increase of 53.75% when compared with the pre-test. Therefore the alternative hypothesis $H^1$ is accepted. The calculated $t$-statistic was 24.739, while the critical $t$-value with 19 degrees of freedom was 1.7291. Given that the calculated $t$-statistic is greater than 1.7291, the null
hypothesis is rejected. This is further reinforced by the P=0.0001 which is less than critical t-value of 0.05.

The results of the paired sample t test reveal similar results in that both the control group and the study group have shown a noticeable increase in their post-test attainment when compared with their pre-test attainment. The control group who were subject to “traditional” methods of teaching recorded an average increase of 42% in the post-test. However, remarkably, the study group who were subject to teaching methods that centred on Edmodo, scored even higher with an average increase of 53% in the post-test.

4.8 Post Questionnaires and Semi-Structured Interviews – A Multi-method Approach

4.8.1 Rationale

The rationale behind the multi-method approach was to ascertain the students’ and teachers’ attitudes to the teaching of history via Edmodo – The Social Learning Network. Two questionnaires were distributed; one for the study group of students and one for the three teachers who used Edmodo. The questionnaire was structured using a series of open and closed questions. This research tool included selected response questions, ranked responses, routed questions scaled responses. Semi-structured interviews were carried out with the study group (Appendices H&I).

4.8.2 Overview

The student questionnaire was distributed to all 20 participants in the study. There were twelve questions in total. The teacher questionnaire was given to 6 teachers who have been using Edmodo. The semi-structured interview was carried out at the end of the study after the data from the post questionnaire was gathered and analysed. The study group was divided into four groups each consisting of five participants. What distinguishes the semi-structured
Interview from that of an unstructured interview is that prior to conducting it, the researcher had prepared a limited number of questions in advance. As each question was pitched to each interviewee group, the interviewer invited open responses within each group and took notes for the purpose of highlighting themes. The pre-prepared questions highlighted the following themes:

- Learning styles
- Most effective learning tools in Edmodo
- Positive and negative effects of Edmodo on learning
- The “social media” dimension

The findings from the interview are presented intrinsically with the post-questionnaire data as evident in the graphical data presented. It is important to point out that prior to distributing the questionnaire one class period was used to teach students about different types of learners as evident in the first finding below. Furthermore, for the purposes of validity, students were subject to two online assessments which measured their learning styles (Appendix ?).

4.8.3 Summary of Respondents

Profile of Learner Type

![Graph showing profile of learner type](Fig. 4.8A: Profile of Learner)
33% of those surveyed describe themselves as kinaesthetic learners. 57% of these are male with 43% female. 14% of respondents describe themselves as auditory learners. 33% of this figure is male and 66% are female. 52% of those surveyed describe themselves as visual learners with 54% of this cohort being of the male gender and 36% being of the female gender. The data suggests that both male and female participants in the study group orientate towards visual-kinaesthetic when it comes to effective learning. This trend reflects 86% of the study group. The combined data obtained from the two online assessments reveals a similar pattern in students’ types of learning. 83% of students who completed the online testing are identified as having visual and kinaesthetic styles of learning.

In light of this figures, there is correlation between the types of websites students are accessing and their learning styles. Earlier research indicated that the majority of respondents are using Facebook more than any other website. Emerging from this data is the hypothesis that the visual and interactive nature of social networks is appealing to these types of learners (Fig. 4.8A).

![Is Edmodo a useful tool?](image)

It is the opinion of the entire cohort surveyed that Edmodo is a useful learning tool. When compared with textbooks, handouts and worksheets, the majority of respondents commented that Edmodo is an exciting way to learn. Respondents state that they are more inclined to complete their homework tasks when using Edmodo. The data suggests that participants are compelled more by how they learn rather than what they learn. This draws attention to earlier
research which implies that the way student learn is closely linked to the types of websites that are being accessed most (Fig. 4.8B).

The findings revealed in the teacher questionnaire reflect what students have to say about Edmodo.

**Teacher A:**

“Edmodo is getting students on task quicker. Not only does it get them working but it is also improving the concentration levels of students who would normally struggle to do this.”

**Teacher B:**

“Edmodo has made me a better teacher. My students like the subject more and their grades are improving. I only use Edmodo at the beginning of classes to go through homework or at the end to explain the homework. Students’ attitude to homework has completely changed. Because it’s online, they’re more inclined to do it.”

**Teacher C:**

“I teach a Science. Edmodo has made my life so much easier. I have a low ability group of students who prior to using it, were difficult to engage. Edmodo has certainly changed this and I am seeing visible results. Students are doing their homework because it’s online. Their homework can often involve a video or a song with questions on it and they seem to enjoy working this way. While the textbook is important in my subject, Edmodo brings another dimension to my teaching and most students are actually positive about doing work at home.”

**Most useful features of Edmodo**
As shown in Fig. 4.8C, respondents are of the opinion that video, discussion threads and photos are the most useful elements in Edmodo. This indicates a trend where participants in the study prefer to learn via visual and interactive media. An emerging theme is that students want to learn in a co-constructivist way through interaction and collaboration. This style of learning manifests itself in the popular features that are outlined by students in the research (Fig. 4.8C)

The feedback provided by teachers show correlation between what they think and what the students think.

**Teacher C:**

“The discussion threads are a brilliant way of getting the students working together and keeping in contact with those who are absent from class due to school trips, sports etc. The progress tracking tool is very useful in that teachers, students and parents can monitor results.”

**Teacher A:**

“I love how easy it is to write a post to students and they can receive it on their computer, tablet or mobile phone. You can have all your online tasks planned ahead and schedule to appear automatically. You can also attach images, videos and links to other websites on a post.”
100% of respondents remark that Edmodo helps them understand topics better than without using it. 50% of respondents indicate that the use of visual media is a major factor in helping them understand topics better. Also, it is the opinion of 40% of respondents that the interactive nature of Edmodo helps them engage with their peers, and understand topics that they would have otherwise misunderstood (Fig. 4.8D).

**Ranks - Concentration Levels**

From chart the above we can see that 75% of respondents believe that when they use Edmodo their concentration levels were “excellent”. 15% indicate that their levels were “good” with 10% stating that they were “okay” Respondents’ viewpoint is that the different tools made available to them keeps them interested in comparison to working from the same textbook all the time. One individual stated that the more ways teachers have to present information to them, the more likely students will concentrate more. The emerging theme is that the days of “chalk and talk” in the classroom are ineffective in terms of engaging students for longer periods (Fig. 4.E)
100% of respondents state that Edmodo is very similar to Facebook. Edmodo started out as the Facebook for classrooms – a social network-style place for teachers to coordinate online with their students. A common trend that emerged from this aspect is that respondents regarded it’s similarity with Facebook as a “good thing”. Reasons cited include the ability to post messages, participate in discussion threads and upload images and videos. However, one theme that received the most mention was the fact that like Facebook, Edmodo is accessible on mobile devices and is compatible on all platforms including Android and iPhones. Like Facebook, Edmodo sends notifications to students’ devices when assignments and posts are uploaded to the class group or when assignments are marked and graded (Fig. 4.8F).

70% of respondents stated that they are “engaged” when using Edmodo. A further 20% said they are” very interested” in the topic or class when using the social learning network with 10% “interested”. The data shows that Edmodo reaches out to all 20 participants in this study. Earlier data reveals that there are three different learning styles within the study group –
kinaesthetic, auditory and visual. The suggestion is that Edmodo is facilitating all learners, albeit at different levels of engagement (Fig. 4.8E). Informal conversations with parents about Edmodo echoes what students are saying. Parents were of the opinion that their children were keen to go online when they went home to do their homework. One parent explained that prior to Edmodo, they did not have access to the internet at home. They have since installed broadband.

**Do you think Edmodo increases your attainment?**

![Bar chart showing 80% of respondents believed Edmodo increases their attainment](Fig. 4.8H)

80% of respondents gave the opinion stated that they thought Edmodo would increase their attainment in their subject. 20% said it would not increase their attainment. Interestingly, one student explained that he/she was confident that his/her attainment would be high with or without Edmodo. A new trend emerges from this finding. The student explained that what he/she found of benefit to using Edmodo was that he/she found the subject more interesting and were able to visualise what they were learning better (Fig. 4.8H).

There is a similarity in what teachers had to say regarding attainment of their students.
Teacher A:

“I have seen much improvement in students grades Edmodo gives students a sense of self discipline. Students appreciate the educational value of the internet and pick up valuable skills such as interaction and collaboration.”

Teacher B:

“It’s impossible for students to hide behind the safety of being out of school. At the evenings and weekend their teachers are contactable. It is easy for students to keep on track with assignments and study.”

Teacher C:

“Yes, it increases attainment Edmodo increases the time students spend on the subject. The progress tracker increased their motivation. They have no excuse for falling behind as all the information is recorded and available.”

Organisation

100% of respondents stated that Edmodo helps improve their organisation. A trend that emerges from this data is that participants were more inclined to be more focused at home when completing homework tasks. The main factor for this is that participants go online most after school. Consequently if homework requires them to be online, they will be more engaged
than if they had to complete work from a textbook. Respondents listed the following factors to contributed to improved organisation (Fig. 4.8I):

(i) Posts
(ii) Deadlines
(iii) Notifications on mobile device and e-mail
(iv) Resources Library

4.8.4 Conclusion

The findings are summarised as follows:

- The study group and the control group scored similar levels of attainment prior to the commencement of the study.
- There appears to be a disconnect between how students use the internet at school with home.
- Students adapted quickly to the user interface of the social learning network. There may be a link between this competence and the media culture that they have grown up in.
- Some students opted to use abbreviated phonetics in their writing. Is this detrimental to literacy or can it be used to develop students writing skills?
- Students in the study group scored better than those in the control group at the end of the study. This raises the question about social learning networks having a positive effect on attainment.

Chapter 5

Discussion of Findings
5.1 Introduction

The purpose of this chapter is to discuss the research findings that are outlined in the previous chapter in the context of the literature review and the research questions. The aim to this research was to examine the effectiveness of Edmodo – a social learning network, on teaching and learning in History at post primary level.

5.2 Research Questions

The case study considers two research questions:

1. Why should teachers rethink their pedagogical practice in light of the emergence of Web 2.0 technologies?
2. What are the implications of social learning networks on teaching and learning of History at Junior Certificate level in a rural secondary school?

5.3 Discussion of Results

5.3.1 Pre-Case Statistical Analysis

The pre-case statistical analysis was conducted in order to compare and measure the attainment levels of students from the control group and the study group. The researcher analysed the data across several subject areas from three sets of assessments that had already been completed prior to the study. The aim of this was to ascertain whether or not the control group and the study group were of similar levels of ability. Hypothesis testing was carried out and data was analysed from three controlled assessments.

Analysis of the data indicated that the study group and the control group showed little difference in their mean percentage scores of all three assessments combined. The study group recorded a mean of 68.15% with the control group marginally better with 68.44%.
Further enquiry takes place when the researcher focuses on attainment in History alone. Although the data returned 2.94% difference between the means of both samples, this margin was not significant enough to merit the alternative hypothesis that both groups differed in terms of their levels of attainment in History.

5.3.2 Pre Questionnaire

5.3.2.1 Rationale

The aim of the pre questionnaire was to identify trends in how students use the internet and provide contrasting trends regarding how students in both samples used the internet at home and at school.

5.3.2.2 Internet Accessibility

90% of this cohort stated that they used the internet at home. All students use the internet at school. This figure is consistent with O’Neill and Dinh (2012) who cite that 87% of young people in Ireland today access the internet from home and a further 66% have access at school. 80% of respondents reported that they use the internet for learning tasks at school 2-3 times per week. 20% of respondents use the internet at school on a daily basis. This trend is such that 60% of these respondents reported that they use mobile devices to go online. Pachler et al. (2010) states that over the last two decades, changes have taken place for children in society. “Children continue to gain ever increasing access to mobile devices from which “they engage in meaning-making that is personally motivating for them.” O’Neill and Dinh (2012) echo this sentiment reporting that 46% of young people go online using mobile devices.

5.3.2.3 Internet as a Learning Tool

The main trend emerging from this study is that the majority of students surveyed regard the internet as of benefit to them for learning tasks. This suggests that students are more concerned with how they learn rather than what they are learning. This notion reflects the thoughts of McLoughlin and Lee (2007) who see a relationship between what Livingstone (2009) defines as the “always on” and “constantly connected” generation of learners with
how they learn. The reality is that “they are no longer passive consumers of knowledge.” Prensky’s (2001) definition of today’s learners as “Digital Natives” adds substance to this discussion.

On the other hand, 10% cited that the internet was a distraction more so than a benefit to productivity in terms of their work. Dunn (2011) echoes this sentiment: “Students, who attempt to multi-task, checking social media sites while studying show reduced academic performance. Their ability to concentrate on the task in hand is significantly reduced by the distractions that are brought by social media sites.”

5.3.2.4 Going Online – Duration

55% reported that they use the internet on average 1-2 hours per day with 30% online for 2-3 hours per day. The data illustrates that 70% of respondents use the internet at night (after 19:00) with 25% stating that they used it most during the evening (16:00-19:00). A noticeable trend here is the high proportion of those online at night. This figure shows a 50% increase in part to the Norton Family Report (2010) which outlined that young people spend an average of 1.6 hours per day on the internet. Owen’s (2004) sociological viewpoint echoes why the youth today are spending increasing amounts of time online. The evolution of technology is rapid and intrusive and has intrinsically left today’s generation of learners no choice but to evolve with it.

5.3.2.5 Reasons for Accessing the Internet

Respondents accessed social networking sites more than any other. This finding accounted for 73% of the study sample. The popularity of social networking sites, notably Facebook, is illustrated in the findings of the Norton Family Report (2010), which reported that one third of 9-16 years use social network sites. This figure reflects a 40% increase in the report’s findings which cited that in Ireland, 47% of teenagers aged between 13-16 years had a social network profile. Boyd (2007) outlines that at a simple level, young people engage in social
media for the social element of it. They do it to maintain connections with friends. On the other hand, Boyd explains that social networking sites are a necessity for young people’s social development. There is a correlation between what Boyd is saying and the time of day students are going online and accessing the internet. The fact that most students are going online at night time and are accessing Facebook at this time implies that there is valid argument to Boyd’s theory.

5.3.3 Pre Test

Prior to the study, a pre-test was conducted in order to test both the study group and control group’s knowledge of the Age of Revolution. The aim of the pre-test was to ascertain that students from both groups were scoring similar levels of attainment within the remit of the history. 40 students were tested in total. The pre-test was structured as follows:

- 20 questions in total
- 16 closed-ended questions
- 4 open-ended questions
- No interaction was permitted between the students and they were allocated a time allowance of 30 minutes to complete the test

The study group scored a mean of 34% while the control group scored 36.75%. This data, just like the pre-case statistical analysis, indicated that the mean difference of 2.5% which was not significant enough to reject the null hypothesis that students from both samples were at a similar level of attainment.

5.3.4 Observation – Performance Assessment

Observations focused on students’ performance in the IT lab. Additional observations were carried out on students’ use of Edmodo at home; that is, their homework tasks were monitored by the research. Students were quick to adapt to the user interface of Edmodo. Interestingly however, a noticeable theme to stand out from the observations was when measuring students’ “appropriate use” of the online software. During the early stages of the
study, students found it difficult to distinguish between what was “appropriate use” and what was not. The reason for this is in part a literacy issue associated with the texting generation of learners. In many cases, students showed signs of phonetic abbreviation in their writing. According to Vosloo (2009), in recent years “teachers and parents have blamed texting for two ills: the corruption of language and the degradation in spelling of youth.” However, Vosloo presents an alternative viewpoint in light of today’s learners whom he refers to as the “generation text”. “Taking a broader view of literacy is crucial in their education, formally in classroom settings and informally in home and public settings. Further, leveraging the extensive reading and writing that happens – in the form of texting – holds potential for literacy development.”

5.3.5 Post Test

The post test was carried out at the end of the study and it was a duplicate of the pre-test. The aim of the post-test was to investigate if students from both the study group and the control group were of the same attainment level in the subject area on conclusion of the study. Upon analysis of the data returned from the post test, there is a notable difference in the mean attainment of both groups. The study group returned a mean score of 88% in comparison to the control group’s score of 78.85%. The results of this study indicate that there is a relationship between attainment and pedagogical practice. This is reflected in what Mehra (2008) describes as “passion-based learning.” Learners want to be participants in the learning process. Mehra argues that Web 2.0 is an excellent medium for learning as it enables learners to communicate, share information and collaborate. These skills, as Mehra points out, are “best suited to the demands of today’s work environment.” This theory is further reinforced by the IPTS (Institute for Prospective Technological Studies) who cite evidence showing social media to enhance learning.

5.3.6 Paired Sample t Test

The study group and control group were subjected to a paired sample t-test at the end of the study. The purpose of this test was to measure whether or not there was a significant increase in the attainment of students in both groups on conclusion of the study. The analysis of the data revealed that the attainment of students in the study group and the control group had
increased. The difference of means in the control group’s pre-test results and post-test results was 43%. The study group showed a mean difference score of 53.75%.

Analysis of this data indicated that the control group, who carried out the study using traditional conventional teaching methods, experienced an increase in attainment when compared with the pre-test data. Moreover, this increase in attainment was not as high as the study group whose learning was mediated through Edmodo.

5.3.7 Post Questionnaire and Semi-Structured Interviews – A Multi-Method Approach

The post questionnaire was carried out as part of a multi-method approach in which the data returned from this qualitative research was supported with information obtained from the semi-structured interviews.

5.3.7.1 Learning Styles

Every student is unique and acquires knowledge in different ways. Gardner (1993) articulates seven criteria for behaviour to be considered intelligence. Different students have different learning styles. Some students are visual learners; they learning by watching. Some are auditory learners; they learning by listening. Others are kinaesthetic learners; they learn by doing. The post questionnaire highlighted noticeable trends in terms of students’ learning styles. 66% of the study group described themselves as visual or kinaesthetic learners. A closer look reveals that 52% of the study group reported that they were visual learners. This statistic accounts for 54% of the male cohort and 36% of the female cohort. Furthermore, 15% described themselves as auditory learners; 33% of this figure being male and 66% being female.

Visual learners have the ability to “perceive visual or spatial information, to transform and modify information, and to recreate visual images even without reference to an original
Visual learners learn by associating ideas, concepts, data and other information with images, video and multimedia. Edmodo provides users with a multitude of visual stimuli including images, video and animations to name but a few. According to findings, the most common learning style within the study group is visual. A total of 52% of those surveyed described themselves as visual.

Kinaesthetic learners have the ability to “unite body and mind to perfect physical performance.” Therefore, these learners learn by physical activity rather than by watching or listening. Although Edmodo cannot provide a physical learning environment per se, it can help these learners to engage in interactive-based multimedia through which they can learn more easily. Burd and Buchanan (2004) state that kinaesthetic learners “need to do” in order to learn. They perform best in an active learning environment where they can be involved in the learning process. Bonk and Zhang (2006) state that kinaesthetic learners “need to try out, experience, imitate, and practice concepts and ideas in order to learn them more deeply.” Edmodo enables teachers to present information in an interactive way. Kinaesthetic learners are facilitated with features such as quizzes, peer to peer discussion threads, polls and interaction with teacher. The research indicates that 33% of respondents classed themselves as kinaesthetic learners.

Auditory learners have the ability to “think in words that human beings can remember, analyse, problem solve, plan ahead and create.” Auditory learners are those who prefer to listen to acquire knowledge. Research findings indicate a minority of auditory learners in the study group. This trend might provide reasoning as to why students made no reference to any audio feature as a useful tool in Edmodo. The data shows that 14% of the group described themselves as auditory with 33% being male and 66% being female. The figure for females is in sharp contrast to that of males and may imply that although a minority, females are more likely to learn better by listening than that of males in the group.

5.3.7.2 Similarities with Facebook
The similarity that Edmodo has with Facebook might also explain why students are engaged in its use from the outset. Edmodo contains many of the tools that students are already familiar with from social network sites like Facebook. These include the ability to post messages, engage in peer to peer “chat” like discussion threads, upload and update their profiles, set up small peer groups, post images and video and change their status. 100% of respondents stated that Edmodo was very similar to Facebook. Sheridan (2012) outlines that in the last decade people for smaller niche social networks so as to augment their online social experience. Edmodo is just one example of a social network built around education. CISCO (2008) questions whether or not traditional modes of classroom instruction can inspire and engage students when life outside the classroom is so different. Moreover, CISCO reports that class time for learners is the only time in their day that they completely disconnect. The emerging argument is that there is a close relationship between Edmodo’s appeal to students and how they use the internet outside of school.

5.7.2.3 Mobile Learning

Like Facebook, Edmodo can also be accessed on all mobile platforms including Android and iPhone. Respondents stated that the app version of Edmodo was just like Facebook where they could receive notifications, view assignments, submit homework, participate in discussion threads and view grades. This observation echoes what McLoughlin and Lee (2007) describe as a “plethora of online groups of individuals that are self-directed, vital, self-managed and active in the generation of new ideas.” OFCOM (2008a, p.5) reported that in the UK alone, children aged 12-15 have an average of six media devices. Furthermore, the report cites that 84% of people aged 8 or over use, or have access to mobile services.

5.7.2.4 Motivation and Engagement

70% of students stated that they are engaged in the learning process and motivated more when using Edmodo. This finding Pachler et al. (2010) explains that as young people have increased accessibility to “functionally convergent digital media and mobile devices,” they are motivated by constructing meaning via these technologies.
On the other hand, one student explained that they did not think their attainment level in the subject would be affected either way by using Edmodo. Interestingly, despite this, the student did state that the subject was more engaging with the use of the application and that visualisation of what was being learned was easier. Leask (2001) argues that the role of the teacher is broadened beyond the classroom and the school. As school and home boundaries become ever increasingly blurred, today’s learners no longer distinguish between life at school and life at home. The two facets are merged into one and social networks are playing a key role in this. Boyd (2007) explains that public online domains are where social norms are set; teenagers’ social identity and way of life is defined by these. Edmodo is an online learning tool that seeks to reach out to all learners via the language and interface of Facebook.

Chapter 6
Conclusions and Recommendations

6.1 Introduction

The research focused on the use of a social learning network on teaching and learning of History at Junior Certificate level. The case study examined the origins of social learning networks and the relationship they have with mainstream social media culture. It looks at whether or not Edmodo enhances both teaching and learning and the implications this has on learning environments. A combination of quantitative and qualitative research tools were used to gather data.

The case study considers two research questions:

1. Why should teachers rethink their pedagogical practice in light of the emergence of Web 2.0 technologies?
2. What are the implications of social learning networks on teaching and learning of History at Junior Certificate level in a rural secondary school?

6.2 Summary of Findings
6.2.1 Internet Accessibility

Most students in this study have access to the internet at home. All students have internet access at school. They spend an average of 1-3 hours per day online. Students are online most at night time. They are online most at home. Social Networking sites are the most accessed of websites. There are contrasting trends between how students use the internet at school with that of home. The pattern of use at school centres on using Google as a search engine. The pattern at home shows an array of websites being accessed with social networks being accessed the most.

There is no correlation between how and when students use the internet at school with that of at home. At school is when students are disconnected. This suggests that the gap between internet use at home and use at school needs to be bridged. Social media and Web 2.0 technologies are an integral part of mainstream culture. This is consistent with the findings of the Norton Family Report (2010) and not surprising in the context of a Cisco White Paper (2008) on media consumption which included data on how “for many learners, class time is the only time in their day when they completely disconnect.” Levin and Arafah (2002) also reflect this finding stating that students’ education use of the internet occurs outside of the school day, outside of the school building and outside the direction of their teachers.

6.2.2 Appropriate use of Edmodo

This study examined the factors affecting students’ application to the social learning network. They adapted quickly to the user interface. However, students tended to use phonetic abbreviation in their writing, an issue associated with the texting generation of learners. The earlier stages of the study showed a gradual progression from this style of writing to a style that was more appropriate. This reflects the finding of the Literacy Trust (2009) who cited that technology is increasing children’s enjoyment of writing.

6.2.3 Attainment
The first conclusion of the study was that the attainment of students in both groups increased. However, the data indicated that students in the study group who used Edmodo performed better than the control group who used traditional teaching methods. The students in the study group averaged 9.25% better than those the control group. This marked a 11.75% swing when comparing this figure with the pre-test figure which showed the control group averaging, however marginal, 2.5% better than the study group.

The t test revealed that the study group showed a 53.75% increase in attainment in the post-test when compared with the pre-test score. The control group recorded a 42% average difference from the pre-test score. This reflects the 11.75% increase in attainment for the study group when compared with the control group.

While students in both groups increased their attainment scores from the figures recorded in the pre-test, the study group showed greater averages of improvement overall. The study suggests that using digital technologies facilitates for a more meaningful and effective learning experience. This is consistent with the findings of the NCCA’s discussion paper (2004) citing that “the persuasive use of ICT has significantly increased our capacity, as a society, to generate, manipulate, store, transmit large quantities of information cheaply and to communicate with others instantaneously.” Further to this, the paper foresees that “technological literacy will become a basic functional requirement for our work, social and personal lives.” These themes are reinforced further by the Alliance for Excellent Education Report (2012) which outlines that there is culture shift in the way students today learn. “To meet the needs of the diverse students’ population, the education system must provide a more personalised, rigorous and collaborative learning environment that moves from teacher-directed, one-size-fits all instructional strategies toward a learner-centred model.”

6.2.4 Learning Styles

The social learning network caters for all styles of learners. The multitude of visual stimuli, video, images, podcasts together with the interactive capability of Edmodo ensures that all learners are targeted. The Institute for Prospective Studies (2010) recommends the use of
Web 2.0 tools for “supporting individual learning processes by allowing learner preferences to be accounted for.”

6.2.5 Similarity with Facebook

Edmodo resembles Facebook’s interface and embodies many of the tools used by the Social Network giant including posting messages, uploading images, “chat-like” discussions, uploading and viewing videos and much more. The resemblance of Edmodo with Facebook gives it the appeal factor for students. Edmodo enables teachers to create closed networks with their students in a Facebook-like platform that virtually reproduces the classroom environment in many ways.

6.2.6 Motivated Learning

Students are motivated by the use of social media tools, digital media and mobile devices. The OECD (2001) examines aspects of the impact of information technologies on education. Its context is very relevant to looking at why students are motivated by technology. Information technologies has an persuasive impact on the education process – on learning environments, on empowering learners and the different ways of communicating.

6.3 Limitations of the Research

In light of the research carried out, there were a number of limitations than need to be considered.

- The research is limited to a small cohort of students – forty participants in total. The pre-case statistical analysis combined with the pre-test suggested that all students were similar in ability. One school in a rural demographic community was subject to the study.
- With exception to the pre-case data which represented an 18 month period, all other data was compiled over a short period of time, totalling 8 weeks.
Although some of the data was representative of seven subject areas, the study focused on one subject only.

The researcher works in the school as both teacher and ICT coordinator and is an advocator of Edmodo which has been rolled out to staff and students for 12 months prior to the study. There was a risk that the researcher would become subjective in terms of data collection and analysis.

While the literature on digital technologies and their implications on education is vast, there is a limited amount of research documented on the impact of social media networks on education and more specifically, how they have developed and evolved to target niche audiences, in this case, education.

It would be interesting to extent the study to a number of schools across a range of demographic backgrounds and across a range of subject areas at both Junior and Senior Cycle.

6.4 Recommendations for Future Research

The research has identified many areas in need of further investigation. In view of this, it is recommended that further research be undertaken in the following:

- The information age has changed the way people learn. Teachers need to evaluate and rethink education delivery. In doing so, curriculum needs to move forward and rebrand itself across every subject area; the integration of digital technologies should be at the forefront of education development.
- Research is necessary across a broader spectrum of students with variations in age, gender, ability, geography and demographics.
- Training in the use of digital technologies should be explicit in continued professional development.
- Social learning networks can be customised for students with special educational needs. Teachers and SEN staff need to communicate and collaborate over projects so that students of all abilities are catered for.
- How can we improve social learning networks? Research could be undertaken over a longer period of time in order to identify potential areas for development or improvement.


6.5 Conclusion

Since the arrival of the digital age, information technologies have become an integral part of mainstream culture. Since coining his term “Global Village” back in the 1960s, McLuhan could not have foreseen the extent to which his concept has become a reality. New ideas and information is being shared by people all over the world via digital media, notably, the Internet (Symes, 1995). Prensky explains that today’s generation of learners – the digital natives - know only to communicate using the digital language. Their growth and development has taken place in an environment saturated with computers, video games, media players, mobile devices and much more. The internet is redefining and changing how young people live in society. It offers new opportunities in the way education is delivered and has changed the very definition of the classroom. Social media shifts the emphasis from the content of the subject to the learning activities and human interactions around which that content is situated (Seely Brown and Adler, 2008). The 21st century learner demands that pedagogies change. An NCCA paper (2004) insists that education would be ignorant to ignore the rapid pace at which technologies are growing. Technological literacy is becoming a fundamental prerequisite for today’s workforce.

The emergence of social media networks or Web 2.0 technologies has provoked many in education fields to reflect and question the very nature of how they facilitate for effective teaching and learning in the 21st century. New technologies provide a platform for a more constructive form of learning where learners construct meaning through interaction and collaboration with others (Leask, 2001). The arrival of the two-way Web offers new opportunities for teachers to look beyond the walls of the classroom. Learning should not be restricted to the classroom but more so to all facets of life, at work, play and home. A Cisco White Paper (2008) reports that for many of today’s learners, time spent in school is the only time in their day when they completely disconnect. It is necessary to bridge the digital divide between school and home. The phenomenon that is social networking sites lends weight to their integration into teaching and learning. Social networking sites like Facebook, Twitter and YouTube are connecting people around the world. In the last decade, these networks
have evolved to cater for niche interests. Social learning networks have announced
themselves amidst an era of questionable change in education. It seems logical given that
learners today are communicating with their peers online via social networking sites.

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