Exploring the benefits of participating in an eTwinning project for small collaborative groups in a primary classroom setting

Case Study

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Declaration

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

Signed: _____________________________

Geraldine Kane

7/10/2011
Abstract

Exploring the benefits of participating in an eTwinning project for small collaborative groups in a primary classroom setting.

Case Study: Geraldine Kane.

This case study set out to explore the benefits of participating in an eTwinning project for small collaborative groups in a primary classroom setting. A class in France was chosen as the European partner for the project. However, this case study focused only on the findings from the Irish class. The study examined the ease of use of the eTwinning TwinSpace platform. It also examined the interaction, communication and collaboration within small groups and the motivation of the students when using computer technology. The affective and cognitive aspects of learning were examined to ascertain if participation in an eTwinning project can promote broad based learning among primary school students. Both quantitative and qualitative methods of data collection were used in this case study.

The study involved dividing the Irish class into five groups of four members. Each group researched and collaborated on a topic related to their local area. Information gathered on their group topic was exchanged with the other groups in their class and also with their French partner class through the TwinSpace platform. This was achieved by the students using a variety of computer tools and applications.

The study concluded that participation in an eTwinning project is extremely beneficial for primary school students, both cognitively and affectively. They were intrinsically motivated in the project and continued their learning outside of school time. However, this case study did find that younger children and/or those unfamiliar with computers may have some difficulties using the TwinSpace platform and recommends some amendments and additional functions. The formation of small groups increased collaboration and enhanced the student’s personal development and social skills. However, careful member selection and group behaviour monitoring, especially where younger students are concerned, is imperative in order to avoid conflict within small groups.
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My Brother, Peter Kane.

My Husband, Conor Fennelly.
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<th>Full Form</th>
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<tbody>
<tr>
<td>BECTA</td>
<td>British Educational Communications and Technology Agency</td>
</tr>
<tr>
<td>CVLE</td>
<td>Collaborative Virtual Learning Environment</td>
</tr>
<tr>
<td>DES</td>
<td>Department of Education and Science</td>
</tr>
<tr>
<td>HCI</td>
<td>Human Computer Interaction</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communications Technology</td>
</tr>
<tr>
<td>LATCH</td>
<td>Location, Alphabet, Time, Category and Hierarchy</td>
</tr>
<tr>
<td>MKO</td>
<td>More Knowledgeable Other</td>
</tr>
<tr>
<td>NCTE</td>
<td>National Centre for Technology in Education</td>
</tr>
<tr>
<td>NDP</td>
<td>National Development Plan</td>
</tr>
<tr>
<td>NSS</td>
<td>National Support Service</td>
</tr>
<tr>
<td>VLE</td>
<td>Virtual Learning Environment</td>
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<tr>
<td>VARK</td>
<td>Visual, Auditory, Reading and Kinaesthetic</td>
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Chapter 1: Introduction

1.1 Introduction and Background

All learning takes place in one of three ways, students working alone, students competing against each other or students working together to achieve a common goal. Johnson and Johnson (1994) state that while all three should be part of a student’s education, collaborative learning should be the dominant method of learning. The Irish Primary School Curriculum acknowledges the importance of collaborative work in the classroom. It states that the:

Experience of collaborative learning facilitates the child’s social and personal development, and the practice of working with others brings children to an early appreciation of the benefits to be gained from co-operative effort.  
(Department of Education and Science 1999, p.17)

Working in collaborative groups appears to be more satisfying for students (Johnson et al. 1991) and has social and academic benefits for children (Dillenbourg 1999). Evidence has shown that students will learn more effectively if “they are happy in their work, believe in themselves, like their teachers and feel the school is supporting them” (Weare 2000, p.5). The Irish primary school curriculum supports this by acknowledging that it is “widely recognised that the child’s social and emotional development significantly influences his or her success in learning” (Department of Education and Science 1999, p.16). Using computers for collaborative group work can accommodate different learning styles and cultures easily (Muller and Perlmutter 1985).

An eTwinning project is a simple way to communicate and collaborate with another school in Europe using a variety of web based tools and applications. It is a European Commission initiative, based on partnerships between European schools. The eTwinning web based portal is used by teachers to ‘establish partnerships’ with other European schools at primary or secondary level (Foundation for the Development of the Education Centre 2009). Each project is assigned its own individual virtual learning environment (VLE) called a TwinSpace. This TwinSpace platform enables students to communicate and collaborate using a variety of web based tools. Students participating in an eTwinning project use a spectrum of intelligences which maximises their learning potential. Students have access to different forms of media such as text, images and video which allows them to develop different skills while actively learning (Komninou
An eTwinning project facilitates a broad based approach to learning as it not only focuses on cognitive aspects but also on affective aspects of learning.

1.2 Research Topic

1.2.1 Research Question

The purpose of this case study was to explore the benefits of participating in an eTwinning project for small collaborative groups in a primary classroom setting. The research questions were set out as follows:

- Can primary school students effectively use the TwinSpace platform as a VLE?
- How do primary school students interact, communicate and collaborate within a group when using computer technology?
- Are primary school students intrinsically motivated when using computer technology?
- Does participation in an eTwinning project promote broad based learning among primary school students?

1.2.2 Research Context

The study was conducted in a small rural school in east Galway, in the west of Ireland. An eTwinning project entitled ‘Our Local Place’ was created. The project incorporated cross curricular studies and an intercultural experience. The project required students to use a variety of computer tools and applications. The Irish participants were a combined fourth and fifth class of mixed gender and mixed learning abilities. For the purpose of this study they will be referred to as one class. This class consisted of twenty students aged from ten to twelve years. The partner class chosen to be involved in the project was a class in a primary school in the north of France. This partner class was chosen as the students were of similar age and abilities. This class consisted of twenty four students. This was the first eTwinning project either class had participated in. The study focused on the findings of the Irish participants only.
1.3 Relevance of the Study

The eTwinning programme is a relatively new European Commission initiative. It was launched in Poland in 2004 with its opening conference in Brussels in 2005. Statistics released from the eTwinning press corner in August 2011, gave the number of registered schools in the thirty two European countries as 85,642, with the amount of active projects being 11,309. The number of registered schools in Ireland was seven hundred and fifty three with ninety seven active projects registered. This number is increasing steadily.

As it is a relatively new programme, very little independent research has been undertaken in relation to eTwinning projects and their benefits for primary school students.

This case study presents recommendations for a basic TwinSpace platform to be designed for younger students or those with little or no experience of computers and for additional functions to be made available on the existing TwinSpace platform. It also offers some guidance when considering the selection of group members for small collaborative groups of primary school students.

It is hoped this research will assist teachers who are planning to develop, or participate in, an eTwinning project especially in relation to organising primary school students into small collaborative groups. However, it is important to emphasise that, as this case study focuses only on one class over a ten week period, further research is required to validate the findings of this study.

1.4 Research Methodology

A case study approach was adopted for this research. Data was collected using both qualitative and quantitative data collection methods. Students undertook pre and post-tests, completed a questionnaire and participated in group interviews. Group observation was also used as a method of data collection by the researcher. This case study approach allowed the researcher to gain a holistic view of the students’ participation in the project, which gave a clear understanding of the findings, as data collected involved using multiple sources of information (Gummesson 1991).
The Irish class was divided into five groups and each group researched a particular topic related to their local area. The group members were decided upon by results from a ‘multiple intelligence’ test and teacher observation. The participants’ gender was not taken into consideration. Each group, consisting of four members, had access to one computer during the study. Each student had equal time on the computer. The duration of the project was ten weeks.

1.5 Structure of the Research Study

Chapter 2 reviews the literature relevant to this study and is divided into seven sections. Section one introduces the chapter. Section two reviews the learning theories: behaviourism; cognitive; constructivism; multiple intelligences and connectivism. Section three discusses learning styles and examines a ‘multiple intelligence’ approach in the classroom. Section four explains the importance of affective learning for students and discusses motivation in detail. Section five reviews the literature and previous research undertaken in relation to group work and discusses communication and collaboration. It also explores the development and dynamics within groups. Section six focuses on computer technology in the classroom and discusses interface design. It explores the benefits and concerns of using computer technology in the classroom and discusses computer technology in relation to Irish schools. It examines Web 2.0 and its benefit for the classroom and discusses VLE’s and effective e-learning. It also examines eTwinning and discusses the TwinSpace platform. Chapter 2 concludes with a brief summary of the topics reviewed.

Chapter 3 highlights the research questions relevant to this study and examines the research setting and project outline. Two research approaches, action research and case study research, are discussed. The justification for using a case study approach for this research is explained. The data collection tools used for this study are described in detail. Reliability and validity in relation to the data collection tools used in this study are examined. Triangulation is discussed and the ethical issues are examined. Finally, the timeline for this case study research is outlined.

Chapter 4 presents the findings from this case study research. The findings are divided into four sections relevant to the research questions. The first section examines the primary school students’ effective use of the TwinSpace platform. The second section discusses the findings of group interaction, communication and collaboration. Section
three relates to the findings in relation to the motivation of the students while using computer technology during the project. Section four reports on the findings related to the benefit of an eTwinning project in promoting broad based learning among primary school students.

Chapter 5 discusses in detail the analysed findings of this case study and compares and/or contrasts these findings to the existing body of knowledge as outlined in the literature review in Chapter 2. Again, this chapter is divided into four sections and each section is relevant to a research question. This chapter concludes with the limitations of this study.

Chapter 6 presents the conclusions of this case study and offers recommendations arising from this research. However, as this case study focused only on one class over a ten week period, further research is required to validate the findings of this study.
2.1 Introduction

This chapter will discuss learning theories and learning styles. It will focus on a ‘multiple intelligences’ approach in the classroom and discuss the importance of affective learning. It will examine collaborative groups and the dynamics involved in such groups. It will also examine the role computer technology plays in the classroom. It will address how combining these technologies with group collaboration can be beneficial to primary school students.

2.2 Learning Theories

2.2.1 Introduction

Learning theories attempt to describe how learning occurs. They can be defined as a process that brings together different influences and experiences, for acquiring, improving, or making changes in a person’s knowledge, skills, values, and world views (Illeris 2001). Learning as a process focuses on what happens when the learning takes place.

2.2.2 Behaviourism

The central notion of the Behaviourist theory is that a reaction occurs to a stimulus. We can observe behaviour which is referred to as ‘learnt behaviour’ in a wide range of situations. This implies that learning is simply acquiring a new behaviour which is known as ‘conditioning’. There are two types of ‘conditioning’, Classical and Operant (Pritchard 2005). Classical conditioning refers to the reinforcement of a behaviour which occurs as a response to a stimulus. Reinforcing the resulting behaviour increases the probability that the behaviour will occur again. Operant conditioning is the most important type of behaviourist learning. This involves reinforcing by means of a reward or punishment (Johnson et al. 2001). Skinner (1968) gathered much of the experimental data in the field of operant conditioning. He explored topics such as instruction, motivation, discipline and creativity (Skinner 1968 cited in Schunk 2009). He believed that reward or punishment control most human behaviours and that operant conditioning could explain all human learning (Johnson et al. 2001).
Traditional classroom learning is based on the Behaviourist Theory. The teacher initiates actions and interactions. Learning happens when knowledge is transferred from the teacher to the student. Learning is therefore defined as a change in behaviour in the learner. To apply behaviourism effectively in the classroom there must be a clear idea of the behaviour to be encouraged and reinforced. The nature of the reinforcement must also be clearly established (Woollard 2010).

Although this theory is now mostly challenged by current cognitive theories of learning, it is still very much in use to enhance student learning and behaviour (Morris 2003). Teachers find that rewarding good behaviour in the classroom can result in appropriate behaviour which can be conducive to learning (Woollard 2010). Critics however argue, that rewarding children for learning will most likely result in the loss of interest in the learning itself and could result in children becoming demotivated (Pritchard 2005). The Behaviourist theory of learning does not develop the student’s ability to work with other students in group situations.

2.2.3 Cognitive

Piaget studied the process of cognitive development. He investigated the psychological development of children. He called for teachers to understand the steps of development in a child's mind. He believed that for a child to understand s/he had to discover for themselves. This would enable the child to be productive and creative and not just simply repeat what they heard from their teacher (Plotnik and Kouyoumdjian 2011).

Cognitive psychologists began to focus their attention on the development of mental abilities. Bruner (1966) stated that subjects should not be taught in order to “produce little living libraries on that subject” but that students should take part in getting the knowledge for themselves, “knowing is a process, not a product” (cited in Witt and Ulmer 2010, p. 271).

2.2.4 Constructivism

Constructivism has, in recent years, been increasingly applied to learning and teaching. The basis of the Constructivist theory is that learning happens when knowledge is constructed through scaffolding in the brain. Scaffolding can be presented in different ways e.g. through discussion, through providing materials or by designing suitable tasks appropriate to the student (Pritchard 2005). Vygotsky's ‘Social Development Theory’ is
one of the foundations of the Constructivist theory. He believed that social interaction is required in the development of understanding and that community plays a central role in this social interaction. His ‘Zone of Proximal Development’ (ZPD) and 'More Knowledgeable Other' (MKO) form the basis of the scaffolding from which to build understanding (Santrock 2004). The ZPD is the area just above the level of understanding where a learner is at any given point and where they will move into next. The learner is able to work effectively here but needs support (Kail and Cavanagh 2010). The MKO refers to someone who has a better understanding or higher ability level with regard to the task than that of the learner. The MKO is often the teacher but could also be the learner’s peer (Santrock 2004). In a classroom situation the teacher is often the MKO, engaging groups in dialogue and supporting the development of understanding which facilitates ‘scaffolding’ in the brain. Prior knowledge plays a very important role in constructivist learning. Hence, it is vital that the starting point is already known and understood in order for any new learning to be effective (Pritchard 2005).

In a constructivist classroom the emphasis is on the student’s ownership of the learning through constructing their own meanings. These students are not only the consumers of knowledge but also the producers of knowledge (Oldfather 1999). A Constructivist teacher does not simply impart information by rote to his/her students but allows them to explore and discover for themselves (Prawat 1992). Constructivism has become an appealing alternative to traditional educational practices. It promises to create lifelong active learners who can apply their skills to appropriate needs in the future.

### 2.2.5 Multiple Intelligences

Sternberg (1986) suggested a ‘triarchic theory of intelligence’ based on three forms of intelligences. A person whose intelligence strength is Analytical will have the ability to analyse, compare and contrast with ease. A person with a Creative intelligence will enjoy creating or designing. A person whose intelligence strength is Practical will have the ability to use, and implement easily (cited in Santrock 2009).

In the 1980’s the psychologist Gardner (1999) recognised that people have different cognitive strengths as well as cognitive styles. He proposed eight forms of intelligences. The intelligences are like talents or gifts and there are many different combinations. These intelligences can also be strengthened in the individual.
He identified the *Verbal/Linguistic* intelligence as the ability to use language to describe events. A person with this intelligence strength enjoys reading and all things literary. A person whose intelligence strength is *Logical/Mathematical* will solve problems using logic. He identified the *Musical* intelligence as the ability to understand and develop music. A person with this intelligence strength may have sensitivity to pitch, melody, rhythm, and tone. The ability to visually perceive the world and creatively translate ideas into visuals is attributed to *Spatial* intelligence. A person whose intelligence strength is *Bodily/Kinesthetic* has the ability to use the body effectively to express oneself. They may also have the ability to build and repair. The *Interpersonal* intelligence is identified as the ability to understand people and relationships while a person whose intelligence strength is *Intrapersonal* has the ability to understand oneself and empathises with others. The eighth form of intelligence is the *Naturalist*. A person with this intelligence strength has the aptitude for observing nature and may also have the ability to recognise and classify features of the environment (Gardner 1999).

Even though Gardner’s (1999) ‘Multiple Intelligence’ theory was addressed to psychologists, the educational community acknowledged Gardner’s theory (Komninou 2010). Many teachers changed their view of how students learn. They accepted that all students learn differently and that these differences should be reflected in education. Gardner (1999) stated that students should have the opportunity to work on certain topics of interest in detail instead of having to work on everything contained in a rigid curriculum system.

### 2.2.6 Connectivism

Siemens (2005) proposed another learning theory which recognises the impact that technology has on society and ways of acquiring knowledge. He called this theory Connectivism. He proposed that learning in the digital age occurs through interaction with various sources of knowledge, such as the internet or learning platforms, and communities of participation, such as social networks. His learning theory is based on individuals connecting with each other and with technology. Learning is achieved by retrieving information from oneself, others and machines and using this collaboration to acquire knowledge.
2.3 Learning Styles

2.3.1 Introduction

People learn in different ways. Each of us will adapt a style of learning that we are most comfortable with. If a teacher decides on a specific approach to learning for his/her class, it is possible that some students will work and learn less effectively than others. Teachers need to be more aware of, and understand more about, the different needs and learning styles of his/her students (Pritchard 2005).

2.3.2 Learning Styles

Many different styles of learning have been advocated throughout the years. Honey and Manford (1986) offered four different learning styles and suggested that in order to learn satisfactorily, a learner needs to adopt one of these learning styles. People who learn by doing, instead of listening or reading, are referred to as Activists while Reflectors are people who learn by observing and collecting information, including past experiences. Theorists refer to people who like to learn within frameworks, and need to get to the bottom of a situation. The fourth learning style of Pragmatists refers to people who learn by using new ideas and implementing them in a practical way. Honey and Manford (1986) suggested that reluctance to adopt one of these four styles could lead to ineffective learning.

Gardner and Hatch (1990) suggested that it would be of benefit to teachers if they identified their students’ basic ‘intelligence’ strength and to use these strengths as a means of engagement for learning.

Fleming (2001) advocated the visual, auditory, reading and kinaesthetic (VARK) system. He suggested that by using our senses we gather information from the world around us. Some people will use one sense more than their other senses.

There have been many different research studies to examine the relationship between academic success and individual learning styles. These studies are consistent on the following findings: students do learn in different ways from each other; how students perform in different subjects is related to how they learn; and, when students learn using their preferred learning style their academic success is increased (Pritchard 2005). A basic awareness of learning styles can aid teachers in helping students think, learn and act to the best of their abilities (Felder 1996).
2.3.2.1 ‘Multiple Intelligences’ approach in the classroom

In a traditional classroom setting the verbal-linguistic and logical-mathematical are the intelligences most frequently used. It is likely that of any given class, one third of the students’ preference for learning is by visual, auditory or kinaesthetic means. Teachers need to be aware that these students will have difficulty ‘keeping up’ with the class if some of their learning is not presented in a learning style appropriate to them (Pritchard 2005). In order to ‘tap into’ those students whose strengths and abilities can be found in other intelligences a more balanced curriculum that incorporates the arts, self-awareness and communication may be useful.

Becker (2003) acknowledges that it is not possible to fully understand something, without involving more than one intelligence. That, to simply recite a piece, does not prove that something has been fully understood but if it can be transferred and expressed in another form then it can be assumed that understanding is achieved.

A ‘Multiple Intelligences’ (Gardner 1999) approach is a natural way to structure learning in school classrooms as all students are different and respond differently to various modes of instruction. Adopting this approach into a classroom will result in the shift of the teacher’s role, from that of traditional teaching and learning to facilitator of learning. The role of the student also changes. The student becomes more responsible for his/her learning and the relationship between teacher and learner changes.

To implement a ‘Multiple Intelligences’ (Gardner 1999) approach in the classroom, teachers need to consider a range of activities related to the content of a lesson. The teacher should allow for a wide variety of responses to particular tasks. Set responses are not required and a variety should be encouraged. It would not be possible for all lessons to incorporate all intelligences but over time the lesson planning process should allow for a more comprehensive set of activities for learning (Armstrong 2009).

Incorporating a ‘Multiple Intelligences’ (Gardner 1999) approach into the classroom, will require many schools to radically rethink established processes and policies. However, schools that have adapted even small changes are creating positive learning outcomes (Armstrong 2009).
2.4 Affective Learning

2.4.1 Introduction

Traditionally there has been a divide in learning, between cognitive, which relates to knowledge and problem solving, and affect, which is intrinsically linked to emotions and motivation. Affective factors are often not taken into consideration and are seen as being less important than cognitive factors (Jones and Issroff 2004). Class planning has generally focused on cognitive objectives alone (Santrock 2009). However, evidence has shown that students will learn more effectively if “they are happy in their work, believe in themselves, like their teachers and feel the school is supporting them” (Weare 2000, p.5). The Irish primary school curriculum supports this by acknowledging that it is “widely recognised that the child’s social and emotional development significantly influences his or her success in learning” (Department of Education and Science 1999, p.16).

2.4.2 Motivation and Engagement

Motivation and engagement play a major part in learning. It is the difference between a student learning something superficially or permanently. When learners are actively engaged in their own learning they feel more in control of their learning resulting in improved motivation and self-esteem (Pritchard 2005). When “children’s self-esteem and self-confidence are raised” then “their motivation to learn is increased” (Department of Education and Science 1999, p.16). Student motivation is dependent on the student’s desire to partake in the learning process (Lumsden 1994). Santrock (2009) describes motivation as behaviour “that is energised, directed, and sustained” (p.460). Activities which motivate children lead to successful learning, as motivation is strongly linked to the child’s active involvement in the learning process (Underwood and Underwood 1990).

2.4.2.1 Extrinsic and Intrinsic Motivation

Extrinsic motivation refers to a learner who learns to achieve an award or to avoid punishment, such as school grades or teacher approval (Lepper 1998). Extrinsic motivation can be powerful and work for short periods. However, the effects are often short lived and can actually ‘demotivate’ learners (Rogers et al. 1999).
Intrinsic motivation refers to the satisfaction and sense of accomplishment a learner gets from learning. The learner is motivated to learn because he/she enjoys it regardless of whether it brings an immediate reward or not (Covington 1998). If a student is intrinsically motivated they will retain information longer (Dev 1997) and are more likely to be lifelong learners who will continue to educate themselves outside of the classroom (Kohn 1993).

Too often, extrinsic and intrinsic are seen as complete opposites but they can operate effectively together (Santrock 2009). A teacher’s key to motivating students is to bring the sources of intrinsic and extrinsic motivation together in a way that will actively engage students in the learning process (Borich 1992). Santrock (2009) acknowledges:

Students are more motivated to learn when they are given choices, become absorbed in challenges that match their skills, and receive rewards for their informational value but are not used for control. (p. 464)

However, it must be noted, that extrinsic motivation on its own is not recommended by education psychologists (Santrock 2009).

Keller (1987) offers four C’s to increase motivation in learners. Aim to heighten the learners’ interest which will invoke their Curiosity. Provide them with a task that is not too easy or too difficult but will Challenge them. Involve tasks that the learners have previously experienced to increase their Confidence. Allow the learners to have Control so that they can “negotiate their own path” (cited in Jones and Issroff 2004, p.398).

2.4.3 Affective Learning and Multiple Intelligences

Gardner (1999) suggests that teachers need to pay more attention and respect to ‘intra-personal’ and ‘interpersonal’ intelligences and to put them on a par with other traditionally accepted intelligences (cited in Weare 2000). The Irish Primary School Curriculum acknowledges the importance of “nurturing essential intrapersonal and interpersonal” intelligences for the “social and emotional dimensions of learning” (Department of Education and Science 1999, p.16). Evidence suggests that different intelligences support each other and that emotional intelligences are essential for “intellectual forms of intelligence” to operate effectively (Weare 2000, p.5).
2.5 Group Work

2.5.1 Introduction

Group work encourages communication and discussion between students. Students see how other group members regard and interpret information (Hills 1986). When working in a group, knowledge is shared among the group. The group are not learning passively as in traditional learning, they are active participants learning with and from their peers. This type of learning assists students to develop higher order thinking and deeper understanding of what they are learning (Palloff and Pratt 2005). The main emphasis of group work is that the centre of learning exists within the group. When doing a task or activity the group offers mutual assistance to its members, which in turn leads to mutual learning.

2.5.2 Communication and Collaboration

Communication and collaboration with other students provokes activity, makes learning more realistic and stimulates motivation. The focus is on the learner’s ability to mentally construct meaning of their own environment enabling students to become more active and independent learners. In 2008 the British Educational Communications and Technology Agency (Becta) reported that evidence suggests that learners are intrinsically engaged when they have the opportunity to learn through social and collaborative methods of learning.

All learning takes place in one of three ways, students working alone, students competing against each other or students working together to achieve a common goal. While all three should be part of a student’s education, collaborative learning should be the dominant method of learning (Johnson and Johnson 1994). Learning through communication and collaboration, assists teachers in achieving a specific learning objective through a shared activity, by means of social interactions among members of the group. With effective communication and collaboration teaching becomes more efficient (Becta 2008).

Jin (2009) offers five principles of design for creating an effective learning module for co-operative learning. Learning is Student-centred, allowing the students discover and construct meaning through active exploration. The students require an Incentive to stimulate motivation. The author suggests that strong motivation can make up for weak
ability. *Sharing* is where knowledge is shared either through direct communication or exchange of documents with group members and/or teachers. In order for there to be effective collaboration there must be *Interaction* among students. The basic effective interaction is communication. The fifth principle of *Feedback* informs students of the results of their learning as this will encourage the learner to learn harder. Instant feedback is most effective.

The Irish Primary School Curriculum acknowledges the importance of collaborative work in the classroom. In its introduction it states that the:

> Experience of collaborative learning facilitates the child’s social and personal development, and the practice of working with others brings children to an early appreciation of the benefits to be gained from co-operative effort.
> (Department of Education and Science 1999, p.17)

Working in collaborative groups appears to be more satisfying for students (Johnson *et al.* 1991) and has social and academic benefits for children (Dillenbourg 1999). When a group has a common goal and it’s members need to be co-operative and dependant on each other then there is more listening and communication within the group (Napier 1999). By working co-operatively they help other members of their group leading to a more successful outcome (Forsyth 1999). However, some group members may not accept equal responsibilities or be willing to help other members (Gödek 2004).

Daiute (1985) suggests that although children enjoy working together, they may not have the social skills to collaborate effectively at first. Gödek (2004) concurs and adds that this is one of the reasons that some teachers abandon group work. As children get older, these skills improve (Daiute 1985). Galton and Williamson (1992) state, that primary school children are often self-centred and can be aggressive and lack respect for each other (cited in Gödek 2004). The level of social skills of group members contributing to group collaborations influence how much and what children learn from these collaborations (Brownell and Carriger 1991).

While there is extensive research on the benefits of collaborative learning in classroom settings, there is limited research on how students feel about having to work with a peer who they may not know that well, or may dislike, especially when they may be used to working on their own or with a good friend (Christensen and James 2008).
2.5.3 Group size

Cooper et al. (1990) suggests that smaller group sizes of four or five students are better than larger groups. Larger groups restrict student participation and so provide less learning opportunities. Gödek (2004) concurs and also states that if a group consists of three members then one member may become isolated. With a group size of four or five, each student is given an opportunity to increase their learning and skills. Students working in these groups tend to learn more of what is being taught and retain information for longer (Cooper et al. 1990). Apart from communication, group size also affects members’ self-awareness and behaviour in the group. Members of small groups tend to be more self-aware and more likely to regulate their behaviour than members of larger groups (Napier 1999).

2.5.4 Group Development

Tuckman’s (1977 cited in Forsyth 1999) theory of group development suggests that most groups move through five stages (Fig. 1). Stage one is the ‘forming’ phase, where group members come together. Stage two is the ‘storming’ phase where conflict can occur as group members vie for leadership. Stage three is the ‘norming’ phase where structure occurs in the group. Stage four is the ‘performing’ phase as the group concentrate on what needs to be done. Stage four continues until it reaches the ‘adjourning’ phase where the group is disbanded.

2.5.5 Group Dynamics

When groups are made up of members of different abilities, experience, personalities etc. then this can lead to a greater range of viewpoints and resources. However, this type of group can also suffer high levels of conflict (Moreland et al. 1996). Conflict is likely to occur within groups, when members compete against each other instead of working towards a common goal. Competition is a powerful motivator but can promote conflict between individuals (Forsyth 1999). Biott (1987) suggests that children do not generally tolerate each other views and confrontation may often occur during group
discussions (cited in Gödek 2004). Group members who are not polite or friendly with other members of their group can cause conflict within their group (Ohbuchi et al. 1996). Group members with agreeable personalities have the ability to exert a calming influence on their group which allows their group to work in harmony (Forsyth 1999). It is important when undertaking research with a group of children to understand the ‘power relations’ within the group so that the researcher does not contribute to strengthening the hierarchies that may already exist (Hart and Tyrer 2006).

2.5.6 Group Work and Affective Learning

Research into group work in primary schools found that when children work collaboratively in groups, their self-esteem and motivation is increased, however, the group must be important to its members (Croll and Hastings 1996 cited in Gödek 2004). Holt (1987) found that members of a group showed decreased motivation when they were not psychologically connected. If the group is important to its members then motivation and collaboration are increased. One way of making a group important to its members, especially children, is to include activities that the group considers to be ‘fun’. This will increase interaction and motivation within the group leading to increased group commitment to the task.

2.6 Computer Technology in the Classroom

2.6.1 Introduction

Today’s generation of learners are no longer satisfied with receiving information passively but instead want to discover for themselves. This leads them to become active in their learning (Tapscott 1998). When they are active and have more control over the learning process they are more motivated and engaged in their learning (Anderman and Midgley 1998). In 2007, Becta published a report which highlighted the benefit of using technology for learning. In the report it states that both teachers and students are positive about the impact technology has on motivation and engagement in the classroom. It acknowledges the fact that technology is still being used for whole class teaching instead of group learning. The report acknowledges that when technology is used in the classroom, if even to support existing learning practices, it has a positive impact on learning outcomes (Becta 2007).
2.6.2 Human Computer Interaction (HCI)

HCI is the study, planning and design of the interaction between people and computers. This interaction occurs at the ‘interface’ and includes both software and hardware. When designing interactive software for education, designers must “pay attention first to usability and second to learning outcomes” (Jacko and Sears 2002, p.23). Attention to human-machine interaction is important, because poorly designed human-machine interfaces can lead to many problems. If students have difficulties using the software they will have difficulties learning through its use (Jacko and Sears 2002).

Norman (1998 cited in Poppe et al. 2007) offered six principles for good HCI design. Visibility ensures the user can clearly see what functions are available and what the system is doing at any given time. The system offers Feedback to the user to show the effect of their actions while Constraints prevent errors from occurring by constraining particular actions. Consistency is imperative for uniformity of design, appearance and behaviour. The system assists Recovery so the user can easily and quickly recover from mistakes. The sixth principle of Affordance ensures the design is kept clear so that the user is in no doubt about the purpose of the elements on the interface.

When designing for children designers need to be aware of how “children’s cognition evolves” (Jacko and Sears 2002, p.4). Children from the ages of two to seven have a short attention span and would be unable to understand another person’s point of view. Their computer abilities would generally be limited to ‘mouse clicking’ on large screen targets. The cognitive abilities of children from the ages of seven to eleven are almost that of adults. They are old enough to use relatively advanced software while also young enough to enjoy a fun, playful element. They would most probably have good ‘mouse’ control and some keyboard skills. By the time children reach twelve years of age, designers can assume that their cognitive abilities are that of adults (Jacko and Sears 2002).

2.6.3 Benefits of Computer Technology in the Classroom

Using computer based applications enhances how children learn by supporting the following; “active engagement, participation in groups, frequent interaction, feedback, and connections to real-world contexts” (Roschelle et al. 2000, p.1). The use of computers enables educators to enhance the quality of learning for their students. Computer technologies involve and motivate students as they actively learn. Students
can work together in groups using a computer and give support and help to each other when required. Computer technologies allow teachers to give the learner more control over their own individual learning while also supporting learning through collaboration and communication (Becta 2007).

To achieve the most benefit from computer technology in the classroom, technology implementation should be matched with the learner’s needs. Stettler (1995) identified four modes of learning when using computer technology. The student as the *Acquirer* learns skill and knowledge by using content rich software while the teacher is directing the learning on the computer. As the *Retriever* the student is actively involved in seeking out information and is more in control of their own learning. The student becomes a *Constructor* of information by actively creating and disseminating knowledge. This form of learning facilitates collaboration. The student, as *Presenter*, reports the information they have constructed to an audience.

Computer technology itself will not necessarily improve a student’s ability to learn (Jonassen *et al.* 2008). What is important for students is not that they know how to use technology, but how to use it effectively to solve problems so it becomes a resourceful learning tool for them (Meyer 2001).

### 2.6.4 Concerns about using Computer Technology in the Classroom

When students are interactive in their learning, the teachers role changes from “dispenser of knowledge” to “facilitator of knowledge” (Grabe 2004, p.10). This can prove to be a problem for some teachers. Becta (2007) reported that students are learning how to use computer technologies at a faster rate than their teachers. Some teachers are fearful of losing their ‘expert’ role in the classroom. Many are aware that they cannot engage with their students at the same technological level. The report acknowledges that some teachers are independently implementing technology effectively into their classrooms but that the smartest teachers are acknowledging their students technological capabilities, partnering with them and learning from them. Teachers don’t need to be proficient in the use of these new technologies but should be aware of how new technologies can add to their students learning.

Another concern which Healy (1998) addresses, is that more questions need to be asked about the impact of educational technology on children and to understand “what computers are doing to children’s brains, social health and physical health” (cited in
Gordon 2001, p.21). She wondered if frequent use of computers will have a negative impact on children’s:

 Ability to conceptualize and their motivation to do independent problem-solving that doesn’t have an immediate reward attached and that requires some mental effort. (ibid.)

2.6.5 The Irish Context

Callan (1997) defined Irish schools as institutions which, traditionally value ‘content’ knowledge where students learn passively using textbooks. He stated that teacher/student relationships were influenced by teacher/parent relationships. What students learned in school was what parents expected teachers to teach them. In 1998 the Department of Education and Skills established the National Centre for Technology in Education (NCTE). Its main objective is to promote and support Information and Communications Technology (ICT) integration by teachers and students in teaching and learning.

The Irish primary school curriculum acknowledges the importance of integrating ICT into the Curriculum. It states:

 The curriculum integrates ICT into the teaching and learning process and provides children with opportunities to use modern technology to enhance their learning in all subjects. (Department of Education and Science 1999, p.29)

In 2000 the Irish Government launched an ICT programme to integrate ICT into the Irish educational system. In 2008 an allocation of €252 million was made available to the National Development Plan (NDP) for the ‘ICT in schools programme’. A report commissioned by the Department of Education and Science (DES) in 2008 acknowledges that “learning is changing” and that “a pivotal force in bringing about this change is the use of ICT” (p.1). It acknowledges that when ICT is used effectively it “enriches learning and enhances teaching” and that it is a “powerful motivational tool that encourages learners to progress in more personalised and self-directed ways” (ibid.).

2.6.5.1. Problems in Irish Classrooms

Despite the various ICT initiatives, computer technology in the Irish classroom is still largely seen as a subject to be learned instead of a tool to support learning (McGarr 2009). It is highly probable that the use of ICT in Irish schools is connected to the teacher’s ability in using ICT applications (Eivers et al. 2005). Galvin (2002)
acknowledges that for ICT to be effectively integrated into Irish schools it depends on two things; teachers’ ICT competence and the availability of high quality computer tools and applications suitable for teaching and learning in an Irish school. Either on its own is insufficient.

If teachers’ ICT competence is the issue, then these teachers should receive adequate training in the use of ICT and its application to curriculum subjects (Eivers et al. 2005). Galvin (2002) suggests that for teachers to receive the most beneficial training, a range of funded courses should be available from basic to specific subject area courses. He acknowledges that the localisation of this training must also be addressed. If ICT is to make an impact in the classroom, “ICT training is one that we ignore at considerable peril” (ibid. p.15).

McGarr and Kearney (2009) conducted a study to ascertain the ‘role of the teaching principal in promoting ICT use in small primary schools in Ireland’. The study involved interviewing thirteen primary school principals and their view of ICT in their schools. The study found that the principals were initially enthusiastic with the national ICT in schools initiative in 2000. However its introduction added more demands to their positions as principals. They identified that a lack of appropriate ICT resources, ineffective technical support and time as the main reasons for ineffective use of ICT. Conclusions from the study suggest that principals should not be given the extra burden of responsibility for ICT leadership and highlights the need for “alternative models of support and leadership” (ibid. p.100). They suggested that the formation of a network of similar sized schools “providing pedagogical leadership in the areas of ICT” could be effective (ibid.). Also, schools collaborating with one another “sharing models of good practice” could encourage effective and beneficial dialogue between teachers concerning the current use and future use of ICT in the classroom (ibid.).

2.6.6 Computer Technology and Group Work

The introduction of computers into classrooms tends to increase communication and collaboration among students (Chernick and White 1981). Students find working at a computer to be more fun and enjoyable which in turn increases their intrinsic motivation. This allows for a more satisfied learner who is more likely to retain the knowledge learned for longer (Dev 1997). The use of computers for collaborative group
work can accommodate different learning styles and cultures more easily. Students prefer to work together at the computer than on their own (Muller and Perlmutter 1985).

Research has shown that working in small groups and interacting with computers can have beneficial effects on learning and development, especially among young children (Stanton et al. 2002). Forcier and Descy (2008) stress the importance of computer group member selection and group behaviour monitoring so that all members are involved in decision making and content creation. If these groups are not selected carefully and monitored effectively, then some ‘more able’ members could be left to do all the work. Also there is the possibility that ‘higher ability’ students could ‘dumb down’ their efforts and contributions as they may feel they are being used by other group members.

Becker (1999) maintains that there are three important factors that determined students’ experiences in collaborative internet projects. The most important factor was classroom access to the internet. The other two factors are the teacher’s technological experience and the teacher’s constructivist beliefs. Bork (1985) acknowledges that the great advantage of using technology in education is that the learning becomes interactive. Students participate in their own learning instead of being spectators. Using computers allows for communication and collaboration between students. This will result in “different and contrasting views”, which develops a “rich and robust knowledge base” (Sulaiman et al. 2004, p. 59).

2.6.7 Web 2.0

The term ‘Web 2.0’ was coined in 2004 by Dougherty, a vice-president of O’Reilly Media Inc. (Anderson 2007) to launch new web network applications where the web is used as a platform. Software applications are built upon this web platform as opposed to upon the desktop. Web 2.0 is a term used for new web applications and tools that can be created by users and the content manipulated by users, such as wikis, blogs, podcasts and social networking sites (Pew Internet and American Life Project 2010).

Before Web 2.0 the internet was 'static' or 'read-only'. Information was published to websites and accessed by the reader. However, with the introduction of Web 2.0 it has now become as easy to create or 'write' content, as it is to access and read it. The reader can now also be a writer of information. The web has changed from being a read-only
medium to a medium where anyone can publish their own content and share and/or collaborate with others (Richardson 2006). Research shows that students:

Feel a sense of ownership and engagement when they publish work online and this can encourage attention to detail and an overall improved quality of work.

(Becta 2008, p.8)

2.6.7.1. Virtual Learning Environment (VLE)

Since the introduction of Web 2.0, VLE’s are becoming more commonplace in the classroom. When used effectively, they offer “new, engaging learning experiences and support the development of effective learning techniques for all learning styles” (Becta 2009, p.3). They offer a safe and familiar environment for students to learn both in school and also at home (Becta 2009).

A collaborative virtual learning environment (CVLE) is an on-line environment where learners can collaborate on projects, exchange information, ideas etc. These learning environments offer a complete contrast to traditional classroom based learning where the focus of learning is based on knowledge being transferred by the teacher. CVLE’s allow learners to learn collaboratively by constructing knowledge (Akar et al. 2004).

Research has shown that VLE’s are not easily introduced into traditional classroom settings. Extra effort is required from learners and may prove challenging for some who are used to traditional individual learning. Learners need to be given time to become familiar with new ways of learning in which their learning is based on collaboration with their peers (Akar et al. 2004).

2.6.7.1.1 VLE Design

If the design of a VLE is not perfect, it will hinder the development of successful cooperative learning (Jin 2009). Chen (2000) state that on-line learning environments “usually provide optimal content presentation, instructional strategies, assessment methods, and interface” (cited in Neto and Brasileiro 2007, p.14). The creators of these environments expect learners to become familiar with and benefit from these environments (ibid.). However, Oliver and Herrington (1995) argue that these learning environments can be limited as they do not provide instant teacher support and feedback so that users unfamiliar and unaccustomed to using them may lose out on many of the “instructional advantages” (ibid.).
Chapnick and Meloy (2005) suggest design principles for designers. **Aesthetic usability** makes the VLE appear as attractive as possible so it will appeal to most users. To ensure **Consistency** navigation should be simple and easy and colour schemes and graphic layout should follow a logical pattern. The **Pareto principle** is the 80-20 rule which refers to the fact that only twenty per cent of users will use eighty per cent of the functions, and vice versa, however, learning still needs to be effective even if the learners only use twenty per cent. The **Proximity** of buttons, tabs etc. and their layout and alignment must be taken into consideration so that the learner can make mental connections between relevant objects. The final principle of location, alphabet, time, category and hierarchy, **(Latch)** refers to the appropriate sequence for presenting information to make it most effective for the user (cited in Fee 2009, pp.99).

Becta (2002) recommend design elements for the creation of web sites. These are also applicable in creating effective VLE’s. Designers should avoid **colours** that are too bright for either text or background. The **format** should be consistent throughout with careful consideration given to the placing of navigation buttons. Designers should keep **graphics and multimedia** to a minimum. Those used should not take too long to load. Inexperienced users should not have difficulties with **navigation** on the site or VLE. **Links** should be clearly marked. The **accessibility** of the site or VLE should be of the upmost importance so that it can be accessed easily by all potential users including those with special needs (cited in Herring 2004).

### 2.6.7.2 Web 2.0 in the Classroom

Many students are using Web 2.0 in their leisure time. Examples of these are social networking sites, blogs, wikis, and discussion forums. Becta (2008) conducted major research into the use of Web 2.0 technologies. The report found that young learners are prolific users of these technologies in their leisure time, but the use of Web 2.0 in the classroom is still limited. The research also found that over half of teachers surveyed believe that Web 2.0 resources should be used more often in the classroom.

Sword and Leggott (2007) offer the following principles for teaching through Web 2.0 technologies:

- Relinquish authority; recast students as teachers, researchers and producers of knowledge; Promote collaborative relationships; Cultivate multiple intelligences; Foster critical creativity and; Craft assignments that look both forward and backward.  
  (cited in Halsey 2007, p.100)
The use of Web 2.0 technologies in the classroom, allow teachers to offer learning in new ways. They allow for new opportunities for learner control, knowledge construction both individually and socially and learning through communication and collaboration (Becta 2008).

2.6.8 Effective e-learning

Salmon (2003) offers a ‘five stage model for effective e-learning’ through developing the level of engagement by the participants. This is overseen by an ‘e-moderator’. Stage one: access system and encourage motivation in participants by heightening their curiosity and interest. Stage two: allow for online socialising so that participants can establish their online identities and then find others with whom to interact. Stage three: participants exchange information relevant to the task/project with each other. Stage four: collaboration takes place as participants work together for a common purpose. Stage five: participants look for more personal benefits from the task/project through self-directed learning. Each of the five stages requires the participants to become competent using a particular technical support skill, (c.f. Fig. 2). Each stage also requires different e-moderating skills (c.f. Fig. 2). The degree of interactivity that can be expected between participants increases as they progress through stages one to five (c.f. Fig. 2). In the final phase of stage five, interactivity decreases as students graduate to become independent learners (c.f. Fig. 2).

2.6.9 eTwinning

The European Commission initiative eTwinning, is based on partnerships between European schools. It was launched in Poland in 2004 with its opening conference in Brussels in 2005. It is a web based portal which is used by teachers to ‘establish partnerships’ with other European schools at primary or secondary level, who
collaborate on projects using a variety of web based tools and applications. Projects can be as long or as short as the partnerships require (Machcińska and Torończak 2009).

It also extends teachers professional development as it provides continuous updating of their computer competences. An eTwinning project relies “solely on the enthusiasm and motivation of the teachers” who acknowledge the importance of educating students for a technology rich society which will benefit them well in the future (Machcińska and Torończak 2009, p.15).

Statistics released from the eTwinning press corner in August 2011, gave the number of registered schools within thirty two European countries as 85,642, with the amount of active projects as 11,309. The number of registered schools in Ireland was seven hundred and fifty three with ninety seven active projects registered (Directorate-General for Education and Culture 2008).

In Ireland, Léargas is the National Support Service (NSS) for eTwinning. Their website describes eTwinning as:

> A simple and straightforward way to forge partnerships and work on projects with other schools in Europe, using information and communication technology (ICT). It aims to help schools to bring a European dimension to their activities and to integrate ICT into the classroom. (Léargas 2010)

In 2009 a report was compiled by Galvin on behalf of the European Commission and also the NSS’s. This report analysed the case notes submitted by eleven participating NSS teams across Europe. Each NSS team submitted project case notes from three to five schools from their respective countries. These case notes were analysed over a fourteen month period. The teachers involved in these case studies were very positive and reported that being involved in eTwinning projects were advantageous to their students and their schools. The author does remark that as all the case notes submitted by the NSS teams were from successful projects it is only to be expected that the teachers’ experiences would be largely positive. However, he also states, that as there were no negative comments with regard to the eTwinning experience that it is probable that the personal commitment of the teachers was the reason for these successes.
2.6.9.1 TwinSpace

The TwinSpace was developed on the request of teachers so as they could have access to a platform for collaborative work (Central Support Service for eTwinning 2010). It is a virtual environment unique to each project (Fig. 3). When a partner school has been selected and the project has been approved, the project is assigned a TwinSpace. The administrators, usually the teachers, create activities on their TwinSpace relevant to their project. The TwinSpace is *Multilingual* with twenty-two available languages. Students work in a *Safe* environment as the TwinSpace can only be accessed by means of a password by those involved in each individual project or by those invited by the teachers who founded the project. The TwinSpace is *User-friendly* and can be used by teachers and students who do not have much computer skills. It is *Project-oriented* providing essential elements required for collaborative projects, such as, planning, communication and publishing functions (Directorate-General for Education and Culture 2008).

The TwinSpace has a number of tools available on the platform. Separate *Staff* and *Pupil corners* allow both teachers and students to have their own area for communication and/or collaboration which may or may not be related to the project. The *Forum* tool can be used for discussion. The *Chat* tool is used for instant communication. The *Wiki* tool can be used for collaboration and the *Blog* can be used for reporting. There are *Webpages* which are project related and these can be customised. The *Uploading* facility uploads images, text and presentations to the TwinSpace platform (Central Support Service for eTwinning 2010).

Fig. 3: TwinSpace of ‘Our Local Place’ project (Directorate-General for Education and Culture 2011).
2.6.9.2 eTwinning and cultural awareness

The Irish primary school curriculum acknowledges “the importance of a balanced and informed awareness of the diversity of peoples and environments in the world” (Department of Education and Science 1999 p.27). With the rapid growth of web based applications the world is becoming a smaller place and intercultural partnerships are becoming commonplace in the classroom. Students should be aware of cultural differences. Cultural awareness becomes important when communicating with people from different countries and cultures. Students need to understand that people from different cultural environments can interpret and evaluate things differently from themselves (Welzer et al. 2010).

The Irish primary school curriculum states:

To enable children to realise and express their individual and national identity the curriculum takes account of our historic links with European culture and our modern membership of the European Union.

(Department of Education and Science 1999 p.27)

Involvement in a successful eTwinning project “weaves together the two elements of cultural capital and language” so that the participants get to know their partners “with a deeper knowledge, appreciation and tolerance of their cultural context” (Crawley et al. 2008 p.12). This helps children better “understand the world and contributes to their personal and social development as citizens of a global community” (Department of Education and Science 1999 p.27).

2.6.9.3 eTwinning and Multiple Intelligences

Most eTwinning projects are based on using a range of intelligences and the main objective is to create knowledge using multiple skills. The intention of these projects is not to replace the national curriculum but to strengthen it by allowing students to maximise their learning potential by using intelligences that are most beneficial to their learning. Gardner’s (2006) view of ‘deep understanding’ is not easily achievable in the traditional teaching methods of the curriculum (cited in Komninou 2010).

By using a range of intelligences in eTwinning projects a deep understanding of the subject being taught can be achieved. The use of computer technology in eTwinning projects makes learning more compatible with different intelligences. Students have access to different forms of media such as text, images and video and can develop different skills while actively learning (Komninou 2010). An eTwinning project

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facilitates a broad based approach to learning as it not only focuses on cognitive aspects but also on affective aspects of learning.

2.7 Conclusion

This chapter explored different learning theories and styles. It focused especially on a ‘multiple intelligences’ approach in the classroom and discussed the importance of the affective as well as the cognitive aspects of learning. It explored the value of group work and how combining collaborative groups and computer technology can be beneficial to primary school students in a classroom environment. Chapter 3 will discuss the research approach and the data collection methods chosen for this study.
Chapter 3: Methodology

3.1 Introduction

This chapter will examine different research approaches and methods of data collection. The researcher will justify why one approach was chosen over another and why certain methods of data collection were chosen. This chapter also gives a brief outline of the research study and purpose of this study.

3.2 Research Question

The purpose of this study was to explore the benefits of participating in an eTwinning project for small collaborative groups in a primary classroom setting. This study aimed to investigate the following:

- Can primary school students effectively use the TwinSpace platform as a VLE?

- How do primary school students interact, communicate and collaborate within a group when using computer technology?

- Are primary school students intrinsically motivated when using computer technology?

- Does participation in an eTwinning project promote broad based learning among primary school students?

3.3 Research Setting and Target Population

The physical setting for this study was a large bright new classroom in a small rural primary school in County Galway. There were six computers in the classroom, five of which were laptops. All had wireless broadband connection. The target population for this study was twenty primary school students from a combined fourth and fifth class of mixed gender and mixed learning abilities. For the purpose of this study they were referred to as one class. Their ages ranged from ten to twelve years and they were of mixed gender. The partner group chosen to take part in the eTwinning project was a class in a primary school in the North of France. This class consisted of twenty four students of similar ages and was also of mixed gender.
3.4 Researcher/Teacher Collaboration

The researcher is knowledgeable and experienced in using different computer applications and tools. However, as the researcher is not in the education sector it was necessary to collaborate with a primary school teacher on this study. The primary school teacher had some computer skills, and was enthusiastic to ‘upskill’ in order to incorporate more ICT into the classroom. Both the researcher and the teacher benefitted greatly from this collaboration. It gave the researcher an insight into the teaching profession and the dynamics involved in teaching a group of young children. It benefitted the teacher also, as the researcher was able to help the teacher with computer/technology issues which subsequently increased the teacher’s knowledge and confidence in using new computer tools and applications.

3.5 Research Study Outline

The eTwinning project developed for this study was entitled ‘Our Local Place’. This project was developed by the researcher and an Irish primary school teacher. A class in northern France was chosen as the European partner for this project. This partner class was chosen as the students were of similar age and abilities. For the project, each class was divided into five groups. Each group researched and collaborated on a topic related to their local area. Information gathered on their group topic was exchanged with the other groups in their class and also with their partner class. The topics researched by the students were geography, history, a local landmark or important building, their school and a saint or famous local person. The project incorporated cross curricular studies and an intercultural experience. This was achieved by the students using a variety of computer tools and applications. A combined ‘multiple intelligence’ and constructivism approach was implemented into the classroom for the purpose of this study.

By participating in the eTwinning project, students:

- learned about their local area and that of their French partner class
- communicated and collaborated within their group to achieve a final goal
- learnt new computer skills and improved on existing skills
- improved their social skills by interacting with group members
- enhanced their personal development by increasing their confidence and self-esteem
3.6 Research Approach

3.6.1 Introduction

There are several different approaches that can be used when conducting educational research. Each approach has particular advantages and disadvantages. According to Yin (2003) there are three conditions which should be addressed when deciding on which approach to use. Firstly, the research question should be considered. Secondly, the control the researcher has over the participants’ behaviour during the study should be addressed. The third condition refers to whether the researcher is interested in getting results from contemporary events or historical events. Two of the most commonly used approaches in education research are Action Research and Case Study Research.

3.6.2 Action Research

Action research is a “powerful tool for change and improvement at a local level” (Cohen et al. 2010, p.297). It can be used in any setting where a problem is identified and then something is done to resolve the problem. The results are then examined to evaluate the success of the solution. If viewed as being unsuccessful the research continues to be reviewed and evaluated (Bell 1999). Action research is used in real life situations as its main focus is to solve real life problems. It would mainly be chosen in situations which require flexibility or when change must happen quickly. Action research is acknowledged as an effective approach in educational research as it is seen as practical and incorporates problem solving. The “combination of action and research has contributed to its attraction to researchers and teachers alike” (Cohen et al. 2010, p.297).

3.6.3 Case Study Research

Case study research “provides a unique example of real people in real situations” (Cohen et al. 2010, p.253) allowing the researcher to focus on individuals or on a group’s reactions in a particular situation. A case study is “intended to focus on a particular issue” in order to “understand and examine” (Noor 2008, p.1602) an area of interest in depth and is concerned with how and why things occur (Anderson 1993). A case study approach is more beneficial when the researcher has little control over a situation and allows events to happen naturally (Hitchcock and Hughes 1995) enabling the situations to “speak for themselves, rather than to be largely interpreted, evaluated
or judged by the researcher” (Cohen et al. 2010, p.254). Case study research can be a single study or multiple studies and can include a mix of both quantitative and qualitative research methods (Yin 2003). Four stages recommended for case study research are: design the case study; conduct the case study; analyse the case study evidence; and develop the conclusions, recommendations and implications (ibid.).

3.6.3.1 Justifying a Case Study Research Approach

Three conditions determined why the researcher chose a case study approach for this research. The researcher is interested in the ‘how’, ‘what’ and ‘why’ questions. The researcher does not have the ability to control or manipulate behavioural events during the study. The researcher is interested in contemporary rather than historical events. When these conditions are met it is deemed appropriate that a case study approach is undertaken (Yin 2003).

As this was the first eTwinning project that the class and indeed the school had participated in, it was deemed appropriate that a case study approach was undertaken to seek an in-depth understanding of the process because of its uniqueness.

3.6.3.2 Strengths of Case Study

A case study allows the researcher to gain a holistic view of a particular situation or event (Gummesson 1991) which can give a clear understanding of the findings, as data collected involves using multiple sources of information. Willis (2007) suggests that a case study is “about real people and real situations” and offers three positive reasons for choosing this form of research (p.239).

1. It allows you to gather rich, detailed data in an authentic setting.
2. It is holistic and thus supports the idea that much of what we know about human behaviour is best understood as lived experience in the social context.
3. Unlike experimental research, it can be done without predetermined hypotheses and goals. (p.240)

3.6.3.3 Limitations of Case Study

Yin (1994) acknowledges the limitations of a case study, especially a single case study, as they are “vulnerable to misinterpretation and access issues” (p.21). Willis (2007) also acknowledges access as being an issue with case study research. In order to carry
out a case study the researcher must enter an environment that may be unfamiliar and may find it difficult to “gain acceptance of the participants and establish a friendly and co-operative relationship with the participants” (Willis 2007 cited in Long 2010, p.33).

Researchers often chose a ‘convenient sample’ that they have easy access to (Cohen et al. 2010). As this sample does not represent the wider population, the findings cannot be generalised but only refer to the sample group involved in the research (Johnson 1994, Santrock 2009). Case studies have been criticised by some as they lack “scientific rigour and reliability” (Noor 2008, p.1603).

3.6.4 Limitations of this Case Study

Due to the time limitations and logistics of this study the researcher chose to undertake a single case study and target the County Galway class. Therefore, the findings will concentrate only on that of the County Galway class. As this study was based on a ‘convenient sample’ it cannot be assumed that the findings would be generalised but will refer only to the sample group involved in this study.

3.7 Data Collection Tools

3.7.1 Introduction

Two of the main methods used for data collection are quantitative research and qualitative research. Quantitative research methods gather facts which can be used for comparison with another set of facts (Bell 1999). Quantitative data can be easily ‘measured’ and results quantified and conclusions generalised (Hitchcock & Hughes 1995). This method is statistical by nature and the researcher needs to use a pre-determined data collection tool which will measure what it is supposed to measure (Croker and Algina 1986). Qualitative research methods were designed by educational and social science researchers to study human behaviour (Taylor and Bogdan 1984) as almost anything else can be described and explained through statistics and other forms of quantitative research methods.

As a case study approach was chosen for this research the researcher decided to use multiple tools to collect data to ensure a more holistic approach (Noor 2008).
3.7.2 Tests

Testing is a method of quantitative research. It is a “powerful method of data collection” (Cohen et al. 2010, p.414). There are two types of tests – parametric and non-parametric tests. Parametric tests are usually tests which are published commercially and are designed to represent a wider population. Non-parametric tests are designed for a specific population e.g. an individual class. Teacher designed tests are usually non-parametric and designed with a particular group of students in mind allowing the teacher to get quick results relating to the students’ abilities (Cohen et al. 2010).

3.7.2.1 Pre-Tests and Post-Tests

For the purpose of this study a teacher designed test was compiled which was distributed among the students prior to the start of the project and again at the end of the project. Both of these tests were identical (Appendix D). The purpose of these tests was to ascertain whether the students learned more about their own local area by participating in the project. By analysing and comparing the results from both these tests the researcher could evaluate what content learning was achieved. Before the pre-test was administered to the pupils involved in the study it was piloted with another fifth class and amendments were made post the pilot test.

3.7.2.2 Multiple Intelligences Test

To ensure that each of the five groups comprised of members whose intelligent strengths and weaknesses were varied, a child version of a ‘Multiple Intelligences’ test (Docstoc 2011) was completed by each student. The results from this test, along with teacher observation, enabled the researcher to organise five similar groups, each containing members of different intelligence strengths and weaknesses (Appendix C).

3.7.3 Questionnaires

Another method of quantitative research is the questionnaire. It is used widely and is a useful method of collecting data. The purpose/objective of the questionnaire must be decided and also whether a structured, semi-structured or an unstructured questionnaire is to be used. The larger the sample size the more structured the questionnaire should be, whereas, if the sample size is small the less structured and more open the questionnaire may be. The more structured the questionnaire, the easier it is to analyse the data (Cohen et al. 2010).
Two types of questions can be included in a questionnaire, closed and open questions. Closed questions offer the respondent a range of responses to choose from. They are useful in a structured questionnaire as they are “quick to complete and straightforward to code” (Cohen et al. 2010, p.321). However they do not enable the respondent to add remarks or explanations. Open questions are more suited to a questionnaire being used in a “site-specific” case study as it allows “participants to write a free account in their own terms, to explain and qualify their responses” avoiding the limitations of closed questions (ibid., p.321).

As the sample size for this case study was small, a semi-structured questionnaire with open questions was used. Questions were presented in the questionnaire and the respondents were free to answer the questions in a way they thought best. There is “clear structure, sequence and focus, but the format is open-ended, enabling respondents to reply on their own terms” (ibid., p.321).

The questionnaire was used in this study to gather the students’ views on the project itself, on their French counterparts, their group’s interaction and collaboration and on using computer technology for the project (Appendix I). Before the questionnaire was administered to the students it was piloted with another fifth class and amendments were made post pilot.

3.7.4 Observation

Observation is a method of qualitative research which offers the researcher an opportunity to gather ‘live’ data in a natural setting. The researcher has first-hand knowledge of what is happening in a social situation as it happens (Cohen et al. 2010). The researcher can observe incidents that would not be predictable, allowing data to be collected on individual behaviour that “otherwise might be taken for granted, expected or go unnoticed” (ibid., p.396).

Observation is normally classified as either structured or non-structured. Structured observation is used when the researcher knows in advance what s/he wants to observe. Observation is then carried out with a prepared observational schedule to record certain aspects of human behaviour (Denscombe 1998). Structured observation takes more time to prepare but the data collected can be analysed rapidly. The observer would take on “a passive, non-intrusive role, merely noting down the incidence of the factors being studied” (Cohen et al. 2010, p.398). Non-structured observation allows the observer to
take notes as incidents occur. The process is left to the observer’s discretion as to what to include. This approach is “quicker to prepare” but analysing the data would take longer than that of structured observation (ibid., p.398). There is also the danger that using non-structured observation may result in information relevant to the study not being collected or being overlooked by the observer.

The observer can take on a role of participant or non-participant when carrying out observation. As a participant the researcher is observing from within the group. When observing as a participant the researcher would normally use an unstructured approach to collect data (Bell 1993). As a non-participant, the researcher would not partake in the group’s activities but would be there to observe human behaviour. The researcher would attempt to reduce the effect his/her presence may have on the group by positioning him/herself away from the group (Sarantakos 1998). If observing as a non-participant the researcher would normally use a structured approach to data collection (Denscombe 1998). However, it is not always possible that the researcher fits exactly into one or other of these two categories (Sarantakakos 1998). Sometimes elements of both categories will need to be combined and if so, a semi structured approach to data collection would normally be used by the researcher.

The researcher planned to carry out observations as a non-participant. However as the students had become comfortable with the researcher in the classroom they viewed the researcher as another teacher or guide. Because of this the students were frequently asking the researcher for assistance and/or guidance. For this reason, the researcher decided that a participant approach was necessary so that assistance could still be given to the students while also observing. The researcher felt that both a structured and non-structured approach was relevant to this study. The structured approach would enable the researcher to collect specific and relevant information relating to the study while the non-structured approach would allow for information to be collected that may be unique to an individual or incident. For this reason a semi structured approach was used (Appendix H). The observations were conducted during one afternoon project session of two hours duration. This took place midway through the study when the groups were well established. Each student in each group was observed five times for one minute every twenty minutes. Before the observations were conducted, the researcher piloted an observation with the pupils in order to foresee any problems that may arise. It was during this piloting of the observations that the researcher realised that a participant approach was necessary.
3.7.5 Group Interviews

Another method of qualitative research which has grown in popularity is group interviews. Initially, the researcher was going to use focus groups as a means of data collection but as focus groups work better if the group is “composed of relative strangers rather than friends” (Cohen et al. 2010, p.377) it was decided that group interviews would be more appropriate for this particular study (Appendix J). The advantage of group interviewing is that it can allow for a discussion to develop allowing the researcher to capture a wide range of responses that may not have been evident from data collected from questionnaires. Group interviews are particularly useful when a group has been working together on a common goal (Cohen et al. 2010). However, Watts and Ebbutt (1997) state that a disadvantage of group interviews is that individuals may be discouraged from speaking when they have a different point of view to that of the group (cited in Cohen et al. 2010).

When group interviews are used as a means of data collection it is the “view of the whole group and not the individual member” (Cohen et al. 2010, p.374) that is being sought. Even though there may be individual responses it is the “collective group response” that is required (ibid.).

Group interviews are particularly useful for interviewing children. They feel less intimidated within a group situation compared to an individual interview with an adult (Cohen et al. 2010). Group interviews encourage interaction within the group instead of an individual giving a quick response to a question posed by an adult. Group interviews allow children to challenge one another (Cohen et al. 2010, p.375) and take part in discussion that would not be possible in a one to one situation. However, Fraser et al. (2004) states that depending on group composition different group dynamics may arise. Peers can support each other but can also be hurtful to each other.

When interviewing children questions should be kept open-ended so that a single answer response can be avoided. Group sizes should be considered. If there are too few in a group, individuals may feel under pressure and with too many in a group, attention and focus may be lost (Cohen et al. 2010). When group interviews are used with children, Lewis (1992) recommends a group size of six or seven as ideal although a smaller group size can be used for younger children (cited in Cohen et al. 2010).
interviews should be kept below fifteen minutes, any longer and children may become distracted. The use of simple language is also important (Cohen et al. 2010).

Roberts (2000) offers a word of caution when interviewing children. If the researcher does not have much experience of talking to children, then the length of time estimated for answering questions may not be as expected. This can lead to inaccurate or incomplete data being collected. It is also critical to have good listening skills.

3.8 Reliability and Validity

3.8.1 Introduction

Reliability refers to the consistency and accuracy of results. If results from a study are reproduced under a similar setting, then the methods of data collection in the study is considered to be reliable (Joppe 2000). Therefore, two separate studies using similar methodology should yield the same results. Validity refers to the strength of research conclusions. It determines if the research measured what it was intended to measure and how accurate the results were in the research (Bell 1993).

3.8.2 Reliability and Validity in Tests

It is important that the researcher is aware of how much significance s/he will place on the data collected from tests in their overall findings in research. Data collected from tests may be affected by a number of factors which could pose a threat to the reliability and validity of the data collected (Cohen et al. 2010). These threats include students who become nervous by the idea of taking tests and so may yield negative responses even though they know the correct answer, errors by the marker, lack of motivation by the student and physical, emotional and social conditions at the time of the test (ibid.). A researcher using a test as a source of data collection “must ensure that it is appropriate, valid and reliable” (ibid., p.159).

3.8.3 Reliability and Validity in Questionnaires

Data collected from a questionnaire may be more reliable and valid than data collected from interviews. The reason being, individuals may be more honest in answering when not face to face with the researcher with no obligation to give the ‘correct’ answer. However, unlike interviews, where the interviewer may clarify the meaning of a
question, the individual completing the questionnaire is left to interpret the meaning of a question and may interpret it incorrectly. Individuals may not ‘be bothered’ to write answers to open ended questions. Questionnaires may also pose problems for individuals with limited literacy skills (Cohen et al. 2010). The piloting of questionnaires is recommended. The researcher should also “refine their contents, wording, length, etc. as appropriate for the sample being targeted” (Cohen et al. 2010, p. 158).

3.8.4 Reliability and Validity in Observation

There are a number of factors that may affect the reliability and validity of using observation for data collection. These include, the reaction of the group being observed by the physical presence of the researcher and the researcher becoming attached to the members of the group, which may affect the researcher’s judgements. Also, it is not possible to know if the results from this one method of data collection can be applicable to other situations (Cohen et al. 2010). In order to ensure validity, piloting is crucial so that “the observational categories themselves are appropriate, exhaustive, discrete, unambiguous and effectively operationalize the purpose of the research” (Cohen et al. 2010, p.159).

3.8.5 Reliability and Validity in Interviews

One of the main issues affecting reliability and validity in interviews is bias. The interviewer may have certain expectations from the outcome of the interview. Also the interviewer may seek answers that will support certain “preconceived notions” (Cohen et al. 2010, p.151). Hitchcock and Hughes (1989) state, that as interviews are “interpersonal” it is only to be expected that the interviewer will have “some influence on the interviewee and, thereby on the data” (cited by Cohen et al. 2010, p.151). One way to control reliability and validity in interviews is to have highly structured interviews. However, Silverman (1993) argues that open-ended interviews are important as they give a unique insight into the interviewee’s view of the world (cited in Cohen et al. 2010). Another issue with the reliability and validity of interviews is “leading questions”, this is where the “question influences the answer” (Cohen et al. 2010, p.151). This may be overcome by rephrasing the question.
3.9 Triangulation

Triangulation is “the use of two or more methods of data collection in the study of some aspect of human behaviour” (Cohen et al. 2010, p.141). By analysing data collected using different methods the researcher can “map out, or explain more fully, the richness and complexity of human behaviour” (ibid.).

There are many types of triangulation but the most commonly used in education is methodological triangulation. This type of triangulation refers to the use of more than one method for gathering data. Denzin (1970) identified two categories within methodological triangulation, ‘within methods’ or ‘between methods’. The ‘within method’ uses varieties of the same method to investigate an issue thus allowing the study to be duplicated to confirm reliability. The ‘between method’ involves using different research methods to achieve a particular outcome (cited in Cohen et al. 2010). The ‘between method’ was the method chosen for this study.

3.10 Ethics

When conducting any form of research a balance must be placed between the researcher’s quest to gain results and the participant’s rights. This is known as the “costs/benefits ratio” (Cohen et al. 2010, p.51). The researcher must ‘weigh up’ the benefits of the research against the participant’s personal costs. Benefits may include significant findings which will aid advancements in the future. Personal costs to participants may include intrusion into their personal lives which may cause embarrassment or leave participants feeling vulnerable. However, personal costs could also be positive, leaving participants more satisfied, with a sense of achievement (ibid.).

When planning research, several issues must be addressed. Issues relevant to this particular case study include the following: gaining access to the research setting; informed consent; risk of consequences; and right to privacy and anonymity (Cohen et al. 2010). For this case study, the researcher first required consent to be granted, on behalf of the Board of Management, from the school principal. This gave the researcher permission to be on the school premises and permission for the study to be conducted in the classroom (Appendix A). Garda Vetting was not required as the researcher never had ‘unsupervised access’ to the students, as there was always a teacher with the researcher throughout the study. A letter was sent to all parents informing them of their
child’s participation in the study (Appendix B). The students were fully aware of their involvement in the study and their identity was not revealed in the final report.

3.11 Timeline

The practical research period for this study began during the last week of January 2011 when the proposed project outline was uploaded to the eTwinning portal in order to find a suitable partner for the project. Nine positive replies from different countries were received over a three day period. A class in Northern France was chosen, as the profile of this class was similar to the County Galway class. It was also the first eTwinning project this school were involved in and the French teacher was enthusiastic about the project. The project was then registered with eTwinning to await approval from the NSS of both countries. While awaiting approval the students in the County Galway class completed their pre-tests and their ‘multiple intelligences’ tests. The members for each group were then decided upon. Approval for the project was granted on the 8th February 2011. The researcher, along with the teacher, customised the project’s TwinSpace layout and registered the Irish students in order for their individual login details and passwords to be generated.

The class was first introduced to the project on the afternoon of Wednesday 16th February, 2011. The project continued for another nine weeks, each Wednesday afternoon for two hours. Observations were conducted in week five and questionnaires and group interviews were conducted during week ten. The post tests were also administered.

Each Monday morning, for thirty minutes during the course of the project, the students used Skype to link up with their French partners. They were also encouraged to log on to the TwinSpace platform outside of school hours.

3.12 Conclusion

This chapter outlined and justified the research approach and methodologies the researcher chose for this study. A case study approach was used which incorporated both quantitative and qualitative methods of data collection.
Chapter 4: Findings

4.1 Introduction

This case study set out to explore the benefits of participating in an eTwinning project for small collaborative groups of students in a primary classroom setting. This chapter details the findings of this study. The findings will be presented in four sections based on the research questions as outlined in Chapter 3. Section one will examine the primary school students effective use of the TwinSpace platform. Section two will examine primary school students’ interaction, communication and collaboration within a group when using computer technology. Section three will explore the students’ motivation while using computer technology during the project. Section four will examine whether participation in an eTwinning project promotes broad based learning among primary school students.

4.1.1 Data Collection Tools

Data was collected using both quantitative and qualitative research methods. The tools used for data collection were pre and post-tests, questionnaires, observation and group interviews. The tests were administered before the study began and again at the end of the study. Observations took place mid-way through the study when the groups were well established. Group interviews were conducted and questionnaires administered at the end of the study. These four methods of data collection enabled the researcher to triangulate the data which strengthen the validity and reliability of this research.

4.1.2 The Participants

The participants in this study were a combined fourth and fifth class in a small rural school in East Galway, in the West of Ireland. The class was of mixed gender with mixed learning abilities. The class consisted of twenty students aged from ten to twelve years. The partner class involved in the project was from a school in the north of France and consisted of twenty four students of mixed gender and of similar age. The study focused on the findings of the Irish participants only. The Irish class was divided into five groups and each group researched a particular topic related to their local area. The group members were decided upon by results from a ‘multiple intelligence’ test and teacher observation. The participants’ gender was not taken into consideration.
4.2 The effective use of the TwinSpace by the primary school students

4.2.1 Introduction
To determine how effectively the students used the TwinSpace platform, data from the questionnaire and group interviews was analysed to determine if the students had any difficulties ‘logging on’ and ‘using’ the VLE. For the purpose of this study the word ‘using’ incorporates navigation, uploading of images/text and the ease of use of the web tools on the TwinSpace platform. In addition, the intercultural experience between the Irish and French students will be examined.

4.2.1.1 Group A
During the group interview the group agreed that they had no difficulties ‘logging on’ or ‘using’ the TwinSpace. However, data obtained from the questionnaire revealed that two students had difficulties ‘logging on’ and one student found the TwinSpace difficult to ‘use’. The group interview and questionnaire concurred that all four students enjoyed communicating with their French counterparts.

4.2.1.2 Group B
During the group interview the group agreed that they had no difficulties ‘logging on’ or ‘using’ the TwinSpace. Data obtained from the questionnaire confirmed that no students had difficulties ‘logging on’. However, it revealed that two students found the TwinSpace difficult to ‘use’. The group interview and questionnaire concurred that all four students enjoyed communicating with their French counterparts. A reason given by one student was that “we got to practice our French”.

4.2.1.3 Group C
During the group interview the group agreed that they had no difficulties ‘logging on’ or ‘using’ the TwinSpace. However, one student did acknowledge that “it was hard at the beginning but we got the hang of it”. Data obtained from the questionnaire revealed that two students had difficulties ‘logging on’ but all four students agreed that they had no difficulties ‘using’ the TwinSpace. The group interview and questionnaire concurred that all four students enjoyed communicating with the French students. A reason given by the one student was that “we enjoyed emailing them”.

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4.2.1.4 Group D

During the group interview the group agreed that they had no difficulties ‘logging on’ but they had difficulties ‘using’ the TwinSpace. Data obtained from the questionnaire revealed that two students had difficulties ‘logging on’ and two students found the TwinSpace difficult to ‘use’. The group interview and questionnaire concurred that three students enjoyed communicating with their French counterparts. The fourth student responded “I don’t like France”.

4.2.1.5 Group E

During the group interview the group agreed that they had no difficulties ‘logging on’ or ‘using’ the TwinSpace. However, data obtained from the questionnaire revealed that one student found it difficult to ‘log on’ and the same student found the TwinSpace difficult to ‘use’. The group interview and questionnaire concurred that all four students enjoyed communicating with their French peers.

4.2.1.6 Compiling the results

On compiling the collective results from all five groups and triangulating the data the following findings can be validated and verified. Sixty five per cent of the class had no difficulties ‘logging on’ to the TwinSpace and seventy per cent had no difficulties ‘using’ it. Ninety five per cent enjoyed communicating with their French partners.
4.3 Group Interaction, Communication and Collaboration

4.3.1 Introduction

In order to determine the students’ interaction, communication and collaboration within their groups, results were analysed from three sources of data collection; observation sheets, group interviews and questionnaires.

4.3.1.1 Group A

During the two hour observation period all four group members remained ‘on task’ throughout. Effective interaction, communication and collaboration within the group were observed. Each member had equal time on the computer. During the group interview all agreed that they enjoyed working in their group and that there were no issues. However, the data obtained from the questionnaire revealed that one member did not enjoy working in the group and felt that the group did not work well together. The reason given by the student was that “all the work was left for me and another group member to do”. In relation to the delegation of group work, three members agreed that it was evenly distributed within the group. All group members offered assistance to, and were assisted by, other members of their group.

4.3.1.2 Group B

During the two hour observation period two group members remained ‘on task’ throughout. The other two members were on task until one member became distracted mid-way through the observation period. This student is quite proficient using computers and became distracted when ‘less able’ group members were using the computer. When a problem arose with the computer this student proceeded to distract another member. Both were ‘off task’ for the remainder of the observation period. Each member had equal time on the computer. During the group interview all agreed that they enjoyed working in their group and that there were no issues. However, the data obtained from the questionnaire revealed that one member did not enjoy working in this group and thought the group did not work well together. The reason given by this student was “there was a lot of arguing in the group”. In relation to the delegation of group work, three members agreed that it was evenly distributed within the group. All group members offered assistance to, and were assisted by, other members of their group.
4.3.1.3 Group C

During the two hour observation period three group members remained ‘on task’ throughout. The fourth member was encouraged by other members of the group but appeared disinterested and was heard to comment “I don’t like projects”. Effective interaction, communication and collaboration were observed between the other three members. Each member had equal time on the computer. During the group interview all agreed that they enjoyed working in their group and that there were no issues. Data obtained from the questionnaire concurred that they all enjoyed working in their group. However, one member felt that the group didn’t always work well together as other group members “were not always listening”. In relation to the delegation of group work, three members agreed that it was evenly distributed within the group. All group members offered assistance to, and were assisted by, other members of their group.

4.3.1.4 Group D

During the two hour observation period all four group members remained ‘on task’ throughout. Effective interaction, communication and collaboration within the group were observed. Each member had equal time on the computer. During the group interview all agreed that they enjoyed working in their group and that there were no issues. Data obtained from the questionnaire concurred with this. In relation to the delegation of group work, all members agreed that it was evenly distributed within the group. All group members offered assistance to, and were assisted by, other members of their group.

4.3.1.5 Group E

During the two hour observation period two group members remained ‘on task’ throughout. The other two members were ‘off task’ during the final section of the observation period. When all four members were ‘on task’ effective interaction, communication and collaboration within the group were observed. Each member had equal time on the computer. During the group interview all agreed that they enjoyed working in their group and that there were no issues. Data obtained from the questionnaire concurred with this. In relation to the delegation of group work, all members agreed that it was evenly distributed within the group. All group members offered assistance to, while three group members were assisted by, other members of their group.
4.3.1.6 Combining the results

On combining the results from all five groups and triangulating the data obtained from observation sheets, group interviews and questionnaires the following findings can be verified and validated. Seventy five per cent of the class remained ‘on task’ for the full two hour observation period. Ninety per cent enjoyed working in their group and were of the opinion that their group worked well together. Eighty five per cent of the students thought that work was evenly distributed within their group. All students offered assistance to group members while ninety five per cent were assisted by other group members.

4.4 Student motivation using computer technology during the project

4.4.1 Introduction

In order to determine whether the students were intrinsically motivated when using a computer to participate in the project, results were analysed from three sources of data collection; observation sheets, group interviews and questionnaires.

4.4.1.1 Group A

All four group members were actively engaged in the project throughout the observation period. During the group interview all agreed that they enjoyed the project and using the computer to participate in the project. However, data obtained from the questionnaire revealed that one member did not enjoy the project but did enjoy using the computer applications and tools. Three group members had access to a computer at home and two of these students ‘logged on’ and ‘used’ the TwinSpace outside of school time.
4.4.1.2 Group B

Two group members were actively engaged in the project throughout the observation period. The other two members were actively engaged in the project until a problem arose with the computer after which they became distracted. During the group interview all agreed that they enjoyed the project and using the computer to participate in the project. Data obtained from the questionnaire concurred with the group interview findings. Three group members had access to a computer at home and all three students ‘logged on’ and ‘used’ the TwinSpace outside of school time.

4.4.1.3 Group C

Three group members were actively engaged in the project throughout the observation period. The fourth member was not actively engaged in the project but did not distract his fellow group members. During the group interview all agreed that they enjoyed the project and using the computer to participate in the project. Data obtained from the questionnaire concurred with the group interview findings. All four group members had access to a computer at home and two of these students ‘logged on’ and ‘used’ the TwinSpace outside of school time.

4.4.1.4 Group D

All four group members were actively engaged in the project throughout the observation period. During the group interview all agreed that they enjoyed the project and using the computer to participate in the project. Data obtained from the questionnaire concurred with the group interview findings. Two group members had access to a computer at home and both ‘logged on’ and ‘used’ the TwinSpace outside of school time.

4.4.1.5 Group E

Two group members were actively engaged in the project throughout the observation period. The other two members were actively engaged in the project until the final phase of the observation period. During the group interview all agreed that they enjoyed the project and using the computer to participate in the project. Data obtained from the questionnaire concurred with the group interview findings. Three group
members had access to a computer at home and all three students ‘logged on’ and ‘used’ the TwinSpace outside of school time.

4.4.1.6 Combining the results
On combining the results from all five groups and triangulating the data obtained from observation, group interviews and questionnaires the following findings can be verified and validated. Seventy five per cent of the class were actively engaged in the project throughout the full two hour observation period. Ninety five per cent enjoyed working on the project and one hundred per cent of the class enjoyed using computer for the project. Eighty per cent of the students who had access to a computer at home ‘logged on’ and ‘used’ the project’s TwinSpace outside of school time.

4.5 Does participation in an eTwinning project promote broad based learning among primary school students?

4.5.1 Introduction
In order to determine if participation in the eTwinning project ‘Our Local Place’ promoted broad based learning among the students, results from three sources of data collection were analysed; pre and post-test results, group interviews and questionnaires. Findings for content learning, computer technology and affective learning will be examined.

4.5.2 Content Learning
Each of the five groups studied a different topic related to their local area. They uploaded information gathered to the TwinSpace platform. At the end of the study each group created a ‘photostory’ presentation of their group topic which they presented to
the whole class. These presentations were also uploaded to the TwinSpace platform so that the students and their French counterparts could access them outside of school time. The pre and post-test results were calculated by awarding one point for correctly answering each question. Each student could score a maximum of four points per group topic, with a maximum of twenty points available from the five different group topics. Analysing the results from the pre and post-tests, the following findings emerged.

4.5.2.1 Group A

In regard to this group’s own topic, all four students scored zero points in the pre-test. The post-test results showed a marked improvement. Two students scored the maximum four points and the other two students scored two points each.

In regard to the other four group topics, the pre-test results showed two students scored five points, one scored three points and the other student scored two points. The post-test results showed a considerable improvement. The scores for the four students were; thirteen points, twelve points, eleven points and ten points.

The cumulative scores for each individual student for all five topics from both pre and post-tests are shown in Bar Chart 4. The average group score in the pre-test was 3.75 and 14.5 in the post-test, an overall average improvement of two hundred and eighty seven per cent for the group.

4.5.2.2 Group B

In regard to this group’s own topic, all four students scored one point each in the pre-test. The post-test results showed a significant improvement. All students scored a maximum of four points.

In regard to the other four group topics, the pre-test results showed one student scored eight points, one five points and two students scored four points. The post-tests results
also showed a marked improvement. The scores for the four students were; fourteen points, ten points, with two scoring nine points.

The cumulative scores for each individual student for all five topics from both pre and post-tests are shown in Bar Chart 5. The average group score in the pre-test was 6.25 and 14.5 in the post-test, an overall average improvement of one hundred and thirty two per cent for the group.

4.5.2.3 Group C

In regard to this group’s own topic, two students scored two points, one scored one point and the other student scored zero points in the pre-test. The post-test results showed a reasonable improvement. Three students scored the maximum four points and the other student scored two points.

In regard to the other four group topics, the pre-test results showed one student scored eleven points, one scored six points, one five points and the other student three points. The post-test results showed a considerable improvement. The scores for the four students were; thirteen points, eleven points, ten points and seven points.

The cumulative scores for each individual student for all five topics from both pre and post-tests are shown in Bar Chart 6. The average group score in the pre-test was 7.5 and 13.5 in the post-test, an overall average improvement of eighty per cent for the group.
4.5.2.4 Group D

In regard to this group’s own topic, one student scored one point and the other three students scored zero points in the pre-test. The post-test results showed a significant improvement. Three students scored the maximum four points and the other student scored three points.

In regard to the other four group topics, the pre-test results showed that one student scored thirteen points, one scored ten points, one six points and the other student scored four points. The post-test results showed a major improvement. One student scored the maximum sixteen points, two students scored fifteen points, and the fourth student scored thirteen points.

The cumulative scores for each individual student for all five topics from both pre and post-tests are shown in Bar Chart 7. The average group score in the pre-test was 8.5 and 18 in the post-test, an overall average improvement of one hundred and twelve per cent for the group.

![Bar Chart 7: Group D - cumulative scores for each individual student for all five topics from both pre and post-tests.](image)

4.5.2.5 Group E

In regard to this group’s own topic, two students scored three points, one scored two points and the other student scored one point in the pre-test. The post-test results showed a marked improvement. All four students scored the maximum four points each.

In regard to the other four group topics, the pre-test results showed one student scored nine points, one scored eight points, one seven points and one student four points. The post-test results showed a reasonable improvement. One student scored thirteen points, two students scored eleven points, and one student ten points.
The cumulative scores for each individual student for all five topics from both pre and post-tests are shown in Bar Chart 8. The average group score in the pre-test was 9.25 and 15.25 in the post-test, an overall average improvement of sixty per cent for the group.

4.5.2.6 Combining the results for Content Learning

Combining the results from the pre-test and post-test of all five groups the following findings can be verified and validated. The test results showed that each group’s overall average improvement of their local area knowledge was: Group A: two hundred and eighty seven per cent; Group B: one hundred and thirty two per cent; Group C: eighty per cent; Group D: one hundred and twelve per cent and, Group E: sixty per cent. An average of one hundred and thirty four per cent overall class improvement in the area of content learning can be extrapolated from the test results.

4.5.3 Computer Technology

By participating in the eTwinning project all twenty Irish students learned how to use new computer tools and applications while also improving their computer skills. They emailed, used instant ‘chat’ and blogged on the TwinSpace platform. This platform provided them with a safe and secure environment for communicating and collaborating with each other and their partner school in France.

Each student also created a ‘Voki’ to upload to the TwinSpace. Students took turns each week to record updates on their group’s progress. These ‘Voki’s’ were then uploaded to the TwinSpace and all students could access them. Each group also created a ‘Photostory’ presentation on their group topic. All groups used a ‘story board’ to decide what images and text to use in their presentation. Each member recorded ‘voice overs’ for the presentations which were presented to the whole class. These presentations were also uploaded to the TwinSpace platform where students could access them outside of
school time. For the majority of these students this was the first time they had used these computer tools and applications.

4.5.4 Affective Learning

To determine whether the students were learning affectively as well as cognitively this section will examine the students own personal feelings in relation to the project. Results of data obtained from the questionnaires and group interviews were analysed. On compiling the results from all five groups and triangulating the data the following findings can be validated and verified. In regard to what the students liked most about the project, fifty per cent of the class found the project fun, twenty five per cent enjoyed using the computer, twenty per cent enjoyed gathering information for their group and five per cent didn’t enjoy the project. In regard to what the students liked least about the project: fifty per cent of the class had no negative comments or didn’t answer this question; thirty five per cent “didn’t enjoy the writing”, this refers to the ‘story board’ writing for the ‘Photostory’ presentation; five per cent, “didn’t like the arguing in my group”; five per cent didn’t enjoy the fact that “group members weren’t always listening” and five per cent “didn’t like being told what to do”. All students, with one exception, expressed an interest in taking part in another eTwinning project.

4.6 Conclusion

The data captured for this study was gathered using a variety of research tools. This data was analysed and the findings presented in this chapter. Chapter 5 will analyse these findings and compare and/or contrast them to the literature presented in Chapter 2.
Chapter 5: Discussion

5.1 Introduction
In Chapter 4, the findings from the case study research were presented. This chapter will discuss those findings in greater detail and explore whether or not they are consistent with current theories. The findings will be discussed in relation to the research questions for this case study. These findings will be analysed and compared and/or contrasted with the existing body of knowledge as outlined in Chapter 2.

5.2 Can primary school students effectively use the TwinSpace platform as a VLE?

5.2.1 Introduction
The duration of the eTwinning project was ten weeks with two hours of classroom time allocated each Wednesday afternoon. During each two hour session all students had equal time on the computer. Each student ‘logged on’ and ‘used’ the TwinSpace during their ‘computer time’ and became very familiar with it.

Salmon’s (2003) ‘five stage model’ for effective e-learning was implemented and provided an effective model for this study. The students were first introduced to the TwinSpace platform and the project was explained to them. This heightened their curiosity and interest. They used the web tools on the TwinSpace to communicate with each other and their French peers. They uploaded information to exchange with their class and their French partners. They created ‘vokis’ and ‘photostory’ presentations which they uploaded to the platform. They were encouraged to ‘log on’ to the TwinSpace outside of school time and to continue their communication and exchanges with their French counterparts even after the study had ended. During the course of the study the researcher and teacher acted as e-moderators and offered support when required.

5.2.2 The eTwinning TwinSpace Platform
The TwinSpace is a well-designed VLE which offers a safe and familiar environment for students to ‘use’ both in school and at home. However, it did proved challenging for
some students. This concurs with Akar et al. (2004) who state that VLE’s are not always easily introduced into a traditional classroom setting and may prove challenging for some learners. They acknowledge that extra effort is required from learners and that learners need to be given time to adjust to this new way of learning.

5.2.2.1 Difficulties encountered

The findings show that thirty five per cent of the students had difficulties ‘logging on’ to the TwinSpace platform and thirty per cent had difficulties ‘using’ the platform. These difficulties can mainly be attributed to some students being less familiar with computers and internet use.

5.2.2.1.1 ‘Logging on’ to the TwinSpace

The initial difficulty students had ‘logging on’ to the platform was with passwords generated by TwinSpace which were encrypted. This meant that individual letters appeared as ‘dots’ when typed. This caused some confusion and mistakes were often made by students. The researcher changed these to very simple and easily remembered passwords for each student. However, as these passwords were still encrypted some students still had difficulties. As they became more familiar with the TwinSpace platform and their own ‘log on’ details, this improved. A factor that may have contributed to some students having difficulties is the age of these students. The groups consisted of students between ten and twelve years of age. By twelve years, children’s cognitive abilities are the same as adults so they are able to learn and use computer software as effectively as adults. From seven to eleven years their cognitive abilities are not as advanced (Jacko and Sears 2002). The computer abilities of younger group members may not have been equal to older members. This, in addition to their lack of computer experience, may explain why some students had difficulties with simple tasks. To help such students the researcher created a simple ‘screen shot’ printout (Appendix E) which showed the students how to ‘log on’ and upload their details.

5.2.2.1.2 ‘Using’ the TwinSpace

A ‘Promethean’ whiteboard was used to show the students how to navigate, upload images and text, and use the web tools on the TwinSpace platform. Students who had experience using computers, especially those who had access to a computer at home had no difficulties with this. However, those with less experience had difficulties
remembering how to ‘use’ the different elements on the TwinSpace. This concurs with Oliver and Herrington (1995) who suggested that VLE’s can be limited as they do not provide instant teacher support and feedback so that users unfamiliar with VLE’s may lose out on basic instructional information (cited in Neto and Brasileiro 2007). Again, the cognitive abilities of some students may also have been a factor. The researcher created a simple ‘screen shot’ printout (Appendix F) to help the students.

5.2.3 Intercultural Experience

All the students, with one exception, enjoyed the intercultural experience with their French partner school. They were enthusiastic to learn new French words and to find out about the lives of their new French friends. Allowing the class to use ‘skype’ for thirty minutes on Monday mornings facilitated ‘bonding’ between the partner classes. Unfortunately the French class did not contribute to the project as was initially intended. Even though the French teacher was aware of what the project entailed and was very enthusiastic in the beginning, the French students failed to upload text or images related to their local area to the TwinSpace platform. The researcher believes that this is due to the French teacher being very inexperienced with computer technology. The eTwinning portal provides instructions on using the TwinSpace platform. It also provides an effective helpdesk. However, the French teacher involved in the project requested help from the Irish teacher on how to do basic tasks on the TwinSpace platform. He was given the help he requested and was also directed to the eTwinning portal where he could access further assistance. He was also informed that the eTwinning portal could be accessed from the TwinSpace platform through the ‘Guidelines’ tab. Subsequently the French students uploaded their personal details and provided information on their school and local area through emails and blogs on the TwinSpace. Unfortunately, the French teacher did not develop the collaborative groups with his students but good communication between the two classes continued throughout the project.

This intercultural interaction between the two schools contributed to the Irish students’ personal and social development (Department of Education and Science 1999) but it could have been a more successful intercultural experience if both classes contributed equally. An eTwinning project relies “solely on the enthusiasm and motivation of the teacher” (Directorate-General for Education and Culture 2008) but if the teacher’s computer competence is an issue (Becta 2007) then the project’s objective may not be achieved.
5.3 How do primary school students interact, communicate and collaborate within a group when using computer technology?

5.3.1 Introduction

Students working within groups are active participants who are learning with their peers. This form of learning assists development of higher order thinking, allowing deeper understanding of what is being learned (Palloff and Pratt 2005). Five groups of four students were decided upon. This was recommended by Gödek (2004) as being an optimum group size. This allowed each student an opportunity to enhance their learning and skills (Gödek 2004, Cooper et al. 1990) by allowing them to learn more of what was being taught and retain the information longer (Johnson et al. 1991). Groupings were decided upon from results obtained from a ‘multiple intelligence’ test and also from teacher observations. Each of the five groups comprised of students whose cognitive strengths and styles lay in different intelligences (Gardner 1983). The use of computers for the project gave the students access to different forms of media such as text, images, and video which allowed them to develop different skills while actively learning (Komninou 2010).

5.3.2 Social Interaction

Members of each group were encouraged to help other members of their group. Encouraging this social interaction allowed for learning to occur within each student’s ZPD with the help of a MKO peer (Santrock 2004). While the data from the findings state that one hundred per cent of students assisted other members of their group, and ninety five per cent of students were assisted by members of their group this was not always observed by the researcher. The researcher observed that within some groups, the students were not always willing to be assisted by their fellow group members which in turn caused some conflict within groups. This concurs with previous research findings which state that groups made up of members of different abilities, experience, personalities etc. can lead to a greater range of viewpoints and resources but can also suffer levels of conflict (Moreland et al. 1996). The exception to this was Group D, where one student assisted his fellow members with ease and without tension and all assistance and guidance from him was accepted openly and graciously by his fellow group members. This in turn allowed for harmony within the group and increased their overall learning. This was completely down to this student’s agreeable personality.
which concurs with Forsyth (1999) who states that group members with agreeable personalities have the ability to exert a calming influence on their group, allowing their group to work in harmony.

Students were also allowed to discover information for themselves (Piaget 1973) and gather information relating to their group’s topic, enabling the students to be more creative and productive. This enabled the students to understand more about their group’s topic.

5.3.3 Communication and Collaboration while using computers

Using computers in the classroom increases communication and collaboration among students (Chernick and White 1981). This was evident by the findings which indicated that ninety per cent of students enjoyed working in their group and agreed that their group worked well together. This concurs with previous research (Johnson et al. 1991) which concludes that collaborative groups appear to be more satisfying for students. The researcher observed how enthusiastic and excited the students became each Wednesday afternoon when it was time for them to use the computers for the project. Their learning became ‘interactive’ (Bork 1985) resulting in “different and contrasting views” thus allowing them to develop a “rich and robust knowledge base” (Sulaiman et al. 2004, p. 59). Muller and Perlmutter (1985) state that students prefer to work together on a computer rather than on their own. The researcher refutes this claim, with reference to this particular age group, as when arguments or disruption occurred within groups it was mainly caused by students wanting to get ‘control’ of the computer. While all students were allowed equal time on the computer, some group members became distracted when a ‘less able’ student was using the computer. Students who were ‘more able’ became frustrated at the slow speed of their group members. Perhaps if all students were of the same level of computer ability then Muller and Perlmutter’s (1985) claim may have applied to this study.

5.3.4 ‘On Task’

During the two hour observation period, seventy five per cent of students were ‘on task’ throughout. The students who were not on task for the full two hour period were ‘on task’ initially and only went ‘off task’ in the latter half of the observation period. While ‘on task’ all students, with one exception, interacted and collaborated effectively within
their group. The reason all students did not remain on task was most probably down to two factors, competition between group members and lack of social skills among the students. Forsyth (1999) states, that within groups, competition can promote conflict between individuals. The competition in this instance was related to students trying to gain ‘control’ of the computer. Daiute (1985) also points to the fact that, although children enjoy working together, they may not have the required social skills to collaborate effectively at first. They can often be aggressive and lack respect for each other and this maybe the reason many teachers abandon group work (Gödek 2004). This concurs also with Biott (1987) who suggested that children do not often tolerate each other’s viewpoints and confrontation can occur within the group. As children get older their social skills should improve (Daiute 1985).

5.3.5 Individual Group Member Contribution

Eighty five per cent of students agreed that each group member contributed equally to the group work. The group was important to its members. They were psychologically connected (Holt 1987) and this increased their desire to contribute to the group work. The researcher observed that most students contributed equally but that some students who contributed textual material felt their contributions outweighed contributions of images by other students.

5.4 Are primary school students intrinsically motivated when using computer technology?

5.4.1 Introduction

Each group of four students had access to one laptop during the two hour project session each Wednesday afternoon for the course of the study. Initially, the researcher thought that one laptop per group may affect the motivation and engagement of the students and in turn, affect the progress of each group. However, each week during the study, valuable learning time was lost as the researcher and/or teacher dealt with internet connection issues or computer problems. Having more computers per group may have actually disrupted groups further, as the researcher and/or teachers time may have been spent dealing with computer problems instead of assisting students with project related issues. Each group member was allowed equal time on the computer during each weekly session.
5.4.2 Student Motivation

When learners are actively engaged in their own learning, they feel more in control of their learning, which in turn improves their motivation to learn (Anderman and Midgley 1998, Pritchard 2005). The findings show that seventy five per cent of students were actively engaged in their learning for the full two hour observation period. Almost all students were actively engaged in the project for the first half of the observation period. Then, some students became frustrated and disagreeable. This mainly happened when students were waiting for group members to finish on a computer or waiting for the teacher or researcher to deal with a computer/internet issue. This frustration may be attributed to the students’ level of social skills (Daiute 1985) but could also be attributed to students competing with one another within their group (Forsyth 1999) for ‘control’ of the computer.

Students find it fun and enjoyable working on computers, which in turn, increases their motivation (Dev 1997). The researcher concurs with this, as the findings state that ninety five per cent enjoyed working on the project while all enjoyed using the computer for the project. The group was important to its members. All were actively involved in gathering as much information as possible relating to their group topic. This concurs with Holt (1987) who states that when a group is important to its members, interaction and motivation are increased. He suggests that one way to make a group important, especially for children, is to include activities that are fun. Fifty per cent of the students stated that the ‘fun’ element was what they liked most about the project. The students had a desire to partake in the project and were actively involved in their learning which increased their motivation, leading to successful learning (Underwood & Underwood 1990, Lumsden 1994). The students were motivated to learn because they enjoyed the project regardless of whether it brought a reward or not. They did, however, have a sense of satisfaction and accomplishment which indicates that they were intrinsically motivated (Covington 1998).

5.4.3 Intrinsic Motivation

When students are intrinsically motivated they will retain information for longer (Dev 1997) and are more likely to continue to educate themselves outside of the classroom (Kohn 1993). The eTwinning Twinspace enabled learning to continue outside of the classroom. The findings show that eighty per cent of students who had access to a
computer at home ‘logged on’ and ‘used’ the TwinSpace outside of school time. Each student independently made the decision to continue their learning at home, and it was not enforced by the researcher or teacher but was encouraged by both.

5.5 Does participation in an eTwinning project promote broad based learning among primary school students?

5.5.1 Introduction

By participating in the eTwinning project ‘Our Local Place’ the students learned both cognitively and affectively. They learned how to use new computer tools and applications while improving their existing computer skills. This section will discuss the students’ learning through examination of content, computer technology and affective learning.

5.5.2 Content

Through participation in the eTwinning project the students’ knowledge of their local area improved greatly. The findings state that the class average overall improvement on content learning was one hundred and thirty four per cent. This can be verified by examining the individual results and group average results as outlined in the findings.

Results for the whole class from the pre-test showed that fifteen of the twenty students received zero or one point, out of a maximum of four, for their own group topic. The post-test results showed that seventeen students received the maximum four points. Over all the five group topics, each student could achieve a maximum of twenty points. No student achieved this in the post-test. However, three students in Group D did achieve nineteen points. The overall improvement of each group is intrinsically linked to the level of social skills of group members and how each group interacted and collaborated throughout the study. This concurs with Brownwell (1991) who stated that the level of social skills of group members contributing to group collaborations influence how much and what children learn from these collaborations.

All four members of Group A interacted and collaborated effectively during the observation period and throughout the study. The total result, across the five group topics, for the group in the pre-test was fifteen points out of a possible eighty points.
(twenty points per member). The lowest score achieved by a member in the pre-test was two points and the highest was five points. The total group score increased to fifty eight points in the post-test giving a total increase of forty three points. The lowest member score in the post-test was thirteen and the highest score was seventeen. This group interacted and collaborated very effectively and there was no conflict or disagreements within the group.

All four members of Group B did not interact and collaborate effectively during the observation period. This did improve during the study but on occasion conflict did occur between group members. This conflict was mainly due to ‘more able’ members wanting ‘control’ of the computer. This concurs with Moreland et al. (1996) who state that groups made up of different abilities can suffer high levels of conflict. The total result, across the five group topics, for the group in the pre-test was twenty five points out of a possible eighty points (twenty points per member). The lowest score achieved by a member in the pre-test was five points and the highest was nine points. The total group score increased to fifty eight points in the post-test giving a total increase of thirty three points. The lowest member score in the post-test was thirteen and the highest member score was eighteen. When there was no conflict within this group, they interacted and collaborated effectively.

Three members of Group C interacted and collaborated effectively during the observation period and throughout the study. The fourth member did not interact effectively with the other group members but this did improve slightly during the study. This failure to interact and collaborate with group members was mainly due to this member’s intelligence strength being intrapersonal. This group member preferred to work alone but did contribute to the project work and was very interested in using the computer. Christensen and James (2008) address the fact that there is extensive research on the benefits of collaborative learning but almost no research conducted on how students feel about working with group members when they are accustomed to working on their own. The total result, across the five group topics, for the group in the pre-test was thirty points out of a possible eighty points (twenty points per member). The lowest score achieved by a member in the pre-test was three points and the highest was twelve points. The total group score increased to fifty four points in the post-test giving a total increase of twenty four points. The lowest member score in the post-test was nine and the highest member score was seventeen. This group did not receive the
benefit of all four members interacting and collaborating effectively but there was no conflict or disagreements within the group.

All four members of Group D interacted and collaborated effectively during the observation period and throughout the study. The total result, across the five group topics, for the group in the pre-test was thirty four points out of a possible eighty points (twenty points per member). The lowest score achieved by a member in the pre-test was four points and the highest was fourteen points. The total group score increased to seventy four points in the post-test giving a total increase of forty points. The lowest member score in the post-test was seventeen and the highest member score was nineteen with three members obtaining this score. This group was the most effective group in terms of interaction and collaboration. Their success was mainly due to the agreeable personalities of its members (Forsyth 1999). The social skills of the members of this group were at a required level to allow collaboration to be effective (Daiute 1985). No conflict or disagreements were observed within this group.

All four members of Group E failed to interact and collaborate effectively during the observation period but this did improve as the study progressed. Any conflict was mainly due to two members competing with each other to gain ‘control’ of the computer. This concurs with Forsyth (1999) who states that competition is a powerful motivator but can promote conflict between individuals. The total result, across the five group topics, for the group in the pre-test was thirty seven points out of a possible eighty points (twenty points per member). The lowest score achieved by a member in the pre-test was five points and the highest was twelve points. The total group score increased to sixty one points in the post-test giving a total increase of twenty four points. The lowest member score in the post-test was fourteen and the highest member score was seventeen. When there was no conflict within this group they interacted and collaborated effectively.

These small collaborative groups accommodated different learning styles (Muller and Perlmutter 1985). Their interaction with computers had beneficial effects on the students learning and development (Stanton et al. 2002). The students became interactive in their own learning (Bork 1985) which resulted in a more satisfied learner who is more likely to retain the knowledge they gleaned for longer (Dev 1997).
5.5.3 Computer Technology

All students enjoyed using a computer for the project. They learned how to use new computer tools and applications while also improving their existing computer skills. It assisted them to gather and discover information for themselves which resulted in them being active in their learning (Tapscott 1998). Students participated in their own learning resulting in “different and contrasting views” which in turn developed a broader knowledge of their group’s topic (Sulaiman et al. 2004, p. 59). The TwinSpace provided them with a safe environment for communicating and collaborating with each other and their French partners. The TwinSpace enable them to use web tools such as email, chat and blogs. Even though Becta (2008) reported that young learners are prolific users of these new technologies, it was the first time the majority of the students in the class had used these tools. Unfortunately, as the students in the Irish and French classes had a poor grasp of each other’s first language, communication through emails and blogs was very basic. Hence, no real friendships developed and because of this it is unlikely that any students will remain in touch with their French partners. This can also be attributed to the French teacher’s lack of competence with computer technology and his inability to progress with the eTwinning project as was initially intended. Allowing the students to ‘skype’ their French partners did provide for a ‘bond’ to develop between the two classes.

Each group created a ‘voki’ to represent their group. A ‘voki’ is a talking voice character or avatar which can be uploaded to VLE’s, websites and blogs. At the end of each weekly project session a different group member recorded an update of their group’s progress using a voice recorder. This voice recording was uploaded to their ‘voki’ and then uploaded to the TwinSpace. Each week, these ‘vokis’ were shown to the whole class. Initially, one student did not want to record their voice. This was accepted by the researcher. However, as the project progressed, this student’s confidence and self-esteem grew and the student’s voice was recorded. This student became a very enthusiastic participant in the project.

Each group also created a ‘photostory’ presentation at the end of the project. Each group were given ‘storyboard’ sheets (Appendix G) and they decided among themselves which images and information they would use in relation to their group topic. All images and text gathered over the course of the project were uploaded to specific group related folders on the TwinSpace. They made group decisions as to the order in which
each group member would record their voice. All group members were eager to record their voices for the presentation. When each group’s presentation was completed these were uploaded to the TwinSpace. All presentations were then shown to the whole class. They were all very particular regarding the quality of content published online which concurs with Becta’s (2008) research that students “feel a sense of ownership and engagement when they publish work online and this can encourage attention to detail and an overall improved quality of work”. All students with access to a home computer could also download these presentations on their home computer. They all showed a sense of pride and a great sense of accomplishment after creating these presentations. Many students asked questions from the researcher about using this computer application at home for their own use.

5.5.4 Affective learning

Affective learning is often not taken into consideration in classroom planning (Jones and Issroff 2004). However, overwhelming evidence suggests that students will learn more effectively when affective factors are considered (Weare 2000). When students are happy in their work and are enjoying their work they are emotionally connected which facilitates successful learning (Weare 2000, Department of Education and Science 1999). The findings state that ninety five per cent of students enjoyed working on the project and all students enjoyed using the computer for the project. In addition, eighty per cent of students, who had access to a computer at home, continued working on the project outside of class time on their own initiative. This verifies that the students were highly motivated and emotionally connected to the project and had a desire to partake in the learning process (Lumsden 1994). Interpersonal and Intrapersonal intelligences are essential for “the social and emotional dimensions of learning” (Department of Education and Science 1999, p.16). These intelligences support other traditionally accepted intelligences (Weare 2000). All five groups consisted of students with varied intelligence strengths and weakness. This facilitated group members to use a variety of intelligences which in turn maximised their learning potential (Komninou 2010) allowing for ‘deep understanding’ (Gardner 2006). Ninety per cent of students enjoyed working in their group which increased their self-esteem and motivation (Croll and Hastings 1996, cited in Gödek 2004) thus enhancing the students’ social and personal development. This in turn, gave them an understanding of the benefits to be gained by co-operation (Dillenbourg 1999, Department of Education and Science 1999).
The findings show that the students considered the project to be fun. This increased their interaction and motivation (Holt 1987) which also increased their self-esteem and emotional well-being. Fifty per cent of students had no negative comments on the project. All students, with one exception, expressed a desire to take part in another eTwinning project.

5.6 Limitations of this study

This case study allowed the researcher focus on different groups’ reactions in a particular situation which provided “a unique example of real people in real situations” (Cohen et al. 2010, p. 253). The researcher had little control over the situation and let events happen naturally (Hitchcock & Hughes 1995) enabling the situations to “speak for themselves, rather than to be largely interpreted, evaluated or judged by the researcher” (Cohen et al. 2010, p.254). However, as this case study was based on one class in a rural primary school in County Galway, it is evident that the researcher relied on ‘convenience sampling’ for the research. As this sample does not represent the wider population, the findings cannot be generalised and only refer to the sample class involved in the research. (Cohen 2010). Therefore, further research is required.

5.7 Conclusion

By participating in the eTwinning project the students developed cooperation and teamwork skills. It improved their social skills, enabling them to respect each other’s views and ideas. They learned how to use new computer tools and applications and improved their existing ICT skills. Their knowledge of their local area increased greatly. Participation in the project equipped the students with storyboarding skills which allowed them plan their own digital content. From a language viewpoint, it helped students improve their foreign language. It also gave them a deeper understanding of another European country and its people. The project motivated the students, increased their confidence and self-esteem, which enhanced their personal development.
Chapter 6: Conclusions and Recommendations

6.1 Introduction

This case study set out to explore the benefits of participating in an eTwinning project for small collaborative groups in a primary classroom setting. The target population for this study was twenty primary school students from fourth and fifth class in a small rural primary school in County Galway. Their ages ranged from ten to twelve years and they were of mixed gender. The partner group chosen to partake in the eTwinning project was from a primary school in the North of France. This class consisted of twenty four students of similar age and who were also of mixed gender. This study focused on the findings of the Irish participants only. The students’ gender was not taken into consideration for this study. This chapter draws on conclusions from this case study and will offer recommendations where appropriate.

6.2 Outcomes of the case study

The purpose of this case study was to explore the benefits of participating in an eTwinning project for small collaborative groups in a primary classroom setting. The research questions were set out as follows

- Can primary school students effectively use the TwinSpace platform as a VLE?
- How do primary school students interact, communicate and collaborate within a group when using computer technology?
- Are primary school students intrinsically motivated when using computer technology?
- Does participation in an eTwinning project promote broad based learning among primary school students?

6.2.1 Can primary school students effectively use the TwinSpace as a VLE?

The eTwinning TwinSpace was an effective VLE for the primary school students involved in this study. It provided them with a safe environment for communicating and collaborating. They learned to use new web tools through the TwinSpace and uploaded...
word documents, images and presentations which they could share with each other and their French partners. Students with access to a computer at home were able to ‘use’ the TwinSpace platform outside of school time which facilitated self-directed learning. However, some students who were less familiar with computers had difficulties ‘logging on’ and ‘using’ the TwinSpace platform effectively.

6.2.1.1 Recommendations

In the researcher’s opinion the eTwinning TwinSpace platform is a well-designed VLE and is easy to use. However, some students who were less familiar with computers and the internet had difficulties. The researcher would recommend that a more basic version of the TwinSpace platform be designed for younger students or those with little or no experience of computers. This basic version would allow younger students become more familiar with using a VLE. For this basic version the researcher would recommend not encrypting the password to make ‘logging on’ easier. The full range of TwinSpace functions would not be necessary on the basic version. It would simply allow younger students to gain initial experience of ‘using’ VLE’s and web tools, enabling them to ‘graduate’ to using the existing TwinSpace platform.

On the TwinSpace platform it would be of benefit to have a ‘Help’ tab available which students and teachers, having difficulties, could access. There is a ‘Guidelines’ tab which, when selected, redirects the user to the main eTwinning portal which opens in a new window. Support can be accessed here but this may prove confusing for those less familiar with computers and web pages. A ‘Help’ tab specific to the tools available on the TwinSpace, which opens within a window on the platform itself would be beneficial. This would have assisted the French teacher involved in the eTwinning project who had difficulties with some basic tasks on the TwinSpace platform. As many students simply forgot how to do tasks throughout the project, the researcher printed out simple ‘screen shot’ help sheets to assist the students. This would not have been necessary if such a ‘Help’ function was available directly on the TwinSpace platform.

It would also be of benefit to include a ‘translating tool’ on TwinSpace so that students can communicate more effectively with partner schools in different languages. This would enable more meaningful friendships to develop between the students which would ultimately improve their language skills.

70
6.2.2 How do primary school students interact, communicate and collaborate within a group when using computer technology?

By participating in the eTwinning project the students developed co-operation and teamwork skills. They learned to respect each other’s views and ideas and their social skills improved. Using computer technology for this project motivated the students which increased the interaction, communication and collaboration within the groups.

6.2.2.1 Recommendations

The group members were decided upon by results of a ‘multiple intelligence’ test and teacher observations. Each group comprised of students of different intelligence strengths and weaknesses. However, in hindsight, more attention should have been given to the students’ computer abilities in each group. If the groups consisted of members of similar computer abilities, while taking cognisance of the ‘multiple intelligence’ test, it may have resulted in less conflict within some groups and more acceptance of a MKO. Careful group selection and group behaviour monitoring is imperative for successful collaborative learning.

6.2.3 Are primary school students intrinsically motivated when using computer technology?

The students had fun and enjoyed working on the computers during the project. This increased their motivation, which in turn, increased their confidence and self-esteem, enhancing personal development. The majority of students who had access to a computer at home continued their learning outside of school time. This was done on their own initiative which indicates that they were intrinsically motivated by the project. The students were actively engaged in the learning process, and were intrinsically motivated, which led to a successful learning outcome.

6.2.4 Does participation in an eTwinning project promote broad based learning among primary school students?

By participating in the eTwinning project ‘Our Local Place’ the students learned both cognitively and affectively. Their local area knowledge improved greatly. They learned how to use new computer tools and applications. They also improved their existing computer skills. Participation in the project equipped the students with storyboarding
skills which allowed them plan their own digital content. It helped students improve their foreign language. It gave them more of an understanding of another European country and its people. They learned how to co-operate effectively within a group, improving teamwork and collaboration skills. It helped develop their social skills and enhanced personal development by increasing their self-confidence and self-esteem. The project intrinsically motivated the students, which led to a very successful study outcome, from both a cognitive and affective learning perspective.

6.3 Conclusion

This case study set out to explore the benefits of participating in an eTwinning project for small collaborative groups in a primary classroom setting. The study concluded that participation in an eTwinning project is extremely beneficial for primary school students, both cognitively and affectively. Participation in the project allowed the students to maximise their learning potential by using a spectrum of intelligences that are most beneficial to their learning. They were intrinsically motivated in the project and continued their learning outside of school time. However, it did state that the TwinSpace platform may pose some difficulties for younger children and/or those unfamiliar with computers and recommends some amendments and additional functions. The formation of small groups increased collaboration and social skills. However, careful member selection and group behaviour monitoring, especially where younger students are concerned, is imperative in order to avoid conflict within small groups. As this case study focused only on one class over a ten week period further research is required to validate the findings of this study.
Bibliography


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APPENDICES
Appendix A
Letter to Principal

1 Bar na Carraige
Fort Lorenzo
Galway City

Dear Principal

I am writing to ask for permission to conduct a research study within your school. The research study will be submitted as part of the requirements for the MA in Digital Media Development for Education qualification with the University of Limerick.

The research will concentrate on the pupils in fourth and fifth class who will be asked to participate in an eTwinning project named ‘Our Local Place’. The pupils will be required to complete a multi intelligence test, pre and post-test sheets, a questionnaire and be involved in group interviews during the study. They will also be observed during the study to gauge the level of communication and collaboration within their groups. It is estimated that the classroom study will run over a ten week period with circa. two hours of classroom time allocated to it each week. I also seek permission to be on the school premises during the course of the study.

I believe that the project and the study will be of benefit to the pupils involved and the whole school in general.

The children’s names will remain confidential and not appear in the final report.

Yours Sincerely

Geraldine Kane
Appendix B
Letter to Parents

1 Bar na Carraige
Fort Lorenzo
Galway City

Dear Parent,

Your child’s class has been asked to take part in a study involving an eTwinning project. The project title is ‘Our Local Place’. The project will focus on different groups gathering information on their local area. They will be using computer applications and tools throughout the project. The class will be divided into 5 groups during the classroom time allocated to the project. Each group will work on a specific category relating to their local place. The class will also be in contact with another school doing the same project.

The study will involve an initial ‘Multi Intelligence’ test to assess each child’s most effective learning style. They will also be asked to complete an ‘Our Local Place’ test at the beginning and end of the study to evaluate learning. A questionnaire and group interviews will also form part of the study. During their classroom group work, they will also be observed to gauge the level of communication and collaboration within their group.

Children’s names will remain confidential and not appear in the final report.

Kind regards

_________________________________

Researcher
Appendix C
‘Multiple Intelligence’ Test

The test was administered to determine the learning style of the students. They were asked to colour in the appropriate face for how they felt each sentence applied to them. When four or more smiling faces in each section are colored in it is a good indication that that student utilises that learning style with ease.

The test is set up as follows:

5 items per intelligence.

1-5 linguistic
6-10 math
11-15 music
16-20 spatial
21-25 kinesthetic
26-30 interpersonal
31-35 intrapersonal

(Docstoc 2011)
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I am good at copying what people say.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I really love books.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I really like to listen to the radio.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>I really like to do word searches or crossword puzzles.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>I really like language arts and social studies in school.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I really like to do experiments.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>I really like math.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>I really like science.</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>I am good at making and figuring out patterns.</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>I often wonder about how things work.</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>I really like music.</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>People tell me that I sing well.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>Score</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>13.</td>
<td>I would be very sad if there was no music in the world.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>14.</td>
<td>I know a lot of songs by heart.</td>
<td>😚😊😊</td>
</tr>
<tr>
<td>15.</td>
<td>I sing songs I've heard on TV to myself as I'm going somewhere.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>16.</td>
<td>I am good at doing puzzles.</td>
<td>😚😊😊</td>
</tr>
<tr>
<td>17.</td>
<td>I am good a reading maps.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>18.</td>
<td>I hardly ever get lost or mixed up where I am going.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>19.</td>
<td>I can pretend I am in the sky looking down on my house and know where everything is.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>20.</td>
<td>I am good at drawing or making things with clay.</td>
<td>😚😊😊</td>
</tr>
<tr>
<td>21.</td>
<td>I am good at sports.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>22.</td>
<td>I really like to dance.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>23.</td>
<td>I like to be outside a lot.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>24.</td>
<td>I am good at learning new sports or dances.</td>
<td>😚😊😊</td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>Rating</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>25.</td>
<td>I can figure out how something works or how to fix something that's broken by myself.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>26.</td>
<td>I feel sad when others are feeling sad.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>27.</td>
<td>I feel happy when I am with others that are feeling happy.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>28.</td>
<td>I like playing games with a group of people better than just one other person.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>29.</td>
<td>I have more than three good friends.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>30.</td>
<td>I really like being in the middle of a crowd.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>31.</td>
<td>I really like to spend time alone to think by myself.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>32.</td>
<td>I think a lot about the future and what I want to do when I grow up.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>33.</td>
<td>I know right away when I am feeling &quot;stressed out&quot; and I spend time alone to feel better.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>34.</td>
<td>I keep a diary or journal and write down my feelings.</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>35.</td>
<td>Most of the time I'd rather stay home than go out somewhere with a lot of people.</td>
<td>😊😊😊</td>
</tr>
</tbody>
</table>
Appendix D
Pre and Post-Test

Name: ___________________________ Age: _______

Our Local Place

Geography

1. Name these long winding ridges which are common around Ahascragh?
   __________________________________________

2. How are they formed?
   __________________________________________
   __________________________________________

3. Name the river that flows through Ahascragh?
   __________________________________________

4. Where does this river rise and where does it flow into?
   __________________________________________
   __________________________________________
History

5. What is the name of this building?
________________________________________
________________________________________

6. Name the family who lived here?
________________________________________________________

7. What is the name of this famous ship?
________________________________________
________________________________________

8. What connection is there between this ship and Ahascragh?
________________________________________________________
________________________________________________________
________________________________________________________
Local Landmark/Important Buildings

9. Name the ruins that are located in the local graveyard?

____________________________________

____________________________________

10. Name the Religious Order who once lived here?

____________________________________

11. What is the name of this building?

____________________________________

____________________________________

12. What was once made in this building?

____________________________________
**Our School**

13. In what year was the original school built?
   _______________________

14. How many Principals have there been in the school?
   ______________________________________________________

15. What was the name of the Minister who opened the new school?
   _______________________
   _______________________
   _______________________

16. Can you name one well known sporting person who went to our school?
   ______________________________________________________
Saint/Famous Local person

17. Name the Saint associated with Ahascragh?

____________________________________________________

18. Can you name something else (apart from the Church) that is named after him?

_____________________________________________________________________________________

19. What is the name of this famous local man?

_____________________________________________________________________________________

20. What is he famous for?

_____________________________________________________________________________________

Thank you for taking the test
Appendix E

Logging on and Exiting TwinSpace

Name: ___________________________  Group: __________________

Login Name: ______________________  Password: __________________

http://new-twinspace.etwinning.net

Log on to the website address above and type in your
Login Name and Password

Click on Our Local Place
This page will open and you will see your name beside ‘Welcome’ in the black box on right hand side.

If it is the first time you have ‘logged on’ you can upload your photo. Click on the black box and ‘Edit Profile’ will appear.

Click on ‘Edit Profile’ and you will see this page open.
Click on ‘Change’ on the left hand side to upload your own photo.

Click ‘Browse’ and then select where you have saved your photo. When you see your photo click on it and then click on ‘Save’.

You can also add text in the description box – e.g. your age and hobbies.
To Exit the TwinSpace click the black box with Welcome (Name)’ on the top right corner. Then click on ‘Sign Out’.

If you have problems write them down here.
Appendix F
Using TwinSpace

Blog
Click on ‘Blog’ (under the Activities section)
and then click ‘Add blog entry’.

Give your Blog entry a Title.
Then type your message into the text box.
Click Publish when you are finished.
How to send emails

To send an email click on ‘Write message’ which can be found under the Mailbox on the bottom right hand side.
1. Write in the ‘Subject’ box what the message is about.
2. Then type your message in the big box under ‘Body’.
3. Tick the small box beside the name of the person who you want to receive the email.
4. Click Send.
To Chat

If you want to chat click the ‘CHAT’ tab.

Others will need to be online when you are to be able to chat.

So you should arrange a time with members of your class when you can all be online together.

In the box named ‘Participants’ you will see who else is online. If there is a name in the box, apart from your own, you can type your message in the small box and press Send. What you typed will then appear in the big box under ‘Welcome’.
To upload word documents and images to TwinSpace

Click on your Group name

A new page will open—for this example we opened the Saint/Famous Local Person group but the name of your group will be on top. You will see ‘File archive’—if you have a word document to upload click the English National School Folder. If you have an image to upload click the English National School folder in the ‘Image gallery’.
Click on the button ‘Add document’.

Click on ‘Browse’ to locate your text document or photo.
You may have saved your document or image on the desktop or on a memory key.

When you see it, click it and click on the ‘Open’ button.

Click on ‘Save’. The file will now be saved in the English National School folder under your group topic.
**Appendix H**

**Observation Sheet**

<table>
<thead>
<tr>
<th>Observation Schedule Group</th>
<th>Minutes</th>
<th>On task</th>
<th>Off task</th>
<th>Interacts collaborates with group member/s</th>
<th>Helps/encourages a group member</th>
<th>Asks for assistance from teacher/researcher</th>
<th>Asks a project related question of teacher/researcher</th>
<th>Appears motivated and enthusiastic</th>
<th>Appears unmotivated and disinterested</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
Appendix I
Questionnaire

Name: __________________________ Age: _____ Group: __________________

1. Did you enjoy working with your group?  Yes ☐ No ☐

2. Why? ___________________________________________________________

3. What did YOU do for your group? ____________________________________

4. Do you think your group worked well together? Yes ☐ No ☐

5. Why? ___________________________________________________________

6. Did everyone in your group do their fair share of the work? Yes ☐ No ☐

7. Did you help other members of your group? Yes ☐ No ☐

8. Did any other members of your group help you? Yes ☐ No ☐

9. Did you enjoy working on the “Our Local Place” project? Yes ☐ No ☐

10. What did you enjoy most about the project? ____________________________

______________________________________________________________
11. What did you enjoy least about the project? ______________________________

_____________________________________________________________________

12. Did you find it easy to log on to the project’s Twinspace? Yes □ No □

13. Did you find the Twinspace easy or hard to use? Easy □ Hard □

14. Do you use a computer at home? Yes □ No □

15. Did you log on to the Twinspace at home? Yes □ No □

16. Did you enjoy using the computer for this project? Yes □ No □

17. Did you learn any new computer skills by doing this project? Yes □ No □

18. Did you enjoy communicating with the class in France? Yes □ No □

19. Why? ____________________________________________________________

20. Did you learn more about your local place? Yes □ No □

21. Would you like to take part in another eTwinning project? Yes □ No □

22. Why? ____________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

2
Checklist

Place a √ in the box if you did the following during the project.

I searched for images and/or text on Google □

I uploaded photos and/or text to Twinspace □

I used email on Twinspace □

I used chat on Twinspace □

I wrote a blog on Twinspace □

I used Vokis □

I created a storyboard with my group □

I recorded my voice □

I created a photostory presentation with my group □
Appendix J
Group Interview Questions

Group Interviews

Did you enjoy working on the project?
Discuss

What did you like most about the project?

What did you like least about the project?

Did you enjoy using the computer for the project?
Discuss

Did you learn more about computers by doing this project?
Discuss

Was the Twinspace easy to use?
Discuss

Did you enjoy working in your group?
Discuss

Did you learn more about your local place by being involved in this project?
Discuss

Did you enjoy communicating with the French students?
Discuss

Would you like to be involved in another eTwinning project?
Discuss

Anything else you would like to add?