Case Study: To Investigate Blogging as an E-learning Tool in Post-Primary Schools

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Declaration

I hereby declare that this thesis represents my own work and has not been submitted, in whole or in part, by me or another person, for the purpose of obtaining any other University award. I agree that the College may make this thesis available to future students.

Patty Conroy
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7th October 2011
Abstract

Case Study: To investigate blogging as an e-learning tool in post-primary schools by Patty Conroy.

The purpose of this case study is to investigate blogging as an e-learning tool. The era of e-learning has truly arrived. Educators have at their hands many free e-learning tools. It can be no longer the case of how information technology can be incorporated into the classroom but how effective each e-learning tool is to us as educators. Educators need to embrace e-learning combined with traditional teaching methods in order to engage and motivate our students most of whom were both after 1998.

The research case study involved students from two post-primary schools, a single sex school in county Kildare and a fee-paying school in south county Dublin. The county Kildare school students created and developed their own blog as part of their transition year and the fee paying school students accessed their schools science blog, which was created and developed by one of their science teachers. Two questionnaires were distributed to both schools, a focus group was conducted with students from the Co. Kildare school and both of the blog facilitators from each school were interviewed. The case study found that blogging is an effective pedagogical tool, students found blogging an effective way to learn but students do not use blogging as a communication device.
Dedication

This thesis is dedicated to my husband and two sons

Séamus, Seán and Niall Malone
Acknowledgements

I wish to express my sincere thanks to my tutor Catríona Lane for all her hard work and patience with me through out this study.

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<th>Full Form</th>
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<tr>
<td>CAI</td>
<td>Computer Assisted Instruction</td>
</tr>
<tr>
<td>CBLT</td>
<td>Computer Based Learning and Training</td>
</tr>
<tr>
<td>3D</td>
<td>Third Dimension</td>
</tr>
<tr>
<td>HCI</td>
<td>Human Computer Interface</td>
</tr>
<tr>
<td>ICT</td>
<td>Information Communication Technology</td>
</tr>
<tr>
<td>MTV</td>
<td>Music Television</td>
</tr>
<tr>
<td>MI</td>
<td>Multiple Intelligence</td>
</tr>
<tr>
<td>NCTE</td>
<td>National Centre for Technology in Education</td>
</tr>
<tr>
<td>RSS</td>
<td>Rich Site Summary/Really Simple Syndication</td>
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<tr>
<td>TV</td>
<td>Television</td>
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<td>TY</td>
<td>Transition Year</td>
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<td>WWW</td>
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Chapter 1 Introduction

1.1 Introduction and background

Educators are encouraged to integrate technology into their classrooms because today’s student is exposed to a multitude of digital devices in their daily life (Sawmiller 2010). In Prensky’s paper ‘Digital natives, digital immigrants’ he observes that today’s students are no longer the people our educational system was designed to teach. Today’s students represent the first generations to grow up with this new technology. Computer games, e-mail, the Internet, cell phones and instant messaging are integral parts of their lives. Today’s students may not be well suited to the more linear progression of learning but leap around as though the cognitive structures were they parallel (Richardson 2006). Our students today are all “native speakers” of the digital language of computers, video games and the Internet.

Prensky likens Teachers as Digital Immigrants. As Digital Immigrants learn – like all immigrants, some better than others – to adapt their environment, they always retain, to some degree their “accent”, that is their foot in the past. Our Digital Immigrant instructors, who speak an outdated language (that of the pre-digital age), are struggling to teach a population that speaks an entirely new language. Digital Immigrants do not believe that their students can learn successfully while watching TV or listening to music, because they (the Immigrants) can not Unfortunately for our Digital Immigrant teachers, the people sitting in their classes grew up on the “twitch speed” of video games and MTV. They are used to the instantaneity of hypertext, downloaded music, phones in their pockets, a library on their laptops, beamed messages and instant messages. They have been networked most or all of their lives. They have little patience for lectures, step–by-step logic, and “tell-test” instruction. Digital Immigrant teachers assume that learners are the same as they have always been, and that the same methods that worked for the teachers when they were students will work for their students now. But that assumption is no longer valid. Prensky finds it hard to distinguish which is harder “ learning new stuff” or “learning new ways to do old stuff” (Prensky 2001, p.5). Sawmiller (2010) best describes it by using the following scenario. When the three o’clock bell rings, students take out their cell phone and text their friends the whole way home. Upon arriving home, they sit down to their computer and log on to Facebook or MySpace to communicate electronically.
with peers. In school, students read and write almost exclusively paper. Student’s experiences at home are often at odds with their experiences at school. Student interest and familiarity with online communication can and should be incorporated into teaching.

1.2 Research topic

1.2.1 Research question

The overall aim of this study is to investigate blogging as an e-learning tool in post-primary schools.

The following objectives will be addressed:

- To investigate if blogging is an effective pedagogical tool.
- To explore blogging as a constructivist’s tool.
- To study Irish post-primary students as bloggers.

1.2.2 Research context

The research took place in two Post Primary Schools. School A is a single sex school in county Kildare and School B is a fee paying co-educational school in south county Dublin. In School A the Transition year (TY) students created and developed their own TY blog and maintained it over the academic year. In School B the Science Teacher has developed a science blog that aims to provide an online tool for the promotion of science within School B and across the country.

1.3 Relevance of the study

The era of e-learning tools in education has truly arrived. We have the Internet a little over 20 years now and Educators are teaching students born since 1998. There has been an investment of €92 million from 2009-2010 with the ICT in school programme in Ireland. Educators have at their hands free e-learning tools. Some of these as follows, Google Chrome, Wordpress, Blogger, Google Reader, Twitter, Gmail, Skype, Bubbl.us, Prezi, Snagit, Dreamweaver, Wiki, Youtube, Itunes, Moodle, Facebook and the numerous smart phone applications to name but a few. Michael Fisher (2009) calls it digigogy, a paradigm shift, where pedagogy is about methods to instruct, digigogy is about those methods but with a technical frame. Digigogy is
about reframing our methods in the future of instruction. Fisher sees a new way of learning, where there needs to be a tear down and rebuild of traditional teaching, where learning is a collaborative effort and roles are reborn. Learning is beyond the desk, beyond the walls and beyond the school. The new classroom is orbital, scenic and here. The researcher chose blogging as the e-learning tool to be investigated, as it is one of the free e-learning tools available to Educators. The now famous four letter word ‘blog’ first appeared in 1997 but 1999 was the turning point when Pyra Labs launched their Blogger software. There are now tens of millions of bloggers worldwide and every person can become a portal by creating their personal space on the web (Epic 2010).

1.4 Research methodology
The research was a small mixed methodology case study approach, combining qualitative and quantitative research methods. The participants for this research were 46 transitions year students in School A and 38 science students in School B. 10 students from School A in a focus group, a teacher (blog facilitator) from School A an a teacher (blog facilitator) from School B. The data collection tools used were a questionnaire, semi-structured interviews and a focus group.

1.5 Structure of the research study
Chapter one introduces the thesis. Its outlines the research question and the reason for choosing this study.

Chapter two reviews the literature in relation to blogging as an e-learning tool in post-primary schools. Three main areas of research as follows:-

- The learning theories of behaviourism, constructivism and multiple intelligence. It also investigates the learning theories in relation to the integration of technology.
- E-learning, the benefits of e-learning and blended learning.
- The final area reviews blogs, blogging, the educational benefit of blogging and finally blogging and student communication.
Chapter three focuses on the research question, which is to be addressed. It sets down the research objectives, the settings in which the research took place and the participants involved. The rationale is given for choosing the research methodology. The data collection tools are described. The terms reliability and validity of research are examined. The final section is the timeline in which the research was conducted.

Chapter four presents the findings from the case study. Both quantitative and qualitative data will be presented. The findings are analysed under three headings based on the research objectives. Firstly to investigate if blogging is an effective pedagogical tool, secondly to explore blogging as a constructivist tool and thirdly to research Irish post-primary students as bloggers.

Chapter five discusses the main finding as indicated in chapter four. The findings are discussed in relation to the literature reviewed in chapter two. The discussion is organized into three main headings, blogging as a pedagogical tool, blogging as a constructivist tool and finally Irish post-primary students as bloggers.

Chapter six presents conclusions from this study and gives recommendations for the future use of blogging and future research in this area.
Chapter 2 Literature review

This chapter will outline the literature reviewed by the researcher within the context of the research question. The first section investigated by the researcher is the main learning theories, namely, behaviourism, constructivism and the multiple intelligences. The researcher explored how these theories play a role in how technology is integrated into education. The researcher will then review the learning styles of individuals. In the following section, the researcher looks at the term e-learning and the benefits of e-learning. The next section is concerned with blended learning and hybrid courses. Next the researcher reviews why we as educators need to embrace e-learning. The final section is about blogging, what is a blog, blogging tools and blogging in education.

2.1 Introduction to learning theories

Forrester and Janzie (1998) maintain that learning is a personal act. They were of the opinion that we put our own identity on how we learn, what we learn and when we learn. Although on the face of it, learning is a very simple act, the root of understanding how we learn is not as straightforward. Rogers (1980) puts the learner at the heart of the learning process and learning is facilitated when the student actively participates in the learning process. In this learning process, Rogers clarifies that the learner has control over the pace, content and direction of learning. The learning theories are models of how we learn. Forrester and Janzie (1998) explain the spectrum of learning theories consist of many approaches or ways of explaining how humans learn.

2.1.1 Behaviourist learning theory

The Behaviourists (Pavlov, Watson, Skinner, Thorndike) explained learning in terms of the interaction of an organism with its environment, thus discounting the importance of internal mental events in the learning process. (Forrester and Janzie 1998). The behaviourist-learning model believe that learning is perceived as an outcome (Forrester and Janzie 1998). This learning outcome is achieved by using a teaching approach of direct instruction Classical behaviourism argues that certain stimuli will produce specific reactions in a human or animal e.g. Pavlov’s dog
Pavlov was a Russian scientist who studied reflexes. He noted that a dog drooled without the proper stimulus. Every time the dogs were served food, the person who served the food was wearing a lab coat. Therefore, the dogs reacted as if food was on its way whenever they saw a lab coat. This learning theory of Behaviourism is marked by observable indicators that learning is taking place i.e. tests. Behaviourists see learning as a sequence of stimulus and response actions in observable cause and effect relationships Watson (cited in Forrester and Janzie 1998). Skinner noted that automatic behaviour is either strengthened or weakened by the immediate presence of reward or punishment. Skinner’s (1968) belief was that new learning occurs as a result of positive reinforcement and old patterns are abandoned as result of negative reinforcement. In Skinner’s view exams are used to measure observable behaviour. The ease of teaching using the behaviourist model is stated in Gibson (2001) “this style of teaching is predictable, comfortable and controllable” (Gibson 2001, p. 41).

2.1.2 Constructivist learning theory
Howard et al (2000) identified the constructivist-learning model as emphasising the creation of active learning environments; these environments, they observed should permit critical thinking, discovery and collaboration. Constructivism is something of an antithesis to behaviourism, in as much as it focuses squarely on the mind, and the learning processes of the brain (Holmes and Gardner 2006). Forrester and Janzie (1998) had a similar view of constructivism one that focuses on a learner’s ability to mentally construct meaning of their own environment with different degrees of non-directed learning. Theorists that are associated with constructivism are Dewey, Vygotsky, Piaget & Papert (Holmes and Gardner 2006). The constructivist learning theory sought to improve on what behaviourist learning theory had already established by focussing on the motivation and ability (Forrester and Janzie 1998). They noted that behaviourism is too teacher centred and directed. Educators argued that behaviourism was void of meaningful learning. Constructivists believe that all humans have the ability to construct knowledge in their own minds through a process of discovery and problem solving. Papert believed that children have the ability to construct meaning of their world. He argued that teaching should be carried out in such a way as to produce the most learning for the least teaching; this ideal has its challenges, which are identified by O’Reilly (1997). O’Reilly outlines that not all
learners have the same learning styles and learning goals, and these learning styles and goals have profound implications for software designers (O’Reilly 1997).

The work of Vygotsky, Mead, Lave and Engestrom suggests that the interaction of the self with others is a critical component of the learning process. Vygotsky cited in Daniels (2001) believes that schooling is an elaborate form of sociocultural activity. This understanding invokes a broadly based conception of pedagogy. Vygotsky’s work provides a framework within which support for pupil learning and the positioning of pupils within specific discourse structures may be explored. Social relations who serve to mediate processes of individual transformation and change are pedagogic relations (Daniels 2001). Vygotsky’s theory is based around the Zone of Proximal Development (ZDP). The ZDP is about ‘can do with help’, not as a permanent state but as a stage towards being able to do something on their own. The key is to ‘stretching’ the learner is to know what comes next, for them.

![Figure 2.1 Vygotsky’s Zone of Proximal Development](Educational Origami 2011)

Vygotsky (cited in Cole et al 1978) believes learning is more than the acquisition of the ability to think; it is the acquisition of many specialised abilities for thinking about a variety of things. Vygotsky’s opinion is that learning does not alter our overall ability to focus attention but rather develops various abilities to focus attention on a variety of things.

Gerber (2007) identified that collaborative learning is a mediating theory of social constructivism because interaction is an aspect of the construction of knowledge. This collaborative learning is often equated with group work.
Communal constructivism is an approach to learning in which students construct their own knowledge as a result of their experiences and interactions with others, and are afforded the opportunity to contribute this knowledge to a communal knowledge base for the benefit of existing and new learners (Holmes and Gardner 2006).

2.1.3 Multiple intelligences learning theory

The theory of multiple intelligence provides a more holistic view of the intelligence of humans. In Forrester and Janzie (1998) the theory of multiple intelligences associated with Howard Gardner identified seven different intelligences.

1. Linguistic intelligence. A child is verbal/linguistic if they love words and enjoys reading, writing and story telling.
2. Logical-mathematical intelligence. A logical-mathematical child is more interested in concepts, numbers and scientific exploration.
5. Bodily-kinaesthetic. A bodily-kinesthetic child needs to move and touch to learn.
6. Interpersonal intelligence. An interpersonal child learns best with other people around.
7. Intrapersonal intelligence. An intrapersonal child gets more out of being left alone to learn.

(Gardner 1983)

Gardner views multiple intelligences (MI) as an educational tool and not as a goal. He makes two claims. The first claim is that all human beings have all of these intelligences. It is part of our species definition. The second claim is that, both because of our genetics and our environment, no two people have exactly the same profile of intelligences, not even identical twins, because their experiences are different. This is where we shift from science to education. If we all have different kinds of minds, we have a choice. We can either ignore those differences and teach everybody the same material in the same way and assess everybody in the same way, or we can say, people learn in different kinds of ways, and they have different intellectual strengths and weaknesses. He is a proponent of teaching for
understanding, which means going deeply into topics so that students can really make use of knowledge in new situations. He suggested that we can provide analogies and metaphors for different domains, invading different intelligences, and finally, that you can present the key ideas in a number of different languages or symbol systems, again activating different intelligences.

(Stefanie Weiss 1999)

2.1.4 Motivational theory
According to Brophy (1999) motivation to learn is a competence acquired through general experience but stimulated most directly through modelling, communication of expectations, and direct instruction or socialisation by significant others (especially parents and teachers). Students need to feel that they are individuals, with their needs and interests taken into account, rather than just being a member of a group. To be a competent model that motivates students, teachers need to create an atmosphere of challenge, and Deborah Stipek et al (1998) notes to a very large degree, students expect to learn if their teachers expect them to learn. Teachers need to communicate to their students that they anticipate that they can achieve. Students tend to internalise the beliefs teachers have about their ability. Generally they rise or fall to the level of expectation of their teachers; when teachers believe in students, students believe in themselves. When those you respect think you can, you think you can (Raffini 1993). Educators need to provide the necessary academic and emotional support to encourage intrinsic and extrinsic motivation to learn. The classroom climate is important, if students experience the classroom as caring, supportive place where there is a sense of belonging and everyone is valued and respected, they will participate more fully in the process of learning.

2.2 Learning styles
Not only are there different learning theories, but individuals also learn differently. Perhaps the most influential researcher in the consideration of adult learning styles is David Kolb. Honey and Mumford (1992), building on the work of Kolb, describe learning styles as the attitudes and behaviours that determine an individual's preferred ways of learning. They propose four styles; Activist, Reflector, Theorist and Pragmatist that are directly associated with the four elements in the Learning Cycle.
Drawing on the ideas of Lewin, Dewey and Piaget, Kolb conceived the term ‘experiential learning’ In Kolb’s work, the way in which individuals learn can be described through the four elements in the Learning Cycle model. This four-stage experiential learning cycle was based on the work of Lewin, and focuses on the requirement of the individual to experience based on reflection, theory building, testing and new experiences (Kolb et al 1974).

The following model based on Kolb et al (1974) provides an illustration of how learning interventions can fit the cycle. For effective learning to take place, all four elements of the Learning Cycle have to be present i.e., the concrete and the abstract.

**Figure 2.2 Kolb’s Learning cycle model**
In Kolb’s learning cycle, learning is perceived as a process not an outcome. It is a continuous process grounded in experience — knowledge is derived from and tested out in the experiences of the learner. Learning is perceived as involving transactions between the person and the environment — learning is not merely something that goes on within the person. Learners use their personal experience and social experience to compound the learning, thus it is an active, self-directed learning process, and the learner can relate the learning experience to their goals and reconcile expectations with experience. Experiential learning does not concentrate solely on classroom events, rather on all life situations where learning may take place. This is an important factor in e-learning, as these components will have to be driven by the learner themselves. If the learning experience is an asynchronous one, then they may not have the advantage of peer groups to share the learning and subsequent experiences to facilitate both the abstract conceptualisation and active experimentation stages of the cycle.

Kolb used these four styles (Activist, Reflector, Theorist and Pragmatist) to formulate the Learning Style Inventory, which measures the individual’s personal emphasis on the four elements of the learning process. Learning has suffered from being too tied to formal instruction. All of the research points towards an obvious truth, that most learning does not take place as the result of formal instruction. Teaching is not a necessary condition for learning and most learning is through informal learning, without the conscious intervention of a formal teacher.

2.3 The role of learning theories and the integration of technology in education

Strommen and Lincoln (1992) pose the question “How do we educate the ‘new child’, raised in a world of instant information, where interactive technologies have led them to believe they can act on the world with the press of a button?” Papert’s view was like any other tool, a young child may use a computer wisely or badly (Papert 1993) and therein lays the challenge for educators, learning theorists and software developers.
At a ‘Transformative’ level ICT changes the nature of what is possible either in the learning domain or by helping the learner to do something that would not be possible in any other way

(Cook 2003, p. 37)

Eklund (2006) describes this integration as incorporating technology in a manner that enhances students learning. He observed different teachers integrating technology with varying styles. Some teachers choose to maintain a tight control over students, while other teachers are comfortable allowing students to work independently and select software according to student needs.

2.3.1 Behaviourist learning theory and the integration of technology

In the 1990s educational software development was strongly influenced by behaviourist principles and generally manifested as structured exposition of information, followed by testing with immediate feedback. Holmes and Gardner’s belief is behaviourism underpins educational and e-learning theory (Holmes and Gardner 2006). O’Reilly (1997) illustrates that behaviourist-learning theory supports the formal, hierarchical approach to software design. The task is broken down into its basic components, which are learnt. Complex tasks are attempted once the learner has mastered the simple steps. The first attempt at applying learning theory to educational technology was B. F. Skinner’s development of teaching machines. This was the idea of developing curricula to such a detail oriented level that, in effect, a learner could learn without error. Skinner’s approach was to supply the learner with small pieces of information sequentially to build to a complex skill. This behaviourist concept also underpins much of today’s e-learning tools example of this are the trial and error quizzes e.g. www.scoilnet.ie/Quiz

Skinner’s approach to software design is evident in Computer Assisted Instruction (C.A.I.). Forrester and Janzie (1998) found that this C.A.I has become a prominent tool for teaching, using the behaviourist approach; according to them C.A.I is an “effective way of learning”. The drill and practice approach is used to learn new concepts or skills. Educators have found C.A.I as an effective teaching approach because it allows for self-paced instruction and it frees teachers from direct instruction of all their students so as to focus on those students with particular needs. Chou, H (2001) study on cognitive style and training showed that the behaviour-modelling
training method is superior with respect to learning performance and computer self-efficacy. This study also confirmed the contingency effects of gender, cognitive style, training approach, and training objectives on behaviour.

2.3.2 Constructivist learning theory and the integration of technology

Strommen and Lincoln (1992) outlines the focus of constructivism is that the child is the self-governed creator of knowledge. O’Reilly (1997) agrees with this view that technology offers the instructor the opportunity to individualise, placing the learner in the centre of the learning experience. According to Strommen and Lincoln, computers, video, and other technologies engage children with the immediacy they are used to in their everyday lives, and lends it to a new pedagogical purpose (1992). This new pedagogy is in keeping with the constructivist learning theory that children will experiment, will manipulate and test ideas, children will receive direct, concrete feedback about the accuracy of their ideas as they work them out. Strommen and Lincoln (1992) explain both play and exploration are self-structured and self-motivated processes of learning. Indeed play and experimentation are powerful forces in the development of the individual mind, but Strommen and Lincoln believe that constructivism has led to the additional discovery that powerful gains are made when children work together. When they work together they share their ideas instead of working on their own, which is very labour intensive.

Vygotsky linked our cognitive development directly with social development. This scaffolding theory is building on what the learner knows. Wood (1994) sees evidence of Vygotskian theory (the interaction between novices and experts) establishing itself within the concepts of the developers of newer educational technology. In a practical application of the theoretical model, e-learning systems use e-mentors to facilitate learning, and chat or discussion forums to enrich the learning experience.

Chou et al (1993) in their study demonstrated that learning environment will be composed of students seeking to pursue individual questions and then coming together to coordinate their result. Cooperation will follow the natural need to understand. Gibson (2001) concurs with this notion of collaborative learning; learners solve problems through enquiry, trial and error. Investigations often lead to solutions in their view. This learning appears to be untidy and often chaotic.
Angers (2004) also maintains that the use of hypermedia systems exemplifies constructivist approaches to learning, where learning is regarded as the formation of mental models or “constructs” understanding by the learner. In his view, the students actively build knowledge based on previous understanding by dynamically interacting with the learning media. This learning or success is reliant on the interest, intelligence and ability of the learner to make decisions about lesson sequence, timing and emphasis. This ideal will produce the most learning for the least teaching, in keeping with Papert’s view. This view is that students will construct their knowledge and students will converge with discussion. Papert’s ideal will be achieved with the use of the computer as an educational tool. Computer technology is an excellent means of anchoring learning to meaningful experiences (Papert 1993). To achieve this meaningful learning requires educational reforms so as to produce motivated learners, critical thinkers, problem solvers and metacognitionists.

Howard et al (2000) suggest that success is not solely the result of effective technologies; rather that success maybe partly dependent on teachers using a constructivist learning model. In Barbuto’s et al (2003) training program on how technology is transforming teachers, one outcome was that teachers began to apply constructivist ideas related to computer activities to other areas of their professional practice. Teachers rearranged classrooms, re-invented learning centres, and modified their interactions with children. Forrester and Janzie (1998) maintain that multimedia at its best, allows us to bring the real world to the learner through the use of sound and video. They explain that contemporary multimedia platforms allow a greater degree of learner control and more freedom for the learner to undertake self-directed exploration of the material and self-paced learning. The disadvantage as given by Forrester is that multimedia is bimodal and lacks the stimulation that the natural environments provide. This may also reduce the interaction with other learners. Forrester and Janzie (1998) identified that there is still a need for human interaction and emotional support.

The ideal constructivist-learning environment may lie within 3D virtual technology. Duan & Jiang (2008) study on 3D study environment has developed successfully the ideal environment of education using the constructive theory. Rappa et al (2009) have
also created an environment where young people learn by incorporating role play using the virtual world, of second life.

2.3.3 Multiple intelligence and the integration of technology
The computer as a learning tool has enormous potential in developing the different forms of intelligence identified by Gardner’s theory. The use of technology appeals to this view of intelligence in that Gardner’s theory acknowledges that cognition is not a linear process. In particular by exploring various websites one can engage the MI theory.

- Websites which teach language, typing and editing can engage the Linguistic intelligence.
- Science and mathematical websites can enthuse the Logical-Mathematical intelligence.
- Websites that offer personal development can assist the Intra-Personal intelligence.
- Websites that offer online chat can engage the Inter-Personal intelligence.
- Websites that allow the download of music or access to music videos will certainly enthuse the Musical-Rhythmic intelligence.
- The actual use of the computer, the navigation through various websites will motivate the Bodily-Kinaesthetic intelligence and Visual-Spatial intelligence.

Other developments to cater for the seven intelligences in line with Gardner’s theory are children’s multimedia electronic textbooks. Great emphasis is placed on the content of each page and the activities involved in making sure interaction and learning occur. This model is defined in terms of structure and content presentation. (Shiratuddin and Landoni 2001).

2.3.4 A combined learning theory for the integration of technology
Constructivist software is assumed to mean simply the use of multimedia and/or hypertext. Constructivist computer based learning supports the building of knowledge through interaction and activity that involves at least the mental construction of concepts. O’Reilly (1997) argues that the roots of designing effective Computer Based Learning & Training (CBLT) can be found in behavioural and cognitive theories. In designing CBLT programs, the pedagogical dimensions found in the differing learning theories can act as guideline, questioning the validity of decisions.
He identifies the opposing nature of behaviourisms and constructivism as the dual of ideal versus real, mind versus body. This in turn creates implications for software designers; not all learners have the learning styles or learning goals that converge with those of the designer. The second obstacle to reconceptualizing education practice is the absence of new forms of assessment with which to measure the effectiveness of the new forms of classroom learning being developed (O’Reilly 1997). A third way lies somewhere between instructivism and constructivism, a constructivist environment with instructivist scaffolding, designing a teaching method that is highly flexible and can be used with other tools, lectures, discussion groups (McKenna and Laycock 2004; Pear and Crone-Todd 2002). In turn combining social constructivism with other tools may produce the best of all socially constructed educational worlds.

Clements 1994 (cited in Barbuto et al 2003) found one of the main criticisms voiced by educators on the various learning theories was that they lacked a coherent framework given the facets of educational procedures, curricula and the series of subjects. The challenge of integrating technology within the curriculum needs time, practice and support, and often calls for a radical shift in one’s teaching strategies.

2.4 E-learning

2.4.1 What is E-learning?

E-learning is generally taken to mean the use of computers and the internet for learning and teaching. (Guri-Rosenblit 2005; Littlejohn and Pegler 2007). Online learning; or e-learning (terms that are often used interchangeably), can be used as an effective means to encourage articulation, reflection and social negotiation (Lambe 2007). The term was initially used within the corporate sector to describe computer based training or online training. The term e-learning was first seen in education in 2002. E-learning still is a relatively new phenomenon and the use of electronic media can be for a variety of learning purposes that range from add-on functions in conventional classrooms to full substitutions for the face-to-face meetings by online encounters (Guri-Rosenblit 2005). E-learning offers new opportunities for both the educator and the learner to enrich their teaching and learning experiences through virtual environments that support not just the delivery, but also the exploration and application of information (Holmes and Gardner 2006). E-learning environments
provide collaborative work spaces that include information resources and tools to do work alone and with others, keep track of assignments, diagnose learning needs, provide feedback, and assess learning outcomes (Wilson 2004).

**Figure 2.3 Overlapping theory underpinning of e-learning**

(Holmes and Gardner 2006, p.7)

### 2.4.2 The benefits of e-learning

E-learning can greatly enhance the quality of the education through:

- Contribution to an evolution in the way students learn.
- Enriching and extending the learning experience of students.
- Providing powerful tools for learners to exploit the World Wide Web.
- Contributing to the evolution of theories of learning.
- Opening up learning to students who might otherwise be restricted through disadvantage or impairment (Holmes and Gardner 2006).

It is learning that allows the learner to choose how to learn, when to learn and what to learn as far as possible within the resource constraints of any education and training
provision. This how, when, where and what philosophy is echoed in what is frequently referred to as the ‘Martini’ effect in e-learning, that is, anytime, anyplace, anywhere, and is one of the key benefits of this type of learning in that it gives autonomy to the learner – they now own their learning options. The learner needs clear signposting of where the learning is going, but the programme must be flexible enough to allow them to ‘cherry-pick’ what it is that they need to learn right now.

The main benefits of e-Learning are summarized by Rosenberg in Table 2.1 below.
## Benefits of e-learning

<table>
<thead>
<tr>
<th>Cost Reductions</th>
<th>Whilst the initial investment is high, there are proven savings on travel, accommodation and expenses, reduction in time for training, eliminates need for training suites, labour cost savings etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhances business responsiveness</td>
<td>Ability to reach an unlimited number of employees simultaneously, ensuring rapid assimilation of required message, but cultural and language issues do need to be addressed.</td>
</tr>
<tr>
<td>Delivers consistent or customized messages based on requirements</td>
<td>Uniformity of delivery, or ability to customise to individual country requirements or standards, however there is sufficient flexibility within systems to have personalised learning experiences for each learner.</td>
</tr>
<tr>
<td>Content is more timely and dependable</td>
<td>Immediate updates, if required to content as is web-based and immediate distribution thus ensuring currency of material for all.</td>
</tr>
<tr>
<td>Learning is 24/7</td>
<td>Anytime, anywhere access, thus ensuring that an organisations learning interventions can be deemed truly global. Learners must now be able to analyze and store information, to find that which is useful to them to improve their performance.</td>
</tr>
<tr>
<td>Autonomy</td>
<td>Gives employees autonomy over their training schedules</td>
</tr>
<tr>
<td>No user “ramp-up” time</td>
<td>Due to the global presence of the Internet, and familiarity with browsers, learning to access e-learning is no longer an issue.</td>
</tr>
<tr>
<td>Universality</td>
<td>Because the learning products are web-enabled, everyone on the web can receive the same material in the same way</td>
</tr>
<tr>
<td>Builds Community</td>
<td>Enduring communities of practice can be established, where knowledge is shared, thus enhancing the idea of the learning organisation.</td>
</tr>
<tr>
<td>Scalability</td>
<td>e-Learning solutions are now highly scalable, and once the initial infrastructure is in place, costs should be minimised, with the return on investment including points made in row 1</td>
</tr>
<tr>
<td>Individual Learning</td>
<td>Through the combined use of bookmarks, records of previous training and education, a profile can be developed for the individual learner, and subsequent learning interventions tailored to specific needs.</td>
</tr>
<tr>
<td>Return on Investment Measurement</td>
<td>Through use of performance trackers (e.g. tests and on-line questionnaires) the effectiveness of the learning intervention can be monitored by management. Also the usage can be tracked through number of downloads such that managers can evaluate the cost-effectiveness of each module.</td>
</tr>
<tr>
<td>Retainable</td>
<td>The smaller and more relevant the learning, then the easier retention will be</td>
</tr>
</tbody>
</table>

**Table 2.1 Benefits of e-learning**

Holmes and Gardner propose that models of online learning that encourage learners to seek out information, evaluate it, share it collaboratively and ultimately transform it into their own knowledge will provide the best e-learning spaces, see figure 2.4. The typical e-learning environment, constituting a macro shell with some links to the outside and usually richer resources within, undergoes continuing revision depending on the uses and contributions of various groups and individuals (Wilson 2004). Holmes and Garner (2006) consider e-learning as a transformative technology. E-learning has also been considered an innovative tool to bring pedagogical changes to conventional education (Jung 2010). It has the capability of catalyzing major changes in education and indeed society more generally.

There is much to construct and much to learn and we believe that education will ultimately adopt and adapt to a communal constructivist approach, an approach that will be comprehensively facilitated by e-learning. (Holmes and Gardner 2006).

Figure 2.4 A flower petal framework for e-learning practices.

(Holmes and Gardner 2006, p3)
2.4.3 Blended learning

As mobile learning, or m-learning, enhances Internet access and collaborative learning, it will lead to an increase in blended learning. Blended learning is the integrated combination of traditional offline methods of learning (such as classroom-based sessions, coaching and practical on the job training) with web-based, online approaches. The online or e-learning elements include stand-alone interactive learning modules ('learning objects'), web-based just-in-time information, asynchronous communication (threaded discussions, e-mail-based mentoring and tasks) and synchronous sessions (the virtual classroom for ongoing briefings and updates or, in some cases, to replace some of the class-room elements). The degree of integration can vary greatly. Lambe defines blended learning “as the combination of the following pedagogical approaches, problem-based learning, face-to-face classroom based learning and e-learning” (Lambe 2007, p.360). At one end of the “blended” scale, the face-to-face elements might remain fundamentally unchanged and the e-learning solution simply complements the existing delivery methods. At the other end of the scale, a complete blended solution, all of the face-to-face elements are redesigned and are linked seamlessly with the online components (EPIC Group 1999; Littlejohn and Pegler 2007). E-learning is only part of the approach, being blended perhaps with traditional approaches as blended learning (Littlejohn and Pegler 2007). For effective learning it is important that students are actively involved and are motivated by what they are asked to do. E-learning has the potential to do this but there is a need for educators to blend e-tools and e-resources with e-activities. (Littlejohn and Pegler 2007). In Littlejohn and Pegler’s view, there needs to be a rich and considered balance if e-learning is to offer a valuable, new and different teaching approach. In Littlejohn and Pegler’s (2007) opinion the key to success is to move away from thinking how to integrate different sorts of content resources and towards developing educational processes that ‘blend’online with face-to- face interactions. Blogs can also be used within a blended learning solution as a way for students to maintain and share a learning journal.
2.4.4 Hybrid courses
The hybrid course is a form of blended learning. Guri and Rosenblit (2005) conducted a large study titled “‘Distance education’ and ‘e-learning’: Not the same thing”, at UC Berkeley from September 2000 to June 2002 on the use of technology in higher education. Guri and Rosenblit found that 84% of the students indicated that they prefer to attend face-to-face encounters, even though they could have studied all the materials, conducted all of the experiments and watched the video-taped lectures at home. From this Guri-Rosenblit (2005) concluded that hybrid courses, combining various components of face-to-face encounters with online provision would emerge as a growing pattern in academic institutions. In fact they found that most students enjoy attending the physical campus and meeting their peers in the framework of classrooms, lecture halls and seminar rooms for reasons that go far beyond the acquisition of knowledge and skills (Guri and Rosenblit 2005). Lockard and Pegrum (2007) also found the hybrid course combines the connectedness of the classroom with the content richness and the flexibility of the virtual learning environment. Combining the strengths of both models provides highly effective learning experiences, as students are neither passively absorbing mass-oriented content nor learning in individual isolation.

2.5 Educators and e-learning
2.5.1 Introduction
Students are growing up immersed in digital media, which they use for entertainment, communication, learning and even shopping. Increasingly these Internet generation learners will demand that schools are technologically relevant and provide technology-rich learning environments (Goh 2010; Kim 2010). Dr Horn of Irish computer company Iona Technologies says it is time for teachers to seize the initiative and use the Internet to their advantage as a shared community resource.

Today the situation has changed irrevocably. Teachers are, of course, still fine people, but many students no longer accept their teachers as the prime source of information and knowledge. The Internet, and in particular Google, is now the primary way to find out and learn.

(Horn 2009)
2.5.2 Teachers and technology

In Baek’s study 2008 ‘What makes teachers use technology in the classroom?’ discovered six factors influencing teachers’ adoption of technology in the classroom, 
1. Adapting to external requests and others’ expectations.
2. Deriving attention.
3. Using the basic functions of technology.
4. Relieving physical fatigue.
5. Class preparation and management.
6. Using the enhanced functions of technology.

It would appear that teachers use technology not for the benefits of their students but to adapt to external pressures or to make their job easier as in class preparation and management.

2.5.3 The Internet: tool or toy

Computers and the Internet have been introduced as powerful tools and as rich information resources for academic work and life in general. Researchers and classroom teachers often observe that youngsters seem to prefer the Internet’s “play” factor to the Internet’s “task” factor. In other words, youngsters seem to perceive the Internet as a major entertainment device akin to television. Chou et al study was based on a five-strand framework of the uses of the Internet,
1. Tool.
2. Toy.
3. Telephone.
4. Territory.
5. Treasure of Information.

In this study, the Internet as a tool helps people perform various tasks (e.g., helping to do homework, learning/using applications); the Internet as a toy enables users to play (online) games; the Internet as a telephone enables users to communicate with other users; the Internet as a territory allows users to present themselves online, and the Internet as treasure of information represents the collection of online information.

This piece of quantitative research was based on 2579 returned questionnaires from students aged 10-12 years. Chou et al (2009) found that educators, administrators, and policymakers may assume that students can benefit from Internet-connected classrooms that constitute information rich and easy to access learning environment.
Teachers who understand students' Internet-related attitudes should possess valuable information about how to improve student learning in Internet-based instruction. Chou et al. study shows that the age of Web 2.0 has truly arrived: the Internet is no longer considered to be only for downloading and reading information, but also for creating, uploading, and sharing (personal) information. Therefore, the significance of the territory factor and related attitudes becomes more prominent in this study.

2.6 A blog

Since 1999, the blog has become a pervasive communication and information-sharing Internet tool in certain segments of our society. Within education, it is becoming much more widely used and will continue to expand rapidly as instructors learn about its adaptability for the classroom (Quible 2005). A "Blog" is an abbreviated version of "weblog," which is a term used to describe web sites that maintain an ongoing chronicle of information (www.blogger.com). A blog is a frequently updated, personal website featuring diary-type commentary and links to articles on other websites. This otherwise quite organic and unstructured format of delivering information via the World Wide Web (WWW) came to be known as ‘blogging’, after ‘weblog’ was abbreviated to ‘blog’ Jacobs 2003 (cited in Jacobs 2004, p.1). A weblog is essentially a web page ‘logging’ hyperlinks to websites, which a web-surfer finds interesting.

A blog is primarily a website that is frequently updated with new posts. A RSS is a feed with which readers of a blog can subscribe to, to keep track of new posts in the blog. (Huann et al 2005, p.1).

Stowe Boyd (2003) cited in Ferdig 2007 defined it as “software that supports conversational interaction between individuals or groups, offers opportunities for social feedback, and supports social networks”. (Ferdig 2007, p.6). Blogs range from the personal to the political, and can focus on one narrow subject or a whole range of subjects. Many blogs focus on a particular topic, such as web design, home staging, sports, or mobile technology. Some are more eclectic, presenting links to all types of other sites and others are more like personal journals, presenting the researcher's daily life and thoughts. Blogs are based on the reverse chronological posting of news items,
invariably containing hyperlinks to third party sites, and an opportunity for readers to enter personal responses to articles.

Blogs tend to have a few things in common:

- A main content area with articles listed chronologically, newest on top. Often the articles are organized into categories.
- An archive of older articles. A blog is also a good way to keep track of articles on a site. A lot of blogs feature an archive based on dates (like a monthly or yearly archive). The front page of a blog may feature a calendar of dates linked to daily archives.
- A way for people to leave comments about the articles.
- One of the most exciting features of blogging tools are the comments. This highly interactive feature allows users to comment upon article posts, link to your posts, comment on and recommend them. These are known as trackbacks and pingbacks.
- A list of links to other related sites, sometimes called a "blogroll".
- A blogroll is a list, sometimes categorized, of links to webpages the researcher of a blog finds worthwhile or interesting. The links in a blogroll are usually to other blogs with similar interests.
- One or more "feeds" like RSS, Atom or RDF files. A Feed is a function of special software that allows "Feedreaders" to access a site automatically looking for new content and then post updates about that new content to another site. This provides a way for users to keep up with the latest and hottest information posted on different blogging sites. Some Feeds include RSS (alternately defined as "Rich Site Summary" or "Really Simple Syndication"). A RSS feed is a source of information that is regularly updated, and the updates are fed to readers through their RSS aggregators. All you have to do with these feedreaders is to add the link to the RSS feed of all the blogs you are interested in. The feedreader will then inform you when any of the blogs have new posts in them. Most blogs have these "Syndication" feeds available for the readers to use.

Traditionally we have used search engines to find the information. Today with with RSS, we are training the information to find us (Warlick 2005).
2.6.1 Blogging tools

Commonly used blogging tools include: Blogger, Wordpress, and Edublogs. The technology involved is easy to use. Blogs can be updated anywhere. A blog is generally not restricted to one computer. It is possible to update a blog from any computer with an Internet connection. They are easily searchable. Any article written is automatically searchable. With traditional web sites, this is not an automatic feature. Blogs are designed to be easy to use and with only two or three clicks, one can have a fully functioning web site. They easily support video, audio and other media and file types therefore creating a very dynamic learning experience and supporting various learning styles (Bragg-Barlett 2003).

2.6.2 Examples of blogs in education

Here are some examples of blogs in education in Ireland.
http://www.frogblog.ie
http://www.anseo.ie
http://www.carloweducatetogether.ie/home/
http://www.sccenglish.ie/
http://pdonaghy.edublogs.org/
http://www.sciencedaily.com/

2.6.3 Blogging and education

Many schools are seeing the educational benefits of blogging. Teachers are mainly creating subject specific blogs or blogs documenting a particular project. They are dynamic rather than static. This means that information is archived automatically and when the web site is updated, older updates are moved down the list without the user needing to do anything. Most blogs allow users to comment on individual articles. The key to the popularity of blogs, it seems is the scope for interactivity. The nature of blogging engines allows for the creation of a legitimate warehousing of captured knowledge, and archiving for later retrieval. (Jacobs and Williams 2004). Blogging then supports the internalization of knowledge by allowing students to look back at their archived posts and reflect on what they have written and the comments provided by their peers or teacher. By blogging, students are required to read information, filter through the relevant pieces, restructure the information, organize it, and determine a meaningful way to write about it. All of these activities foster critical thinking.
Spending more time on the writing process helps ensure that reflection and analytical thinking skills are at work (Sawmiller 2010).

Churchill’s (2009) study of using blogs to support teaching and learning demonstrated that blogs can be effective educational technology and useful blog based activities for learning are:
1. Reading blogs of others.
2. Receiving comments.
3. Previewing tasks of others and reading feedback received in relation to these.

(Churchill 2009)

With the use of technology and a blog, the home can now become an extension of the classroom and a place where every student gets an equal voice. (Sawmiller 2010; Flatley 2005; Quible 2005).

2.6.4 Blogging and constructivism
A weblog is a democratic tool that supports different learning styles (Richardson 2006). The aim is usually to provide a more collaborative and interesting learning experience. Learner blogs written by the learner can of course be used to improve reflection and retention. They encourage higher order skills such as reflection and analysis but also encourage reading, writing and collaboration. Constructivists believe that all humans have the ability to construct knowledge in their own minds through a process of discovery and problem solving. Hiler believes that blogging is a collaborative activity, this allows for knowledge sharing, reflection and debate (2002). Richardson (2006) asserted that weblogs are truly a constructivist tool for learning and they truly expand the walls of the classroom. Wang & Hsua (2008) identifies the collaborative approach of blogging, it enables users to exchange ideas and to share experiences. Weblogs seem especially well suited to constructivist learning due to the impact of reflection of one’s own work and thus continuous engagement with the learning content (Safran 2008; Granberg 2010; MacBride and Luehmann 2008). Weblogs seem especially promising as tools to support collaborative and reflective learning in post-primary schools. Blogging is a potentially engaging and valued means of communication among teens; it seems especially worthwhile to consider the
potential of using blogs in secondary school instruction (MacBride and Luehmann 2008).

2.6.4.1 Blogging and Vygotsky’s theory
Huann et al (2005) put forward the idea that the pedagogic use of blogging is grounded in Vygotsky theory; it offers the student the opportunity to surface their ideas in a social plane. The ability to comment on these ideas enables individuals to participate in social construction of knowledge. As the socio-cultural perspective on learning has developed, the notions of learning and reflection have broadened in context, involving not only our individual minds, but also our social and cultural environments (Granberg 2010).

Reflection is seen as essential to the learning process. John Dewey 1910, cited in Deng and Yeun (2010) defined reflection as “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light if the grounds that support it and the further conclusions to which it tends” (Deng and Yeun 2010, p. 443). Blogging can lend itself to an online reflective diary. This diary type commentary or ‘reflective journal holds potential for serving as a mirror to reflect the student’s heart and mind’ (Brand and Hubb 2005). Carl Rodgers (1980) voiced ideas that support the use of journals as a tool for learning, personal growth and professional development. The only learning, which significantly influences behaviour, is self discovered, self appropriated learning. The reflective journal can be a vehicle for the student to define, question and interact with content, concepts, ideas, values, beliefs and feelings (Brand and Hubb 2005).

The function of reflective thought is, therefore, to transfer a situation in which there is experienced obscurity, doubt, conflict, disturbance of some sort, into a situation that is clear, coherent, settled and harmonious”. (Dewey 1933, p.25)

Ferdig and Trammel (2004) observe that there will be a natural tendency for reflection and analysis on the part of contextualization of learning through the use of hypertext links to other materials. This encourages revisiting and revising learned concepts thus enriching the experience. Safran’s study on blogging in Higher Education Programme showed that increased reflection by the students on their practical work resulted in
better understanding of the underlying concepts, and thus better performance in the theoretical part (2008).

2.6.5 The advantages of blogging
Quible (2005) declared “Looking back I can think of no other strategy I have tried through the years that has a greater positive impact with as little expenditure of cost, time and effort as blogging”. The advantages are many:

- Students become familiar with blogging, a tool now used by an ever increasing number of employers to support routine operating functions.
- Material in electronic format is more quickly available and conveniently distributed to students than in other media, such as hard copy or transparencies.
- Because it is maintained in electronic format, material is free to students. Using this format eliminates the concern many instructors have of incurring printing/duplicating costs associated with providing hard copy for each student or preparing transparencies.
- Blogging is more efficient for sharing material with students than e-mail or a listserv.
- Instructors can obtain free blogs (for example, http://www.blogger.com) for their class use.

(Quible 2005)

2.6.6 Disadvantages of Blogs

- It involves a lot of time to update and post an entry on the blog site.
- Regular writing may give rise to slangs and sloppy way of writing spoiling the quality of proper usage of language.
- One major drawback is that not all information can be shared on blog sites. Hence may not be useful for everyone.
- The need to have a computer may not be feasible for everyone.
- Individuals and students may have reluctance is getting used to the technological advancements.
- Blogging cannot be trusted upon students who are hardly interested in reading and replying to the post.
- Blogging on day to day issues is different from writing on the subject. Hence
it may not be a practical idea to force them to do it.

• We were talking individual blogs linked to the groups website, while it is good for students to have their own blog sites, remember not all may be able to participate, unless, all the comments are seen in one common blogging site.

• There is no confidentiality as it is a public forum.

• It can no way be related to conversation, as there is always a time gap in the replies received.

• It is not suited for issues requiring immediate solution.

• Blogs create a sense of students competing with each just for posting entries.

• The fear of students getting diverted away from the subject is an issue of concern. The moment students open to the web; it is not just the blogging site that they can have access to. The whole world of information is before them, hence there is every chance that they may get diverted away from the discussion.

(Online Education Blog 2011)

2.6.7 Educational uses of blogs

Some of the educational uses of blogs as follows:-

• Reflect on your teaching experiences.

• Keep a log of teacher-training experiences.

• Write a description of a specific teaching unit.

• Describe what worked for you in the classroom or what did not.

• Provide some teaching tips for other teachers.

• Write about something you learned from another teacher.

• Explain teaching insights you gain from what happens in your classes.

• Share ideas for teaching activities or language games to use in the classroom.

• Provide some how-to’s on using technology in the class, describing how you used this technology in your own class.

• Explore important teaching and learning issues.

• Post-class related information such as calendars, events, homework assignments, and other pertinent class information.

• Post assignments based on literature readings and have students respond on their own weblogs, creating a kind of portfolio of their work.

• Communicate with parents if you are teaching elementary school students.
• Post prompts for writing.
• Provide example of class work, vocabulary activities or grammar games.
• Provide online reading for your students to read and react to.
• Gather and organise internet resources for a specific course providing links to appropriate sites annotating the links as what is relevant about them.
• Post photos and comment on class activities.
• Invite student comments or postings on issues in order to give them a writing voice.
• Publish examples of student’s art, poetry and creative stories.
• Create a dynamic teaching site, posting not only class related information, but also activities, discussion topics, links to additional information about topics they are studying in class and readings to inspire learning.
• Create a literature circle.
• Create an online book club.
• Ask students to create their own course blog.
• Link your class with another class somewhere in the world.

(Richardson 2006, p.40)

2.6.8 Blogging and peer feedback

Wang & Hsua (2008) suggests that learning using a blog is meaningful and that students will negotiate meaning from their peers. By students thinking and reviewing the posts it lends itself to the reflective process.

Deng and Yuen’s (2010) study of student teacher blogging indicated that blogs are primarily a tool for personal broadcasting and researching. Stiler and Philleo 2003 (cited in Deng and Yuen 2003) found that the use of blogs positively affected the depth and breadth of student reflection. From the above study Deng and Yuen found 70% of student teachers acknowledged that blogs foster a process of self-reflection but found that irrespective of the fact that the overall level of student reflection thinking increased over time, peer feedback to each other’s blogs did not promote reflective thinking. (2010).
2.6.9 Personal blog versus community blog
Certain researchers claim that blogs successfully motivate students to use the blogs, while others found that students are not excited enough to maintain ongoing usage. More specifically, Kim’s study investigated two different research results and discovered that students with a shared blog were less interested in blogging as compared with students with a personal blog (2008). Thereby, the personalized-blogging circumstance might enhance online communication activities so that a shared blog environment might be unnecessary (Kim 2008).

2.6.10 Motivation and blogging
Motivational theory in learning points towards the need for learners to feel that they are the origin of their action, have self confidence, are goal driven and benefit from feedback. Publishing commentary and entries can lead to peer learning, peer assessment and a sense of ownership, all of which are highly motivational. Forrester and Janzie (1998) put the learner at the heart of the learning process. This interactivity of students working together is one of the key concepts of constructivism. Through blogs, a teacher can create an ambience in which students feel themselves to be important parts of the classroom community and that their needs and opinions are recognized and addressed (Churchill 2009). Learning is extended to outside the school environment. The intention appears to be to enrich the learning experience and provide an opportunity for learners to shift from surface level to deeper levels of learning. Blogging can give the ‘silent student’ a voice by allowing them the opportunity to write on topics of interest (Bragg-Barlett 2003). Student work is available immediately for peers to review or for others on the World Wide Web to comment and post feedback. All of these factors can be motivating for students to learn (Sawmiller 2010). Joi Ito, the popular Japanese Blogger identifies the ‘fun of learning’ as a key motivational factor in blogging (Joi Ito 2010, p21).

Publishing to the Net may be our best opportunity to reassert ourselves as the experts on education and the group that should be taking leadership in retooling classrooms for twenty-first century teaching and learning (Warlick 2005).
2.6.11 Human computer interface

Alessi and Trollip (1991) outline five essential types of computer-based instruction programmes (tutorials, drills, simulations, games and tests) that provide ‘the basic groundwork for understanding and developing good computer-based instruction’. Mayer (2001) suggests that there are in fact five steps in multimedia learning. These are selecting relevant words from presented text or narration, selecting relevant images from the presented illustrations, organising the selected words into a coherent verbal representation, organising selected images into a coherent visual representation and finally integrating the visual and verbal representations and prior knowledge.

2.7 Conclusion

This chapter outlined the learning theories. The Researcher explored how these theories play a role in how technology and especially blogging can be integrated into education. The Researcher also investigated e-learning and the benefit of blogging as an e-learning tool. The next chapter will explore the research methodology that was chosen for this research study.
Chapter 3 Methodology

3.1 Introduction
This chapter focuses on the research objectives that are to be addressed, describes the setting, the participants and considers the methods that are most appropriate for this research. While researching this chapter the Researcher deemed it essential to research the principles and practices in order validate the Researcher’s research.

3.2 Research objectives
The overall aim of this study is to investigate blogging as an e-learning tool in post-primary schools.
The following objectives will be addressed:

• To investigate if blogging is an effective pedagogical tool.
• To explore blogging as a constructivist’s tool.
• To study Irish post-primary students as bloggers.

3.3 Research setting
The research took place in two post primary schools. School A is a single sex school in county Kildare with seven hundred and fifty students. School B is a fee paying co-educational school in south county Dublin with three hundred students.

In School A the Transition year (TY) students created and developed their own TY blog and maintained it over the academic year. The Transition Year (TY) is a one-year programme that forms the first year of a three-year senior cycle in many schools. It is designed to act as a bridge between the Junior Certificate and Leaving Certificate programmes. It is available to all second level schools and currently approximately 75% of schools offer the programme. Transition Year is optional for students in most schools. Transition Year offers learners an opportunity to mature and develop without the pressure of an examination. It also provides an opportunity for learners to reflect on and develop an appreciation of, the value of learning in preparing them for the ever-changing demands of the adult world of work, further and higher education and relationships (NCCA 2011).
The TY co-ordinator played a vital role in promoting educational blogging. The students were encouraged to write their blogs on a twice-weekly basis to capture critical or memorable incidents and they were to read and comment on each other’s blogs to exchange ideas and support each other. Prior to this the TY students had to keep a journal of their TY experience, this journal of excellence was created on Microsoft Word and printed at the end of the year. Each student’s blog was accessible from the School A’s TY blog. The students wrote about their experiences during the TY. The students could embed digital images or video.

In School B the Science Teacher developed a science blog with the aim of providing an online tool for the promotion of science within School B, and across the country. The blog is frequently updated with science news stories from all over the world and contains a wide range of articles on a wide variety of subjects varying from astronomy to zoology. It initially was developed to publish student’s work and departmental news, now the blog has evolved to create teaching links, learning links, science and technology links. It main aim is to enthuse pupils about science and nature. There are several videos and podcasts on the blog. It is not aimed at any particular science syllabus.

3.3.1 Participants
The population for this survey was 46 transition year students in School A and 38 science students in School B, and the blog facilitators from each school (Teacher A and Teacher B).

3.4 Research approach
The research has identified the two most common approaches to educational research, action research and case study research.

3.4.1 Action research
Action research is an on the spot procedure designed to deal with a concrete problem located in an immediate situation.

   Action research is small-scale intervention in the functioning of the real world and a close examination of such intervention.

A practical and problem-solving researcher identifies a problem, see the merits of investigating it and if possible, improve practice. The work of Kurt Lewin, the social psychologist who in the 1940’s suggested the action research ‘spiral’ of plan, act, observe and reflect Lewin 1940 (cited in Wellington 2000). The researcher did not chose this approach as it did not match with the research objective. The researcher was not trying to solve a concrete problem; the researcher was trying to investigate blogging as a pedagogical device, an overall view of blogging within the educational context.

3.4.2 Case study

The case study approach observes the characteristics of an individual unit, a child, a class, a school or a community (Cohen and Manion 1989). The stress is put on the unit, the unit may be a school in educational research, or a child or person in a school, or a single object. ‘Cases are often chosen to deepen understanding of an event, a problem, an issue, a model’ Stake 1995 (cited in Wellington 2000, p.91 ). The case study is an issue explored over time, through detailed in-depth data collection. The key features of case study research are that it:

• may involve a wide range of different methodologies.
• is concerned with how things happen and why.
• does not attempt to control events or intervene.

(Wellington 2000, p.100)

The researcher followed Yin’s (2003) five stages in using the case study as a research strategy:

1. Design the case study.
2. Conduct the case study: Preparing for the data.
3. Conduct the case study: Collecting the evidence.
4. Analyze the case study evidence.
5. Reporting on the case study.
3.4.2.1 Rationale for choosing a case study

The use of a case study approach allows the researcher to ‘concentrate on a specific instance or situation’ (Bell 1993, p.8). The researcher wanted to research one particular e-learning tool with one target population. Due to the time limitation of this research study, the researcher chose blogging to be investigated and one target population. The researcher chose a case study approach, as it would be the most efficient and effective research tool.

3.4.2.2 Limitations of a case study

Case study research has its advantages and disadvantages. It can be illuminating, insightful, attention holding and grounded in a sense of reality. (Wellington 2000). The limitation is that case studies may be generalisable. The two questions that need to be asked are is the case study both externally and internally valid? Externally valid relates to the issue of sampling and internally valid deals with the notion of presence and instrumentation. This is a problem with all research but these inherent dangers need to be recognised and acknowledged and if they are ‘case studies can then be rich, interesting and possess wide appeal’ (Wellington 2000, p.99).

3.5 Principles and practices of research

Research is a combination of both experience and reasoning and must be regarded as the most successful approach to the discovery of truth, particularly as far as the natural sciences are concerned (Cohen & Manion 1989).

Once you have your research topic chosen, you then choose a paradigm (Creswell 1994). Paradigm is a term deriving from the history of science where it was used to describe a cluster of beliefs and dictates for scientists in a particular discipline influencing what should be studied, how research should be done and how results should be interpreted (Bryman 2008).

The two paradigms are quantitative and qualitative.

3.5.1 Quantitative research

Quantitative is termed the traditional, the positivism, the experimental or empiricist. Empiricism is an approach to the study of reality that suggests that only knowledge gained through experience and the senses is acceptable. Quantitative research usually
emphasises quantification in the collection and analysis of data. As a research strategy quantitative research is deductivist, an approach to the relationship between the theory and the research in which the research is conducted with reference to the hypotheses and ideas inferred from the theory. It is also objectivist, an ontological position that asserts that social phenomena and their meaning have an existence that is independent of social actors. Quantitative research incorporates a natural science model of the research process in particular, one influenced by positivism, an epistemological (theory of knowledge) position that advocates the application of the methods of the natural sciences to the study of social reality and beyond. In summary the quantitative researcher collects facts and studies the relationship of one set of facts to another. The researcher can make quantitative and generalized conclusions. The research instrument is a pre-determined, finely tuned tool i.e. a questionnaire.

3.5.2 Qualitative research
Qualitative paradigm is termed the constructivist or naturalistic approach, the interpretative approach or the postpositive perspective. Qualitative research usually emphasise words rather than quantification in the collection and analysis of data. As a research strategy it is inductivist, an approach to the relationship between the theory and research, in which the theory is generated out of the research. It is also constructionist, an ontological position that asserts that social actors are continually accomplishing social phenomena and their meanings. Qualitative research is interpretivist, but qualitative researchers do not always subscribe to all three features. In summary qualitative research explores people’s feelings, thoughts and experiences in depth, the researchers using themselves as the instrument. Some of the research methods are observation, interviews and focus groups.

3.5.3 Research methodology
The researcher has chosen to carry out a small scale mixed methodology case study approach. Bryman (2008) states that a mixed methodology is research that combines both quantitative and qualitative methods. Wellington advises ‘in a small –scale study, a mixture of methods can often be adopted’ (Wellington 2000, p.23). Therefore a case study research may yield both qualitative and quantitative data. There has been much discussion about using mixed methods from the qualitative and quantitative traditions given the difference in epistemological foundations. Stake in Hitchcock &
Hughes (1995) distinguishes that a case study is principally about the object that is explored, and not the methodological orientation used in studying it. If the major concern of the researcher is with the intrinsic interest of the case itself then it is likely that a range of techniques will be used to obtain that data and different kinds of data will feature (Hitchcock and Hughes 1995). The researcher has chosen a mixed methodology approach as it is a small-scale study and the case study is principally about the object i.e. blogging, so in this study both qualitative and quantitative methods are employed.

3.6 Data collection tools
The information and data for this mixed methodology case study was gathered using three different data collection tools. Two questionnaires were distributed to two schools (School A and B), a focus group was conducted with students from School A and semi-structured interviews were conducted with teachers from School A and B.

3.6.1 Questionnaire
A survey is a research strategy, an overall approach to doing social research. A questionnaire is a form of a survey, a data-gathering tool (Robson 2002).

3.6.1.1 Rationale for choosing a questionnaire
The researcher chose a questionnaire as one of the data collection tools because of its ease to design and easy to distribute. Wellington stated that a “postal questionnaire may even be richer, perhaps more truthful, than data collected in a face-to-face interview” (Wellington 2000 p.106).

3.6.1.2 Questionnaire design
The design of the questionnaire drew on the researchers pilot study feedback and the related literature. Two paper based questionnaires were distributed to School A and B (Appendix C and D). The researcher chose three kinds of questioning styles, fixed alternatives, scale like and open-ended questions.

The fixed alternative questions allow the respondents to choose from two or more alternatives (Cohen and Manion 1989). The researcher chose two alternatives Yes/No.
Using the fixed alternative it allows greater uniformity of measurement and therefore greater reliability. The disadvantage of using fixed alternative is that it may irritate the respondents but this is overcome by mixing in open-ended questions (Cohen and Manion 1989). Open-ended questions allow the interviewer to probe so that the interviewer may go into depths if he/she chooses or to clear up any misunderstandings (Cohen and Manion 1989).

The open-ended questions allow for greater flexibility for the respondent to answer with minimum restraint.

The scale question is a set of verbal items to each of which the interviewees responds by indicating degrees of agreement or disagreement (Cohen and Manion 1989). The Likert Scale was chosen because of its documented advantage of allowing, through use of positive and negative statements, each respondent to consider each question on its own merits. A Likert Scale with values ranging from 1- 5 (1 for strongly disagree, 3 for neutral, 5 for strongly agree) was employed to assess student perceptions and attitudes. The following is the Likert grading scale used:

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Do not Know</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

Table 3.1 Likert Scale

For School A, 9 quantitative questions were used, 5 fixed alternatives and 4 using the Likert Scale with 3 open-ended questions. For School B, 10 quantitative questions were used, 4 fixed alternatives and 6 using the Likert Scale with two open-ended questions. Two questionnaires were distributed because School A’s TY blog was created by the students and School B’s blog was created by the science teacher for the students.

Although there were only 12 questions employed on each questionnaire the scope was wide-ranging, covering the key elements of the research questions. The researcher’ distributed the questionnaire by post to School A’s TY co-ordinator and to School B’s science department.
3.6.1.3 *Pilot study*

A pilot questionnaire was given to the teachers in School A and B and the researcher’s supervisor. Where questionnaires are used, the success and value of the research is likely to depend on their quality (Evans 1978). This pilot questionnaire was designed to test the face validity of the data collection instrument. As well as the quantitative items it was felt that use of open qualitative responses would add richness to the findings. Some questions were restructured or adjusted as a result of the feedback from the teachers.

3.6.2 *Focus groups*

A focus group is a research technique that collects data through group interaction on a topic determined by the researcher (Morgan 1996). Litoselli is of the opinion that focus groups are set up in order to explore specific topics and individuals’ views and experiences through group interaction (2003).

The researcher conducted a focus group with ten TY students in School A (Appendix E). Litoselli found that smaller groups offer more opportunity for people to talk and is more practical to set up and manage (2003). The researcher used the focus group at the exploratory aspect of the analysis. Focus groups have a considerable potential for contributing to survey research. The researcher had pre-prepared open questions and the session was digitally recorded as consent had been granted. In essence, it was the researchers interest that provided the focus, whereas the data itself came from the group interaction. The strengths of a focus group is the ability to produce concentrated amounts of data on precisely the topic of interest, giving the focus group the reputation of being ‘quick and easy’. The weakness of a focus group that it can be bias and that manipulation by the researcher may influence the group’s interaction. Other limitations identified maybe a dominant participant giving a false consensus or difficulty of analysis and interpretation of results due to the open ended nature of focus groups.
3.6.3 Interview

Cohen and Manion defines the research interview as

a two-person conversation initiated by the interviewer for the specific purpose of obtaining research-relevant information, and focused by him on content specified by research objectives of systematic descriptions, prediction, or explanation.


The advantage of the interview allows for greater depth compared to other research methods but it is prone to bias on the part of the interviewer. The interview can elicit information that other methods cannot (Wellington 2000). An interview can investigate interviewee opinions, values, tolerance, perceptions, views, feelings and perspectives.

3.6.3.1 Style of interview

There are three types of interview; unstructured, semi-structured and structured.

An Unstructured interview is a very flexible type of interview with some control on both sides. The interviewee guides it, the direction is unpredictable and the data may be difficult to analyse.

The semi-structured interview allows for more control by the interviewer, questioning is flexible, may be modified during the course of the interview.

‘The structured interview is one in which the content and procedures are organized in advance’ (Cohen and Manion 1989, p.309). The structured interview allows for most control by the interviewer, guided by the researchers pre-determined agenda and may provide easier framework for analysis.

The interviews were held in schools A and B (Appendix F and G). Each interview lasted approximately twenty minutes. A semi-structured approach was used so as to allow freedom for each interviewee to express himself or herself freely. Each interview commenced with a brief description of the research being undertaken. The interview began with the formal questions, as both the interviewees were very enthusiastic about their blogs, the interview flowed quite easily as they are both
experts in their respective area of study. The questions that were asked were decided upon after the literature was reviewed and the findings of the questionnaires analysed. Bell (2010) states, “A skilful interviewer can follow up ideas, probe responses and investigate motives and feelings, which the questionnaire can never do” (Bell 2010, p. 161).

### 3.7 Triangulation

A critical aspect to a mixed methodological approach was the concept of triangulation. The term triangulation originates from its use by navigators, surveyors, military strategists or others involved in physical measurement of several locational markers to pinpoint a certain position or objective (Wellington 2000). Cohen and Manion (1989) define triangulation as: ‘the use of two or more methods of data collection in the study of some aspect of human behaviour’ (Cohen and Manion 1989, p.269). Triangulation is the use of more than one method or source of data in the study of social phenomena so that the findings maybe cross checked (Creswell 1994). The researcher can undertake triangulation, which most writers on case study methodology have considered as vital to internal validity, especially those studies that seek explanatory outcomes (Hitchcock and Hughes 1995).

In this case study, triangulation has been achieved by distributing two questionnaires to two different schools, a focus group and semi-structured interviews with Teachers A and B.

### 3.8 Validity and reliability

Wellington (2000) defines validity as ‘the degree to which a method, a test or a research tool actually measures what it is supposed to measure’ (Wellington 2000, p.30). He proposes that we can never be one hundred per cent sure of validity, that we can only lay some sort of claim that our test is valid. Wellington outlines that any assessment of validity depends heavily on the definition or meaning of the term underlying it, and many of these terms in education can prove problematic e.g. understanding, knowledge, ability, achievement, numeracy, literacy, learning, development, knowledge, IT literacy, and so on.
Reliability is believed to be as debatable as validity. It is the idea that a test, a method or a tool will give consistent results across a range of settings, and if used by a range of researchers. Le Compte and Pressle 1984 (cited in Wellington 2000) describe reliability as:-

The extent to which studies can be replicated. It assumes that a researcher using the same methods can obtain the same results as those of a prior study. This poses an impossible task for any researcher studying naturalistic behaviour or unique phenomena.

(Wellington 2000, p.31)

3.9 Ethics

‘An ‘Ethic’ is a moral principle or a code of conduct which actually governs what people do’ (Wellington 2000 p. 54). Prior to release of the questionnaires, permission was sought and received from both boards of management (Appendix A). Permission was also sought from the Principal to conduct a focus group in School A to which the students agreed to be digitally recorded (Appendix B). The relevant information about the nature and purpose of the research was given prior to distribution of the questionnaires. The researcher guaranteed confidentiality and anonymity at every stage.

3.10 Timeline

Time line for completion of the thesis was 12 months, October 2010 – October 2011

October 2\textsuperscript{nd} 2010 The researcher attended the principles and practice of research module at the University of Limerick.

October 16\textsuperscript{th} 2010 The researcher attended a thesis writing workshop.

November 2010 Masters proposal submitted.

November -February 2011 Literature review on the research topic. Draft of chapter 2 written up.

March 2011 Research methodology researched and data collection tools chosen. Pilot questionnaire sent to both schools with ethics letter.
<table>
<thead>
<tr>
<th>Month</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>April 2011</td>
<td>The questionnaires were distributed to both School A and B after permission was granted from the respective principals.</td>
</tr>
<tr>
<td>April 2011</td>
<td>Questionnaires analyzed and written up.</td>
</tr>
<tr>
<td>May 2011</td>
<td>Focus Group conducted and written up.</td>
</tr>
<tr>
<td>June 2011</td>
<td>Chapter 3 written up, the principles and practice of research.</td>
</tr>
<tr>
<td>August 2011</td>
<td>Interviews conducted and written up.</td>
</tr>
<tr>
<td>September 2011</td>
<td>Data correlated and Chapter 4 written up.</td>
</tr>
<tr>
<td>September 2011</td>
<td>Chapter 5, Discussion of findings in relation to literature reviewed.</td>
</tr>
<tr>
<td>September 2011</td>
<td>Chapter 6 recommendations and suggestions for further research.</td>
</tr>
<tr>
<td>September 2011</td>
<td>Final draft submitted</td>
</tr>
<tr>
<td>October 2011</td>
<td>Submission of thesis.</td>
</tr>
</tbody>
</table>

### 3.11 Conclusion

This chapter defined the research approach as a small scale, mixed method case study, incorporating a combination of qualitative and quantitative research methods. The data collection tools included two questionnaires, direct semi-structured interviews and a focus group.
Chapter 4 Findings

4.1 Introduction

This chapter is to present the main findings of the research case study. The overall aim of this study is to investigate blogging as an e-learning tool in post-primary schools. This chapter will review the results and findings from three data collection tools.

- Two questionnaires were distributed to two schools. School A’s students designed and created their own blog whereas Schools B’s students accessed the subject blog created and written by their science teacher.
- Focus group conducted in School A with the TY students.
- Interview with the both blog facilitators (Teacher A and B).

4.1.1 The Findings of the data in line with the research objectives

- To investigate if blogging is an effective pedagogical tool
- To explore blogging as a constructivist’s tool.
- To study Irish post-primary students as bloggers

4.2 To investigate if blogging is an effective pedagogical tool

4.2.1 Introduction

This research objective is to review the pedagogical value of blogs. A series of statement were put forward to both schools in the questionnaires and interviews, some of the statements are common to both schools and some are relevant to one school only.

4.2.1.1 Educational reasons for creating a blog

The blog facilitators were asked at interview for the educational reason for creating their blogs.

Teacher A explained that the blog emerged out of the journal of excellence that previous TY students wrote. The TY students always created a folder of excellence. Throughout the year they would update a word document of their experiences and at
the end of the year they would print off this word document and put it on display for their parents and peers to read. It was always very problematic at the end of the year when it came to printing. The printer would run out of cartridge or breakdown so they decided to go digital. In essence the students write about their experience and memories of TY in a blog. This blog now informs prospecting students and parents of the activities of the schools TY.

Teacher B explained that there were two reasons why he set up the blog. Firstly another colleague who has a very successful English blog encouraged him. Secondly the main purpose was to motivate and get his students enthused about science. He wants his students to see science as not just a set of facts and definitions and formulas in a textbook. He explained that science is a process, it is happening all the time all around us and that it is more than a list of facts or notes to be learned for an end examination.

4.2.1.2 The blog as an extension of the classroom
The researcher posed the question ‘Is the blog an extension of the teacher’s classroom’? This question was taken directly from the literature on blogging. The idea is that the blog extends the classroom so that when the bell goes the learning continues beyond.

Teacher A explained that the TY blog is not a subject blog; the TY blog is a portfolio of all the students’ experiences in TY. This now acts as a prospectus for incoming students. In fact most of the incoming students have their work experience organized after making contact with the current TY students. They read the students work experience blog and made direct contact with them in the school.

Teacher B explained that he viewed the term extension of the classroom as the connections he has made through the blog. When he started writing the blog he was a science teacher working in a post-primary school, he feels that the blog has opened up avenues for him professionally. He now writes an article for the Irish Times newspaper, he has been asked to speak at conferences on the topic ‘blogging’. He sits in on a radio show and he has been also contacted by producers from RTE regarding a science programme. He also clarified that his view regarding science communication
has changed. In reality from writing the science blog he is becoming an expert in the field of science blogging.

The students found that they could access the blog at anytime or any place. The researcher found that students from School A mostly wrote their blogs from home. Students in School B found that they would access the information when they needed it, as School B is a fee paying school most students accessed the blog within the school campus.

4.2.1.3 International pedagogical links
Last year School A took part in the student challenge blog, which involved the students connecting with schools in Australia and New Zealand. This year School A is quad-blogging, which is four schools working in unison one school takes a lead blogging for one week each month. The other three schools visit their blog for one week and there is lots of interaction between the schools. Teacher A explained that a deputy principal in England has set it up and he has 600 schools from around the world involved. In School A’s quad they have a school from Australia, the UK, and America. The students like the idea that students from around the world are visiting their blog.

“Each blog had a little map and told you what country was looking at your blog. That’s cool! They were just looking at your blog but did not leave a post. You can also see how many people were looking at your blog”.

(Student, School A)

“I had a comment from Hong Kong”.

(Student, School A)

4.2.1.4 Pedagogical implications of a blog
The researcher queried if the creation of an education blog was time consuming. Teacher A, did not find creating the blog time consuming as she is IT literate but she did state ‘….for teachers who are not IT orientated it would be time consuming’.

Teacher B stated, ‘It can take over your life. I would say it is addictive rather than time consuming. I do not think it is a burden on me’. 
4.2.1.5 Educational relevance of a blog

33% of the students in School B strongly agree while 59% agree that the subject blog is relevant to their curricular needs, 5% do not know and 3% disagree with the statement. A comment from one of the students in School B highlighted an area, which is of concern to Teacher B. The concern is that the fact the blog has now evolved away from the current education curriculum; it is now a general science blog.

“My main problem with the blog and why I disagreed with so many points is that it’s not particularly relevant to my courses. It’s interesting but I wouldn’t say it contributes much to my Leaving Cert”.

(Student, School B).

Teacher B explains that not only has the blog evolved but also it has kept him motivated within his practice and maintains his continuous professional development.

“The blog has been enormously successful in terms of keeping me motivated to teach. A lot of the time as science teachers we can get so engrossed in the curriculum we ourselves forget that there is a world of science that is currently happening and changing and we do not keep up to date with science. A lot of the stuff that’s coming out in the news is very relevant to what we are teaching”.

(Teacher B)

![The blog provides information relevant to my educational needs.](image)

Figure 4.1 Educational relevance of a blog
4.2.1.6 The blog and information distribution

62% of students in School B access the blog to acquire information or class notes. 38% do not use the blog for this reason.

Figure 4.2 The blog and information distribution
4.2.1.7 *Blogs as an effective way to learn*

In School B 79% of students consider the blog an effective way to learn but 21% would not. Students’ felt they learned lots of interesting facts about various topics, they felt that the information was current and it was a different way of learning. Students in School A found their literacy skills improved and with this, their confidence. One student comments that it was active learning.

“I think that the best thing about the blog is the articles posted are the interesting facts that I would otherwise never find out”.

(Student, School B).

“Lots of interesting and different topics are contained there. Confusion is easily dissolved with the tweets and comments that follow the topic”.

(Student, School B)

“Learning about current things and more interesting than normal class”.

(Student, School B)

![Figure 4.3 Blogs as an effective way to learn](image-url)

*Figure 4.3 Blogs as an effective way to learn*
4.2.1.8 **Blogging and motivation to learn**

15% of the students in School A strongly agreed that blogging motivated them to learn when it was convenient for them, 28% agreed but 57% did not know or disagreed. This would indicate that blogging did not motivate the majority of students to learn.

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**Figure 4.4 Blogging and motivation to learn**
4.2.1.9  *A blog and different learning styles*

Individuals learn differently. Learning styles can be seen as the attitudes and behaviour that determine an individual's preferred ways of learning.

4.2.1.9.1 *Learning and level of ability*

18% of students in School B strongly agreed that blogs suited their level of ability, 41% agreed, whereas 38% did not know. In total 41% did not know or disagreed with this statement, which may imply that they are not aware of their ability or the question was phrased incorrectly. Some students found reading the information from a screen difficult or the information was too concentrated. Some students approached Teacher A regarding their concerns about writing their blog, they felt they would not be capable of writing a blog because of a learning difficulty or being self conscious about their literacy skills. Teacher A explained to these students it was not about writing large quantities of blogs but the quality of each blog.

“Some students did say to me “Miss, I am not good at English or I have dyslexia, my posts wont be long” That’s fine. It was to get them to reflect. Maybe if I had not put a link to all of their blogs from my blog…. this made their blog obvious they might have been happier with it”.

(Teacher A)

![This method of learning suited my level of ability.](image)

*Figure 4.5 A blog and different learning styles*
4.3 To explore blogging as a constructivist’s tool

Reflection is seen as essential to the learning process. The researcher explores this in the following statement.

4.3.1 Blogging as an effective way to reflect

It is clear that both schools consider blogging a reflective tool. In School A where they write their own blog, 83% agreed that blogging was an effective way to reflect. In School B even though they do not write the blog they look back at work posted, 66% would reflect on the blog, 34% do not know.

Students were quite aware that they were reflecting when they were journaling their experiences in the blog. Some students felt like they were keeping an ‘old time’ diary. The students could see the benefits of reflection, the notion that they could take time to see the good and bad from an experience. Students liked the idea that they could keep their memories in their blogs. Embedding videos and pictures enhanced these memories. One student clarified that blogging made a school excursion more meaningful as she would be thinking of what she could be writing during the excursion in her blog.

“At the end of the year you can reflect on your year and remember all the great memories”.

(Student, School A)

![Figure 4.6 Blogging as an effective way to reflect](image)

**Figure 4.6 Blogging as an effective way to reflect**
4.4 Post-primary students as bloggers

This research objective reviews the activity of students as bloggers. In School A the students created their own blog whereas students in School B accessed the blog that was created and written by their science teacher. The findings sought from School A and B was as follows:

- Are their students’ bloggers?
- Did the students find it easy to create their own blog?
- Ease of access to the blog?
- Are they going to continue blogging?

A series of statement were put forward to both schools, some of the statements are common to both schools and some are relevant to one school only.

4.4.1. Personal blogs

In school A, 93% of students did not have a personal blog prior to entering TY and 7% had their own personal blog. This would indicate that School A’s students had very little experience of blogging. A comment from one of the students in the focus group was that she had never heard of blogging. Another student commented in the focus group that when they were creating their blog they discovered that only one student had their own blog.

![Figure 4.7 Personal blogs](image-url)
4.4.2 Ease of creating of a blog

Even though 93% of the students in School A had not a personal blog prior to TY, overall they found it very easy to create their own blog. 28% found it very easy, with 63% agreeing that it was easy to create. 7% found it difficult to create. Most of the students liked the design aspect of the blog, the fact that they could personalize it, made it more meaningful. Some students had technical difficulties and this lead to them not enjoying the experience.

“I liked designing my blog, posting pictures and videos to make it personal”.

(Student, School A)

“I did not enjoy the experience, as I had a lot of problems preparing my blog and creating it”.

(Student, School A)

In agreement with the above comments Teacher A explained that there was a flurry of activity at the beginning of the year on the technical side, setting it up, changing their templates, changing their color schemes and the students really enjoyed the technical side of the blog.

Figure 4.8 Ease of creating a blog
4.4.3 Access to the blog

Comparing School A and School B, both groups of students find it convenient and easy to access the school blogs. 85% in School A and 97% in School B agreed that it was easy and convenient to access the blog. This was in keeping with the ‘martini effect’, anytime, any place access. In School B there was an issue with the Internet speed. Teacher B explained that the school had a private network and they have now moved over to the NCTE broadband scheme. He continued to explain the problem with their school is that it is such a vast campus that is very difficult to get good wi-fi signal. There are 50 wi-fi points around the school but because the school is built behind a hill and the buildings are made of stone the signals can be poor but that since changing over these issues had become less of a problem.

“You can choose what you want to look at, you can choose when you want to look at it, and where you want to look at it! Whatever you want, however you want, whenever and wherever you like! Very convenient!”

(Student, School B)

“The internet in school is quite slow so I rarely use the Internet in school”.

(Student, School B)

It is easy and convenient for me to access the TY blog.
School A

It is easy and convenient for me to access the blog
School B

Figure 4.9 Access to the blog
4.4.4 Ease of use of the blog

In School B as stated previously the blog is created and written by the Science Teacher. The students have access to all the material/information on the blog. 67% of School B’s students strongly agreed that School B’s blog is user friendly, 31% agreed that it was user friendly and 2% did not know. Overall 98% found Schools B’s blog easy to use. The students enjoy the ease of access to the information and how fast it is to obtain the information. Some students referred to the ease of obtaining the information and not having to carry books around with them. A student noted that it is a valuable way to share ideas and information. The students found the blog easy to navigate and the information was up to date and in a language that is easy to understand.

“I like the way it’s easier and faster to access the information I need. I also like the way people can share their ideas”.

(Student, School B)

“I find it quick and easy to use and I find it very handy not to have to carry lots of books around with you”.

(Student, School B)

“It is easily accessible and user-friendly. Due to links on the site to other articles of interest it can be interesting and constructive”.

(Student, School B)

![The blog is user friendly.](image)

Figure 4.10 Ease of use of the blog
4.4.5 Blogging after TY

The Researcher wanted to investigate if students in School A would continue to blog after they had created and written their own blog for one academic year. 35% of students said they will continue to blog where as 65% of students said they will not continue to blog. Only one student in the focus group said she would continue to blog. Teacher A explained that this student has been very successful with her blog; she won the Irish blog award youth category. She has been contacted by TG4 to take part in an Irish language programme; RTE contacted her after they discovered her blog when they were doing research for a teen programme. She was also asked to attend an arts festival to speak about youth blogging. Teacher A has observed that her writing style has changed in the space of one year, her confidence has improved so much and she is now using her blog as a personal blog and is writing about serious issues.

Two main reasons that may contribute to 65% of students in School A not wanting to continue to blog are that firstly blogging is time consuming and secondly the people who are reading the blogs. Students felt they could not write freely when the Principal or other teachers were reading the blog. Students were quite aware that once information was put up on the Internet that it was there forever.

“I do not have the patience, time or energy to blog on a regular basis and do not like having information about myself and my life up on the Internet for everyone to read”.

(Student, School A)

“I did not really like blogging for other people to see. We can’t blog properly when we know who can read them so we are limited in what we can say and it makes it boring trying to watch what you say and how you spell and stuff. And I did not enjoy blogging about everything we did”.

(Student, School A)

![I will continue to blog after TY.](image)

**Figure 4.11 Blogging after TY**
4.4.6 Post-primary students, blogging and communication.
This research objective is to find out if students use blogging as a means of communication. The researcher wanted to find out the following:

- Are students’ silent bloggers? i.e. they read all the blogs but do not write a comment.
- Are students’ blogging because their teacher tells them to?
- Does real discussion occur via the blogs?

4.4.6.1 Reading the blog
In School A, 76% of students read other students blogs and 24% do not read other students blogs. Students read the blogs to get inspiration for their own blogs or they were interested in certain activities that student was taking part in.

“I liked reading other students blogs and seeing what they thought of the activities and what they did for work experience”.

(Student, School A)

“I like to read some blogs to see what they are like”.

(Student, School A)

In School B 74% do not read the posts/tweets, 26% read the comments and tweets. Teacher B identified who reads the blog. The students from the school, other educational professionals and the public read the blog. Teacher B clarified that each blog posted is in fact current science information, which can range from astrophysics to zoology.

![Graphs showing reading blog habits in School A and School B](Image)

Figure 4.12 Reading the blog
4.4.6.2 Commenting on the blog

41% of the students in School A post a comment on other students TY blogs and 59% do not post any comments. Teacher A checked with the students if they read each other’s blogs and reminded the students to leave a comment. She checked their blogs regularly and checked the comments and showed them how to moderate their comments, so all comments were moderated on their blogs and only when they were happy that it was an appropriate comment would they post it to their blogs. Teacher A noted that a lot of the comments were very short. In fact she stated that “There was no discussion that took place, there was no real interaction”. It would appear that the students commented on other student’s blogs because they were instructed to and that no real discussion took place on the blogs.

In School B, only 10% of the students post a comment or tweet. 90% do not post a comment or tweet. Teacher B clarified that he writes the blog, Students would tweet back or they would post comments depending on the nature of the story. Of late he has suspended comments on most posts and only requests comments on posts that he wants e.g. for a video that he is recommending he is not going to request comments, but if it is an opinion piece, he will requests comments. He did an opinion piece on RTE and the development of a new science programme. It got a fantastic response in terms of tweets and comments and this led to producers from RTE contacting him via tweeter.

![Figure 4.13 Commenting on the blog](image)
4.4.6.3 Frequency of blogging

Of the 41% of School A’s students that post comments only 4% of them comment frequently, 28% occasionally, 28% rarely post a comment, 18% post the comment when they are instructed by the blog facilitator and 22% never post a comment. It would appear that the rate of frequency that the students wrote comments might be in direct relationship to the rate at which their teacher reminded them to. The researcher queried how they feel when someone posts a comment on their blog. The general feeling was that students were happy and it motivated them to write on their blog. Students felt that it encouraged them to write and what they said was worthwhile. Others were indifferent to the comments, they initially appreciated the comment but the novelty wore off.

“Happy that people comment because they read my blog. It encourages me to blog some more”.

(Student, School A).

“I feel honoured that someone took the time to read my blog and my writing provoked a response”.

(Student, School A).

“If a person from my own school comments I feel happy that someone has taken their time to read my blog. But if a stranger that I do not know comments on my blog I find that quite strange”.

(Student, School A).

**Figure 4.14 Frequency of blogging**
4.4.6.4 Blogging and self expression

In School A, the students considered blogging an effective way to express themselves with 55% agreeing, 17% do not know but 28% disagreed.

Parameters were set from the start of the year for students writing their TY blog by Teacher A. They were not to include anything personal or name anybody; the students were instructed to blog at least twice a week as instructed to by their teacher. This may have curtailed how effective the blog was to express themselves. Some students found it tedious having to write about their experiences or having nothing to write when they had not carried out any activities. Another student clarified that it depended on whether or not you enjoyed the activity; the more you enjoyed the activity/topic the more one wrote.

“We had agreed the conditions moving forward, we agreed we wouldn’t name anybody, photographs would only go up with peoples permission, it was only going to be about their TY”

(Teacher A)

“We were also conscious about posting images, we had to ask permission of other students if they were in a photograph”.

(Student, School A).

“Getting used to the rules was kind of hard but then we got used to it and also learning the rule of copyright, like getting images from Google”.

(Student, School A).

![I consider blogging an effective way to express myself.](image)

Figure 4.15 Blogging and self expression
4.5 Conclusion
This chapter presented the findings of the case study undertaken by the researcher. The main findings are that blogging is an effective pedagogical tool for educators, blogging is a constructivist’s tool as it is ideal for reflection and students do use blogging as a communication tool. The research was a small-scale, mixed method case study using qualitative and quantitative research methods.
Chapter 5 Discussion

5.1 Introduction

5.1.1 Outline of the chapter
The purpose of this chapter is to discuss the findings of the research undertaken by the researcher in relation to the literature reviewed in Chapter 2. These findings will be examined in keeping with the research objectives outlined in Chapter 3. The main research objective was to investigate blogging as an e-learning tool in post-primary schools.

5.1.2 Overview of research undertaken
The research was a small mixed methodology case study approach, combining qualitative and quantitative research methods. The participants for this research were 46 transitions year students in School A, 38 science students in School B, 10 students from School A in a focus group, a teacher (blog facilitator) from School A and a teacher (blog facilitator and creator) from School B. The data collection tools used were a questionnaire, semi-structured interviews and a focus group.

5.1.3 Key findings
The main findings of the case study were as follow:-

- Blogging is a valuable pedagogical tool for post-primary teachers.
- Blogging is a constructivist’s tool.
- Post-primary students find e-learning (blogging) an effective way to learn.
- Post-primary students do not use blogging as a communication tool.

The findings will be analysed under the following headings:

- Blogging as a pedagogical tool.
- Blogging as a constructivist tool.
- Post-primary students as bloggers.
5.2 Blogging as a pedagogical tool

5.2.1 Introduction

More than ever Irish post-primary schools are blogging. The NCTE has provided courses to support the integration of ICT into the curriculum, in particular Web 2.0 for learning (Blogs, Podcasts and Wikis). Teachers can host their own blogs on Scoilnet, Wordpress or Blogspot. Many schools are seeing the educational benefits of blogging as reviewed in Chapter 2. Educators have at their hands free e-learning tools. Examples are as follows, Google chrome, Wordpress, Blogger, Google Reader, Twitter, Gmail, Skype, Bubbl.us, Prezi, Snagit, Dreamweaver, Wiki, Youtube, Itunes, Moodle, Facebook and the numerous smart phone applications to name but a few. Micheal Fishers blooms diagram can best describe how these technologies are used.

![Visual blooms of web 2.0 tools](M.Fisher 2009 diggogog.blogspot.com)

**Figure 5.1 Visual blooms of web 2.0 tools**

The researcher is specifically evaluating the ‘blog’ as a pedagogical tool. A"Blog" is an abbreviated version of "weblog," which is a term used to describe web sites that maintain an ongoing chronicle of information. ([www.blogger.com](http://www.blogger.com)). A blog is a frequently updated, personal website featuring diary-type commentary and links to articles on other websites. The literature reviewed by the researcher has highlighted the potential of blogs. Some of the uses highlighted by the literature review are the
exchange of information, collaboration between diverse communities, hosting portfolios of work, reflective journals and learning portal.

5.2.2 The blog as an information dispensing tool

Teacher A explained that her blog emerged from the TY journal of excellence. This was a Microsoft Word printed document that was produced at the end of TY, by the TY students’. The students updated this word document through out the year and at the end of the year they printed this documents off for display purposes. Frustrations came when computers or printers were not working efficiently. The idea to go ‘digital’ was in response to this frustration. Teacher A explained this online journal/TY blog in essence is about their experiences and memories of TY. Now this blog acts as a prospectus for incoming TY students and their parents. Any student, parent or member of the public can access this blog and look at the activities of TY in this particular school. Some of the information and activities carried out this past academic year are as follows:-

- Mini-company was created and developed.
- The writing and illustrating workshop.
- The Italian cookery course.
- The Polish trip.
- The Pilates in Physical Education.
- The podcasting workshop.
- The work experience.
- The visit to croke park.

Teacher A has been contacted by other schools posting comments on the TY blog about how good the TY programme is in her school. Quibble (2005) identified several advantages of blogging it is clear from School A that publishing students material on the blog is one of those benefits identified by Quibble.

Teacher B created his blog as an experiment, he quickly realized the potential of his blog as regards motivating students and getting them enthused about science. The initial mission of School B’s blog was to publish student’s work and department news. Now it is creating learning links, teaching links and sharing news via the blog. This blog has news features, which include science, education, astronomy, technology, engineering, zoology and the environment. By integrating the blog into
the classroom and incorporating electronic writing into the classroom experience, students can enhance their understanding of science. Many teachers and students have begun writing their own textbooks online using collaborative spaces (Sawmiller 2010). Teacher B wanted students to see science as not just a set of facts, definitions and formulas in a textbook. He sees science as a process which is currently happening and using his blog he has current science information posted on the blog daily. This blog is very dynamic as regards information, videos and links to other science websites. This blog has won several blogging awards.

As the research suggests 92% of students find blogging relevant to their curricular needs and 72% finding a subject blog an effective way to learn. Clearly a blog is an information-dispensing device and has beneficial uses in the educational setting.

5.2.3 Blogging as a management tool
A blog by its true nature allows for archiving of material and creating reference points to material by the use of tags. These blogs are dynamic websites so if an Educator wanted to, their course material and resources would be available to them and their students via a blog. This would give any time, any place access to the Educator’s online classroom. Churchill found blogging added a new dimension to his teaching effectiveness, enabling him to do things that were not possible either with or without technology (Churchill 2009). His blog is now a place to publish the course curriculum, syllabus, class rules, homework assignments, handouts and presentations makes a Weblog a powerful course management tool (Churchill 2009).

Teacher B clearly uses his blog as a management tool, his classroom is online, and all of his resources are available to him and his students on the blog. The initial set up of the blog would take time and effort on behalf of the Educator. As with any new technology or educational tool the Researcher suggests that setting up the blog and maintaining the blog is time consuming. Both Teacher A and B stated;
‘For teachers who are not IT orientated it would be time consuming’.
(Teacher A)

‘It can take over your life. I would say it is addictive rather than time consuming. I do not think it is a burden on me’
(Teacher B)
Both teachers are IT orientated so it would appear that it would be time consuming but the benefit would outweigh the effort.

### 5.2.4 Blogging and blended learning
Lambe defines blended learning “as the combination of the following pedagogical approaches, problem-based learning, face-to-face classroom based learning and e-learning” (Lambe 2007, p.360). Both Teacher A and Teacher B use blended learning in their pedagogical approach to instruction. Clearly both of these teachers deem blended learning as the way forward.

### 5.2.5 Extension of the classroom
Any post to the blog is instantly accessible by students from school and from home. Moreover, the blog facilitator can easily manage who gets to access them through passwords and privacy measures (Edublog.com). With the use of technology and a blog, the home can now become an extension of the classroom and a place where every student gets an equal voice. (Sawmiller 2010; Flatley 2005; Quible 2005). This concept was put forward to both Teacher A and B, Teacher A felt that the blog was not an extension of the classroom as TY is very much activity based and not within the confines of a classroom, whereas Teacher B agreed that his subject blog goes beyond the classroom and outside school hours. He also revealed that he has made professional connections through his science blog and that the blog has won several awards.

#### 5.2.5.1 International links
This extension of the classroom can be seen with the international links created by the quad-blogging and the blogging challenge in School A. Teacher A found out about the quad-blog on twitter and joined the six hundred other schools. As mentioned in Chapter 4 her school is joined with Australia, America and the United Kingdom. One week each month School A takes the lead with blogging and the three other schools follow the blog for that week, in turn School A follows the blogs of the other schools for the remainder of the month.
Teacher B has developed international links with other science professionals and other teaching professionals both at home and abroad.

5.2.6 Blogging and the curriculum
Teacher B felt there is a disconnect between the current science curriculum and what is happening in the world of science. For this reason his blog has evolved into a general science blog and not just a blog based on the topics on the curriculum. In agreement with Teacher B, Sawmiller 2010 suggests as technologies change, corresponding changes need to be made in the curriculum to enhance student learning.

As one student commented:

“My main problem with the blog and why I disagreed with so many points is that it’s not particularly relevant to my courses. Its interesting but I wouldn’t say it contributes much to my leaving cert”.

(Student, School B)

5.2.7 Blogging and different learning styles.
A blog as an e-learning tool can open up learning to students who might otherwise be restricted through disadvantage or impairment (Holmes and Gardner 2006). The best lessons are the ones that embrace the most styles of learning. Classroom blogging can be differentiated to meet the needs of all students.

Teacher A and B were in agreement that their blogs allow learners to choose how to learn, when to learn and what to learn. Teacher A clarified that the learner needs clear signposting of where the learning is going. An issue that did occur for Teacher A was that students who had dyslexia were not as confident in writing their blogs but Teacher A assured them that it was not about the quantity of the blog but the quality of blog written.

‘Some students did say to me “Miss, I am not good at English or I have dyslexia, my posts won’t be long” that’s fine. It was to get them to reflect. Maybe if I had not put a link to all of their blogs from my blog…. they might have been happier with it’.

(Teacher A)

The research suggested that a blog promotes critical thinking skills, collaboration, and differentiated instruction by using multiple learning styles.
5.2.8 Blogging and teachers’ professional development

Teacher B explained that doors have opened for him professionally from writing his science blog. He now writes for the Irish Times newspaper, he sits in on a radio show and has been invited to attend IT conferences. Publishing to the Net may be a teachers opportunity to reassert themselves as the experts on education and the group that should be taking leadership in retooling classrooms for twenty-first century teaching and learning (Warlick 2005).

5.3 Blogging as a constructivist tool

Blogging supports the constructivist theory to encourage higher order thinking, that humans have the ability to construct knowledge in their own minds through a process of discovery and problem solving.

Hiler believes that blogging is a collaborative activity that encourages knowledge sharing, reflection and debate (Hiler, 2002). Richardson (2006) found that weblogs are truly a constructivist tool for learning and they expand the walls of the classroom. Weblogs seem especially well suited to constructivist learning due to the impact on reflection of one’s own work and thus continuous engagement with the learning content (Safran 2008; Granberg 2010; MacBride and Luehmann 2008). Huann et al. (2005) put forward the idea that the pedagogic use of blogging is grounded in Vygotsky’s theory, that it offers the student the opportunity to surface their ideas in a social plane. Ferdig and Trammel (2007) observe that there will be a natural tendency for reflection and analysis on the part of contextualization of learning through hypertext links to other materials thus encouraging revisiting, the revision of learned concepts and enriching the learning experience. A constructivist learning environment provides opportunities for students to publish artifacts of their learning, and then promotes feedback and reflection on those artifacts (Ferdig 2007, Churchill 2009).

School A demonstrated the true reflective nature of their blogs with 83% agreeing with the statement ‘I consider blogging an effective way to reflect’. Students were quite aware that they were reflecting when they were journaling their experiences in the blog. They entered clear, concise posts, a skill that will give them good real-world skills (Flatley 2005). This writing encourages critical thinking, cognition, and
metacognition by requiring students to actively think and process concepts taught in school (Sawmiller 2010). Students in School A were actively thinking as they carried out their activities in TY so they could reflect and write about them in their blogs. This reflective journal can be a vehicle for the student to define, question and interact with content, concepts, ideas, values, beliefs and feelings. (Brand and Hubb 2005).

5.4 Post-primary students as bloggers

5.4.1 Introduction
The rationale of this study was to discover and understand students’ attitudes toward blogging. In Chapter 2 the literature proposes that students are growing up immersed in digital media, they use it for shopping, learning and communication. These digital natives are accustomed to communicating differently to their educators. This study would agree that the students are digitally competent. They found the blog easy to create and to access and they enjoy learning this ‘new way’. But the quantitative data suggests that post-primary students are not bloggers. 99% of students did not have a blog prior to creating their TY blog and 65% would not continue to blog after TY. As the research therefore suggests, students do not use blogging as a communication tool.

5.4.2 Blogging and parameters
This section mainly deals with the students in School A as they wrote and developed their own blogs. Teacher A set parameters for students writing their TY blogs so that they fully understand the purpose and aim of their blogging. In agreement Sawmiller (2010) suggests before beginning a classroom blog, it is important to set parameters and expectations, as well as to identify ethical Internet usage practices.

5.4.3 Peer blogging
Wang & Hsua (2008) suggests that learning using a blog is meaningful and that students will negotiate meaning from their peers. By students thinking and reviewing the posts it lends itself to the reflective process. The findings from the quantitative data suggests that students enjoyed reading other students blogs and that they were happy and motivated when they received comments but they only posted comments when they were encourage to do so by Teacher A. Churchill (2009) found aspects of blogging that contributed most to the students learning were accessing and reading the
blogs of others. When asked during the interviews to indicate what they liked most about blogging, the participating students specified viewing the work of others and receiving comments on their work.

### 5.4.4 Blogging and dialogue

The findings from the quantitative data found that only 41% of students posted comments. Teacher A explained that she encouraged the students to post comments on other student’s blogs and that she regularly checked the comments. She noted that the comments were short and that no discussion or real interaction took place.

In Deng and Yuen (2010) study of student teacher blogging indicated that blogs are primarily a tool for personal broadcasting and researching. From Deng and Yuen’s study 70% of student teachers acknowledged that blogs foster a process of self reflection but found that irrespective of the fact that the overall level of student reflective thinking increased overtime, peer feedback to each other’s blogs did not promote reflective thinking. Deng and Yuen (2010) indicated that blogs are primarily a tool for personal broadcasting and reaching, but the potential of blogs for supporting extensive and dynamic dialogues within a learning community remains questionable.

### 5.4.5 Blogging and freedom of expression

A frequent comment found in the questionnaires and the focus group was the students did not want to commit their thoughts to text and especially within a blog. They clarified that they felt that the parameters that were set at the start of the year curtailed their writing as did the fact that their principal and teacher were reading the blogs. Lambe (2007) also found they were also aware that their words were archived and this might have the affect of inhibiting frank discussion.

Goh et al (2010) study has provided evidence of Singapore students’ perception of learning benefits of blogging in their course at a local polytechnic. They found four dimensions of student’s perceptions of learning benefits of blogging and they are efficiency, deliberation, de-personalization and collaboration. Students found that blogging is an efficient approach to learning as it saves them time. Students became more careful about what they wrote on blogs. Students deliberated before they wrote their blogs. Goh et al clarified this is a because Asian values are more conservative,
reserved, restrained, shy, cautious and introverted. They would approach blogging in a more practical way and students do to an extent learn collaboratively. Goh et al found while the features of blogs provide educators with new ways of teaching and create learning communities (which may go beyond classrooms), educators in Singapore may have to recognize some possible limitations and adapt their pedagogies to ensure that students are able to maximize their learning in a multi-faceted, technologically advanced and dynamic world. One of the major challenges for educators using blogging as a pedagogical tool for teaching is to get students to express their views and opinions more freely (Goh et al 2010).

5.4.5.1 Personal blog versus community blog
Teacher A was aware that students felt inhibited to write freely as their blog was now part of a community blog (all the student’s blogs were accessible from the main TY blog). Teacher A is considering changing this for the forthcoming academic year. Kim’s study investigated two different research results and discovered that students with a shared blog were less interested in blogging as compared with students with a personal blog. Thereby, the personalized-blogging circumstance might enhance online communication activities so that a shared blog environment might be unnecessary (Kim 2008).

Students may need to receive instruction on how to write a clear and concise post. Learning will only be effective if the students are given guidance on how to create a good post i.e what information to include in a good post, how to give feedback, how to respond to feedback given to a post, and so on. (Huann et al 2005). In agreement, Weller’s (2005) view is that educators still have an important role in helping students frame their thoughts and argument, and in constructing information they find online within a meaningful framework.

5.4.6 Blogging and motivation to learn
The statement put to the students was ‘This method of learning gave me the motivation to learn when it is convenient for me’. In hindsight this statement may have caused confusion but from students indicating they felt the blog was motivating them to learn with comments such as ‘interesting’, ‘informative’, ‘fantastic’ and ‘current’. Blogging can give the ‘silent student’ a voice by allowing them the
opportunity to write on topics of interest (Bragg-Barlett 2003). Joi Ito, the popular Japanese Blogger identifies the ‘fun of learning’ as a key motivational factor in blogging. (www.epic.co.uk). As the research suggests students are motivated to blog when their peers post comments to their blogs. Student work is available immediately for peers to review or for others on the World Wide Web to comment and post feedback. All of these factors can be motivating for students to learn (Sawmiller 2010).

5.5 Limitations of the research

A number of limitations in this case study need to be considered. Some of these limitations are in relation to the scope of the research question, the selection of students and others, which were beyond the control of the researcher.

• The scope of the research was very broad. The researcher investigated blogging as an educational tool and the activity of students as bloggers and this negatively affects the reliability, credibility and validity of the case study results. The researcher could conduct action research in order to validate the results.

• Both schools chosen have a very good IT structure and the blog facilitators are IT literate so these findings cannot be generalized. It would be interesting to carry out a similar study in a different school with teachers who have basic IT skills.

This case study was conducted with two post-primary student groups in two different schools as the researcher did not have access to her own students while she was on maternity leave. This negatively affects the reliability, credibility and validity of the case study results.
5.6 Conclusion

This chapter outlined the findings of the case study in relation to the literature reviewed in Chapter 2. The general finding is that blogging is an effective pedagogical tool. In this study it was clear that blogging could be used as an information-dispensing device, management tool for resources and to develop and create educational links both at home and abroad. It is clear from the study that blogging can be used a reflective tool with its archiving system for later retrieval of information. Its ideal use as demonstrated in School A is to create portfolios of work. The final finding is that despite the notion that post-primary students are bloggers; the research suggests they are not natural bloggers and while they enjoy the experience of creating their blogs, they do not have dynamic discussions with their peers.
6.1 Introduction
This case study investigated the use of blogging as an e-learning tool in post-primary schools. The participants in this study were students and their teachers from two post-primary schools. This chapter will outline the research findings and give recommendations for further research in this area.

6.2 Outcomes of the case study
The overall aim of this case study was to investigate the use of blogging as an e-learning tool in post-primary schools. The objectives were as follows:

- To investigate if blogging is an effective pedagogical tool.
- To explore blogging as a constructivists tool.
- To study Irish post-primary students as bloggers

The findings of this case study were as follows:

- Blogging is a valuable pedagogical tool for post-primary teachers.
- Blogging is a constructivist’s tool.
- Post-primary students find e-learning (blogging) an effective way to learn.
- Post-primary students do not use blogging as a communication tool.
6.3 Recommendations for the use of blogging in post-primary schools

The researcher will outline the uses of blogging in post-primary schools.

6.3.1 Subject blog
Create a subject blog. An important issue is the availability of a computer, broadband and a data projector to each classroom. There still is an issue of inadequate infrastructure in some schools. We need an updated infrastructure that can deal with the emerging technologies.

6.3.2 Teachers and continuous professional development
Teachers need to be agents of change and to embrace this e-line learning. In-service is available and organized by the NCTE based on web 2.0 technology. All educators should be encouraged to participate in these in-service courses, as it will lead to personal expertise. Social software provides opportunities, both good and bad for our future teachers and for their students. It is crucial that the educational technology and teaching community understand how these tools can be and are being used (Ferdig 2007).

6.3.3 School management
School management should be the leaders as regards the motivation to use e-learning. The NCTE and the Department of Education and Skills are recommending that all schools should have an e-learning plan in place. This e-learning roadmap is a planning tool to help schools identify where they are at in relation to e-learning and where they would like to go. Currently the NCTE offers free courses on the e-learning roadmap.

6.3.4 Students
The research suggests students deem e-learning and blogging an effective way to learn. The students can access the information they require, they can access their class notes and they can learn from the blogs and by blogging.

Students do not use blogging to communicate with each other. The research suggests that students may lack confidence when writing their blogs or that they do not have
the literacy skills. Students need to be taught how to best write a blog so as to maximize its effectiveness. Weller 2005 found educators still have an important role to play in helping students frame their thoughts and arguments and also in constructing information they find online within a meaningful framework. Literacy is about communication. It is about reading and writing. Blogging is about communication.

6.3.5 Curriculum change
There is a mismatch with the way educators teach and what is happening in the real world and what is happening in the lives of our students as regards the use of technology. The ‘twitch speed’ students as mentioned in Chapter 1 are handwriting most of their assignments, handwriting their notes, carrying heavy bags of books and then going home to technology. Is it sufficient to use a power point presentation and claim that we have thereby incorporated ICT into our subject area? E-learning has arrived; the curriculum and educators need to catch up.

6.4 Recommendations for future research
The scope of the research question was very broad, to investigate blogging as an e-learning tool in post-primary schools. Future research could be carried out in the following areas:

- A case study on student blogging activity before and after instruction on how to write a blog.
- Action research on the design and development of a subject blog and the educational value to the educator and students. The pedagogy behind blogging ought to be developed.
- Research on Twitter and its educational value. Twitter is an online social networking and microblogging service that enables its users to send and read text-based posts of up to 140 characters, informally known as "tweets." There has been an explosion of twitter accounts in the past year for example #edchatIE: Which is a weekly discussion by Irish educators.
6.5 Conclusion
In conclusion, the age of e-learning has arrived, blogging has been shown to be an effective educational tool because students find it an effective way to learn. As the research and literature suggests educators need to embrace e-learning and combine it with traditional teaching methods. This blended approach is needed in order to engage and motivate our students most of whom were born after 1998. However this case study has investigated blogging as an e-learning tool in post-primary schools. Some interesting findings were produced based on e-learning, blogging and education. This case study focused on one e-learning tool namely blogging and the setting was only two schools, future research is needed to further validate the findings of the study.


Appendices

Appendix A

Permission letter

The Derries,
Ballybrittas,
Co. Laois.
01/04/2011

Dear Principal XXXX

I am writing to ask permission to conduct a research study within the school. The research study is being submitted as the part requirement for the Masters in Digital Media Development in education at the University of Limerick.

The overall aim of this study is to investigate blogging as an e-learning tool in post-primary schools.

In order to carry out this survey I plan to distribute questionnaire to the Transitions Year Students who created and developed their own blogs.

The anonymity of the school and all staff members will remain confidential and neither the school nor any of the participants will be identified in the final report.

Yours sincerely,

_____________

Patty Conroy
Appendix B
Permission letter for a focus group

The Derries,
Ballybrittas,
Co. Laois.
03/05/2011

Dear Principal XXXX

I am writing to ask permission to conduct a focus group with the TY students in your school. The research study is being submitted as the part requirement for the Masters in Digital Media Development in education at the University of Limerick.

The overall aim of this study is to investigate blogging as an e-learning tool in post-primary schools.

In order to carry out this focus group, I plan to interview approximately ten students in TY and digitally record the student’s responses.

The anonymity of the school and the students will remain confidential and neither the school nor any of the participants will be identified in the final report.

Yours sincerely,

_____________

Patty Conroy
Appendix C
Research Instrument to School A

Name:
Age:

Please read carefully and place a √ in the appropriate box.

<table>
<thead>
<tr>
<th>Q1. The xxx Blog provides information relevant to my curricular/educational needs.</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Don't know</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2 The xxxx Blog is user friendly.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Don't know</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>Q3. The xxxx Blog helps me acquire class notes/information.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Don't know</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>Q.4 It is helpful to reflect/look back at work posted on the blog.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Don't know</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>Q5. It is easy and convenient for me to access the xxxx Blog</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q6. I post comments/tweet on the xxxx Blog.</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q.7. I read the comments/tweets posted.</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q.8 I consider this an effective way to learn</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q.9 This method of learning gave me the motivation to learn when it is convenient for me.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Don't know</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>Q.10 This method of learning suited my level of ability.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Don't know</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
</tbody>
</table>
Q11. Describe what you like best about this e-learning experience (Blogging)

Q12. Describe what you least like about this e-learning experience (Blogging)
# Appendix D

## Research Instrument to School B

**Name:**

**Age:**

<table>
<thead>
<tr>
<th>Question</th>
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<th>Agree</th>
<th>Do not know</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
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<td>Agree</td>
<td>Do not know</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
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<td>Q2 The xxxx Blog is user friendly.</td>
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<td>Agree</td>
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<td>Disagree</td>
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<tr>
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<td>Agree</td>
<td>Do not know</td>
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<td>No</td>
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<td>Agree</td>
<td>Do not know</td>
<td>Disagree</td>
<td>Strongly disagree</td>
</tr>
</tbody>
</table>
Q11. Describe what you like best about this e-learning experience (Blogging)


Q12. Describe what you least like about this e-learning experience (Blogging)


Appendix E
Focus Group in School A

The purpose of this interview is to review the use of blogging as an e-learning tool in a post-primary school.
I am requesting that the interview be digitally recorded for transcription purposes only. The recording will be erased after the transcribing has been completed. This transcription will be confidential. At no stage will your identity be revealed, a coded system will be used at all times to identify quotes and participants and this coding will not be revealed.
This is a semi-structured interview. I have a series of questions that I would like to present to you. If wish to stop the interview at any stage or seek clarification on any point please feel free to do so.

PC
Did you blog everyday

Student (all)
No, twice a week.

Student A
I did,

PC
Why did you blog everyday?

Student A
I just liked it.

Student B
We were told to blog twice a week, there were sometimes we would not blog in the week and then we would blog four times the following week. Some weeks I had nothing to say and some weeks we were really busy.
PC
The weeks you had nothing to say where they the weeks that were less in activity in TY.

Students (All)
Yes. It was more that we had normal class. This year we have no text books, it is not a set class.

PC
Did you write freely or were you self conscious when you started writing?

Students
Yes, at the start. We were not allowed to say certain names.

Teacher
The rule was not to identify the teachers by their names, and not to identify students by their names.

Student
We were also conscious about posting images, we had to ask permission of other students if they were in a photograph.

Student
Getting used to the rules was kinda hard but then we got used to it.

Student
Also learning the rule of copyright, like getting images from Google.

PC
A comment that was frequently used, you did not like revealing your personal feelings or personal thoughts or about your personal life.

Student
You couldn’t because everybody would read it. And the Principal would be reading it and we had to censor it. We were not allowed use slang words

**PC**
Did you stay within the boundaries set for you?

**Student**
Yes

**PC**
Did you write a lot on each topic or did you keep it brief?

**Student**
It depends on how much you liked the topic or activity. For example with the work experience, you would write loads., or a trip out of the school. But on other things, we went here, we had a great day and what we learned. That was it.

**Student**
It also depends on the person.

**Student**
It was kind tedious. We had to think back over everything that we did and remember how you felt and then write about it. It was long

**PC**
Did any of you get international posts.

**Student**
Some people in the class did. Those who took part in the blog challenge did. They got posts from Columbia, America and Australia. It was interesting, one comment was that they did not know people from Ireland spoke English.

Each blog had a little map and told you what country was looking at your blog. That’s cool! They were just looking at your blog but did not leave a post. You can also see how many people were looking at your blog.
Student
I had a comment from Hong Kong.

PC
The term reflection what does it mean to you?

Student
Looking back over things. Taking time out to look back on your action.

PC
Has the blog help you reflect

Student
Yes as you would think more on what you did when you go back over it.

PC
Will you go back into the archived of your blog?

Student
I would yes, on the big things we did. I would not look back on cooking because I did not enjoy it.

PC
Would you reflect more if you had embedded video or photographs.

Students
Yes but the memories live in the words.

PC
Did you notice any personal development from starting blogging.

Students
One thing for me, if we went on a trip I would be thinking I could put that in the blog as before we would just go and the trip and not think. I learned to retain the information so I could use it in my blog.

PC
Would you have blogged if it was not mandatory?

Student
No, I had never heard of it before. One girl had their own personal blog.

PC
Will you continue blogging?

Students
No

Student
Yes, I liked it.
Appendix F

Interview with teacher in school A.

The purpose of this interview is to review the use of blogging as an e-learning tool in a post-primary school.

I am requesting that the interview be digitally recorded for transcription purposes only. The recording will be erased after the transcribing has been completed. This transcription will be confidential. At no stage will your identity be revealed, a coded system will be used at all times to identify quotes and participants and this coding will not be revealed.

This is a semi-structured interview. I have a series of questions that I would like to present to you. If you wish to stop the interview at any stage or seek clarification on any point please feel free to do so.

PC
What was the main reason you created your TY blog?

Teacher
So that students who are considering TY in the following year would have a good idea of what the TY programme in school A is all about and also to inform the parents of the different TY activities that we get up to. So basically it takes away the idea that TY is a doss, so a means of communication I suppose. It is information to the parents, you want to know what we do here is a report, you want to know what happens at young scientist, here is a report, and so it is information dispensing to the greater community.

PC
You created your blog and your students added their pages to the blog, they had their own individual blogs.

Teacher
When I first created the blog, as TY co-coordinator I would ask the students to email me reports about different activities they had been out on and I updated it. Last year I decided to ask them all to do their own blog and I created a page with links to their individual blogs.

**PC**

The main findings from school A, yes they thought it was a brilliant experience for reflection and for looking back, creating their memories and a diary type experience but there were a good few comments about not liking putting their personal thoughts on the blog and they did not like other people reading their personal thoughts.

**Teacher.**

The reason why I asked them to create their own blog last year was because in previous years TY always created a folder of excellence so although out the year they would update a word document and at the end of the year they would print off this word document and put it down in the hall for their parents and everybody else to read about their TY year, it was always very stressful at the end of the year when it came to printing, the printer would run out of cartridge etc so I said well lets go digital, lets keep your memories of TY in a blog. They were not asked to put anything personal, they were actually told not to be personal and the condition was if you did not want the Principal to read it, do not write it. So it was an account of their TY year, so if they thought it was personal, it wasn’t meant to be personal. But I had been over this at the beginning of the year, we had agreed the conditions moving forward, we agreed we wouldn’t name anybody, photographs would only go up with peoples permission, it was only going to be about their TY

**PC**

You set the parameters at the start of the year?

**Teacher**

Yes, they agreed the parameters at the start of the year. I think that some of the students that said they did not like people reading it, it might have been that they were not confident in their writing style or their English. I was only looking for two posts a week. It did not have to be a big essay or anything like that.
PC.
This may be an area for further research, it appears that students love reading the posts, they enjoy the experience of blogging but a lot like sitting on the fence as bloggers, the silent blogger, they will read what other people write but do not have the confidence to express themselves or do not have the literacy skills.

Teacher
Some students did say to me “Miss, I am not good at English or I have dyslexia, my posts wont be long” that’s fine. It was to get them to reflect. Maybe if I had not put a link to all of their blogs from my blog…. this made their blog obvious they might have been happier with it.

PC
Do you think that this TY blog expanded your classroom beyond the four walls?
Teacher.
No because it is not a subject blog. But it does expand what I can tell the forthcoming students. I had 40 mins with the 3\textsuperscript{rd} Years, are you thinking of TY, here is what it is all about, now I can say go look at our blog. The incoming TY has their work experience organized because they went to the blog and they went to all the girls and found out where they did their work experience and were able to the get the contacts from them. So I now see the benefit but I am only blogging two years.

PC
Some of the literature is saying the same, students will write if it is a personal blog but in a community blog they are not as confidence to write.

Teacher
There was a flurry of activity at the beginning of the year on the technical side, setting it up, changing their templates, changing their color schemes that entire technical thing.

PC
Discussion of main findings…
A lot of schools A students were not bloggers, they found it easy to create, they found it easy to access, they read the blogs, they comment on the blogs but more when instructed to or rarely.

**Teacher**
Through out the year I would have said, have you read each other’s blogs, leave a comment on each other’s blogs so might have been a reminder from me. I checked their blogs regularly and checked the comments and show them how to moderate their comments, so all comments were moderated on their blogs and only when they were happy that it was an appropriate comment would they post it to their blogs. A lot of the comments were very short. They was no discussion that took place, they was no real interaction.

**PC**
It was an encouragement when they did leave a short comment.

**Teacher**
I think they liked student A’s blog, student A was a prolific blogger. I think the rest of the class really enjoyed the fact that she did so well and they liked to encourage her. On her particular blog she had 26 comments on her guest book alone.

**PC**
More findings
Student found blogging a great way to express themselves and to reflect. Now 65% of students said they wont continue blogging afterwards.

**Teacher**
Of all the blogs, I kept them live all summer; student A is the only one who has blogged over the summer. I do not whether any of the other students have gone on and created personal blogs.

**PC**
Has there been any development from your TY blog
Teacher
One student has been very successful at the blogging; she won the Irish blog award youth category. She has been contacted by TG4 to go and do an Irish language programme for them, she has also been contacted by RTE they discovered her blog when they were doing research and she has been interviewed by RTE for a prospectus position on teen panel. She was also asked to attend an arts festival to speak about youth blogging. Reading her blog her writing style has changed in the space of one year, her confidence has improved so much, and she is now using her blog as a personal blog and is writing about serious issues.
I have other comments from students in other schools, that they wished they had a TY blog.

PC
So you are getting outside comments as well?

Teacher.
Yes. Last year we took part of the student challenge blog, we connected with schools in Australia and New Zealand. This year we are doing quad-blogging, which is four schools in a quad, and one school takes a lead. They other three schools visit their blog for one week and there is lots of interaction.

PC
How did you set that up?

Teacher
I joined quadblogging.com; I saw it on twitter during the summer and signed up to it. It is a deputy principal somewhere in England has set it up and he has 600 schools from around the world. In our quad we have a school from Australia, the UK, and America. The students like the idea that students from around the world were visiting their blog.

PC
Do you find it time consuming
Teacher
Not really but for teachers who are not IT orientated it would be time consuming.
Appendix G

Interview with teacher in School B.

The purpose of this interview is review the use of blogging as an e-learning tool in a post-primary school.

I am requesting that the interview be digitally recorded for transcription purposes only. The recording will be erased after the transcribing has been completed. This transcription will be confidential. At no stage will your identity be revealed, a coded system will be used at all times to identify quotes and participants and this coding will not be revealed.

This is a semi-structured interview. I have a series of questions that I would like to present to you. If wish to stop the interview at any stage or seek clarification on any point please feel free to do so.

PC
What was the main reason for you creating the blog?

Teacher
I suppose there were two things; one of my colleagues from another department encouraged me to create the blog after he had found great results with his blog. It was more of an experiment to try it out and I quickly realized that it did have a purpose in terms of motivation and getting the students enthused about science. It really was trying to see science as not just a set of facts and definitions and formulas in a textbook. It is a process, its currently happening all the time. There is more than the textbook.

PC
Do you find it time consuming

Teacher
Yes, it can take over your life. I would say it is addictive rather than time consuming. I do not think it is a burden on me.
PC
Do you use net vibes?

Teacher
Blogger is the main platform I use, and then from the blog I use twitter, net vibes and other little things to add to the blog, they supplement it really. Net vibes is set up and never really goes away.

PC
Apart from the blog you have links to your class notes and videos, which are relevant to your curricular work, do the students access those notes?

Teacher
Yes. They would get them through the intranet. I am currently moving them onto Google docs.

PC
A frequent comment from your school was that the Internet was very slow.

Teacher
We had a private network and we have moved over to the NCTE broadband scheme. The big problem we had on our school, it is such a vast campus that is very difficult to get good wi-fi signal, there are 50 wi-fi points around the school, because the school is built behind a hill and the building are made of stone. We also had problems with our bandwidth.

PC.
Who are the main readers of your blog and who contributes mostly to your blog?

Teacher
I write the blog, the students write 5-10%. They are the junior reporters, they would be given a target of 3 articles per term, and I rarely get the 3 articles from each student. They tend to be TY students that contribute. In terms of people who read it,
obviously the pupils read it and a lot people from all over the world; through twitter I have connected to the public and other science writers/communicators.

**PC**
They read the blogs but do they tweet back to you?

**Teacher**
They would tweet back to me or they would post comments depending on the nature of the story. Now what I have done of late I have suspended comments on most posts and I only put comments on post that I want. So things like a video that I am recommending I am not going to request comments. For example if it is an opinion piece, I did an opinion piece on RTE and a science programme. It has got a fantastic response in terms of tweets and comments back and you know it really had taken off. Producers from RTE contacted me via Twitter.

**PC**
Do you find that the blog is a true extension of your classroom?

**Teacher**
I think the nature of the blog has changed hugely and that is down to what has been happening I suppose in terms of my connections through the blog, when I started writing I was a science teacher and that was basically it, since then it has changed completely because the blog has opened up huge avenues for me professionally. I now write a piece for the Irish Times, I was asked to speak at conferences, asked to do radio shows that kind of thing and its been mad. I think because of that, because my view, my perspective on science communication has changed. The blog has changed and to a certain extent then maybe…then looking at the extension of the classroom has slightly changed as well.

**PC**
Has the blog evolved away from the science curriculum?
Teacher

Yes, I have been thinking about this a lot, has it lost the purpose? Has it gone from being a school based blog which is their purely for the purposes of motivating my students, publishing my students work to something that’s detached from that. A science blog. I have been debating it myself do I detach it from the school but still use it in my class.

The blog has been enormously successful in terms of keeping me motivated to teach. A lot of the time, as science teachers we can get so engrossed in the curriculum we ourselves forget that there is a world of science that is currently happening and changing and we do not keep up to date with science. A lot of the stuff that’s coming out in the news is very relevant to what we are teaching.