Can collaboration around the creation of digital stories improve engagement and literacy in young writers?

Daragh Bell BA IBLGS (DCU), Grad Dip in Education (TCD)

A project submitted to the University of Dublin,
in partial fulfilment of the requirements for the degree
Master of Science in Technology & Learning

2013

Declaration

I declare that the work described in this document is, except where otherwise stated, entirely my own work and had not been submitted as an exercise for a degree at this or any other university.

Signed: _____

Daragh Bell B.A. IBLGS (DCU), Grad dip in Education (TCD)

.

Date: _____

Permission to lend and/or copy

I agree that the Trinity College Library may lend
or copy this dissertation upon request.

Signed: _____

Daragh Bell B.A. IBLGS (DCU), Grad dip in Education (TCD)

Date: _____

Acknowledgements

I would like to thank the students, staff and parents of St. Ultan's N.S. for their assistance and support during this project.

Thank you to my supervisor, Ms. Nina Bresnihan, for her advice, guidance and encouragement.

Finally I would like to thank my classmates, friends and family, who supported me throughout this academic year.

TABLE OF CONTENTS

Figures and Tables

Abstract

The explosion in ICT usage over the last number of years has evidently transformed the way modern society operates. The changes brought about by these advancements in technology have produced new ways to teach and learn. These changes have not just affected the 'conditions for learning' but we must also keep in mind that 'the learners themselves have changed' (Ryberg and Holmfeld, 2008). Researchers have labelled these modern day students, 'New Millenium Learners' or 'Digital Natives'. This project focuses on these individuals and how they engage with the process of digital story creation in the primary school classroom.

A collaborative learning environment embracing a constructivist design was created to integrate technology in a meaningful way (Sadik, 2008) with a view to improving engagement and the standard of literacy produced by the students. Data was collected before and after immersion in the learning experience, with the same group of students to demonstrate the immediate impact of the short term program.

A case study approach was adopted and data compiled and analysed using mixed-methods. Individual tests and assessments, researcher observations, semi-structured interviews, physical artefacts and participant reflections were all compiled and analysed in order to discover if the learning experience designed by the researcher was indeed successful in improving engagement and literacy levels in the participants.

The findings identified from the qualitative and quantitative data suggest that engagement and literacy can be improved using the technology and strategies implemented in the learning experience model however they also suggest that not all individuals benefit in the same way. Technology usage did act as a barrier for a small number of individuals in the study. Group work, engagement, time keeping and scaffolding are some of the main themes to emerge from this project.

1. Introduction

1.1 Background and Context

Learning to write is not only important for a child's literacy development but it has been proved to aid overall learning and fuel academic success. Research has shown that problems with writing in the early years may result in more serious difficulties in the future. This may take the form of low achievement in school resulting in less possibility to progress to third level education and lower scale job offers in the future (Graham and Perrin, 2007). It is essential therefore for young people to develop writing skills from an early age as it is proven that writing is not only essential for developing reading skills due to the interdependence of reading and writing but it also improves the ability to think and generate ideas in young children (Valerie, Foss-Swanson, 2012).

Research has also found that when educators make an effort to encourage writing and provide meaningful opportunities to write, when writing is modelled by them and when they become co-writers with their students, this results in the development of communities of real writers (Lambirth and Goouch ,2006). The process approach, which advocates best practice for the teaching of writing, promotes the planning, composing, editing and publishing stages required to produce a final piece of written work (Westwood, 2007). Vygotsky's zone of proximal development is at play here as the teacher and students engage with each other in the different processes mentioned above in order to obtain feedback and opinion.

Writing puts immense pressure on a young person's brain function for example memory, language and motor function are all required to process information and it is this overload that can sometimes cause problems with the development of writing skills (Abidin, 2011). Graham and Harris (2003) believe that for students who find the process of writing difficult, it is vital they are provided with scaffolded instruction which is both interactive and explicit. This instruction must also include mechanisms for planning, composing and revising in order to improve the standard of writing for these individuals (as cited in Mason et al, 2011). Most researchers agree, there are no simple solutions to these problems but environments can be created through the use of various resources discussed

later in this review, where students can be engaged and ultimately more successful in their writing (Abidin, 2011).

Writing workshops designed to stimulate interest and improve awareness of how writers create good narratives have been widely used over the years by educators. Corden (2003) conducted one such study with a focus on structure and style. The children were exposed to various texts during the writing workshops and as a result of the modelling, demonstrating, direction and help of more knowledgeable others, these once reluctant writers became more confident in their ability, developed better strategies for writing and improved their level of vocabulary.

In 2003 the Centre for Literacy in Primary Education (CLPE) orchestrated a very successful project in Great Britain which they called RaW (Reading and Writing power). Young students were engaged in various forms of literature through different mediums where they had to firstly listen then think and talk. Following this they were required to plan and write. At the end they had to reread and revise their texts. The educators involved devised strategies such as reading to a whole class and introducing the pupils to various forms of text to promote debate and to stimulate thinking and to develop the formation of ideas. As Mooney and Young (2006) attest, 'while responding to text can help improve engagement, it also aids the understanding and appreciation of the subject matter and finally makes children become more sophisticated in their comprehension and response to various forms of literature,' (as cited in Dix and Amoore, 2010).

1.2 Research Question

Can collaboration around the creation of digital stories improve the engagement in and the learning of literacy in young writers?

The above question was the foundation for this case study.

The learnings acquired from the literature helped form the design criteria for this project. A number of sub questions, listed below, were also formed to help answer the research question.

- Is collaboration fundamental to the learning process or would similar results be achieved if the task was individual?
- How does the standard of literacy in the digital form compare to traditional forms of writing?

- Are the children more motivated, enthusiastic and interested in literacy when it incorporates technology?

1.3 Structure of Dissertation

Chapter 1 provides the background and context for the research as well as introducing the research question and sub questions. Chapter 2 examines the elements which ultimately guided the focus of the research. Chapter 3 illustrates how the literature influenced the design of the learning experience. It also provided details regarding the location, participants and how the project was implemented. Chapter 4 examines the research methodology and data collection tools used in the project. Chapter 5 addresses the findings and details how the data was examined and used to answer the questions arising from the study. Chapter 6 concludes the project and provides a summary of the findings and also details any unexpected results that emerged from the findings. In this concluding chapter the limitations of the study are accepted and any future research projects emerging from the study are mentioned.

2. Literature Review

2.1 Introduction

The Literature Review starts by introducing the reader to the concept of "new literacies" and how new technology is influencing the way we write and express ourselves on a daily basis. It then moves on to define and discuss the meaning of digital stories and their usefulness to educators. It also highlights some negative aspects of the technology. Following this the review then moves on to discuss and endeavours to define the term engagement. Moving on from this the review then focuses on collaboration and collaborative learning and examines the importance of these terms in an educational setting. Finally the review concludes with an examination of constructivism and details its importance as it promotes active learning through engagement between students.

2.2 New Literacies

Labbo (2006) refers to the writing of Dickens in the 18th century where the author discussed the problems arising between the transition from agricultural to industrial age. She compares this to the current tension that exists when new forms of technology appear and challenge old practices. Labbo refers to this as the 'pull of the new against the push of the old' and it is evident throughout many first world education systems. Word processors have been present for a very long time in schools however writing today, inside and outside the classroom, is a much more sophisticated product than when word processing technology was originally introduced according to Walsh (2010). When we speak of writing nowadays we no longer just refer to text. It can also be accompanied by graphics, audio, photographs and other images. In a simple example of this new mode, Labbo (1996) noticed that when children were working independently using a word processing program, they frequently used clip art or other computer generated illustrations to support their writing.

These new literacies force educators to change practices and values and some people believe that the art of writing has now changed into a dynamic multimodal process because of the ability of technology to create many various forms of text and literature

(Edwards-Groves, 2011). Researchers have discovered that once teachers begin to change traditional habits and move their teaching towards multimodal texts, students then have the opportunity to begin to create more rich and powerful text for example 'video tours' which allow greater learning to take place.

2.3 Digital Storytelling

According to Pedersen (1995), storytelling is the original form of teaching and furthermore, stories are the oldest form of literature. Rule (2010) supports this argument with reference to librarians. In her opinion, librarians understand what many people have failed to remember over the years. That is that life lessons are found in story and therefore taught through the medium of storytelling. With the advent of modern technology such as computers, editing software and digital cameras, this has resulted in the transformation of this once traditional art form into a powerful multimedia tool which utilises the wealth of cognitive processes that underpin learning (Sadik, 2008).

Digital storytelling has been defined by the Center for Digital Storytelling as ' a short, first person video-narrative created by combining recorded voice, still and moving images, and music or other sounds' (as cited in Wawro, 2012). Rebmann (2012) describes it as 'a fusion of narrative and digital media content' and attests to its simplicity by claiming all that is needed is an idea, the collection of content and the selection of tools required to form the narrative. In Rule's (2010) opinion it represents the 'modern expression of the ancient art of storytelling'.

One of the great advantages of this form of storytelling is that it forces learners to consider the factors and ingredients that go into the creation of a story (Wawro, 2012). In order for a learner to contemplate producing their own digital story they must first deconstruct how a story is made, decide what elements constitute a good story and at the same time they must improve their knowledge of the media they will utilise to create their own digital version. Crane (2008) attests that digital storytelling projects are important for teaching and learning because they provide an engaging environment for learners through multiple modalities, creativity, various forms of literacy and they also appeal to visual, auditory and kinaesthetic learners (as cited in Rebmann, 2012).

According to Czarnecki, digital story telling can be utilised to 'help build the 21st century skills that children will need to succeed in school and eventually in the modern workforce' (2009). Barrett (2006) concluded that digital storytelling 'promotes student engagement, reflection for learning, project based learning and allows technology to be successfully integrated into instruction' (as cited in Sadik , 2008). Research has also shown that by utilising digital storytelling as a resource to support the language curriculum in schools, student's levels of reading, writing, listening and speaking can also be improved (Tsou, 2006). Czarnecki refers to The International Society for Technology in Education (ISTE) which is a body set up to promote and improve the use of technology in classrooms. This organisation has listed six standards that it believes the use of technology in the classroom should promote. These standards include 1) creativity and innovation, 2) communication and collaboration, 3) research and information fluency, 4) critical thinking, problem solving and decision making,5) digital citizenship and finally 6) technology operations and concepts.

Similar to traditional storytelling, digital story telling helps develop comprehension skills and problem solving skills but combines this with the development of technology skills. Therefore digital story telling can be used to engage and have fun with students but the process involved in creating them can also contribute to developing social skills along with multimedia skills, all of which can be useful for the child as they grow older.(Czarnecki, 2009). The design of digital stories has also evolved over the years due to the improvement of Web 2.0 technologies. There are now a huge range of free resources and tools available for creating and sharing productions online (Rebmann, 2010).

While there are many benefits to the use of digital storytelling in the classroom the literature notes that teachers can find it difficult to integrate multimedia applications in their lessons due to inferior training and a lack of belief as to the benefit of technology use to support their instruction (Sadik, 2008). According to Sylvester and Greenidge (2010) there are a number of reasons for the lack of interest that is sometimes evident in teachers to become involved in digital storytelling (as cited in Rule, 2010). These include the time it takes to go from planning to producing a final story. A lack of confidence and awareness of current technology on behalf of educators are also cited as factors for not implementing digital story projects in the classroom. Also access to the relevant

technological resources may be limited for certain children when they are outside of the school system.

2.4 Engagement

‘Engagement of a serious kind is central to any form of teaching and learning that counts as educational’ (Sheppard, 2011). Axelson and Flick (2011) define student engagement as ‘how involved or interested students appear to be in their learning and how connected they are to their classes, institutions and one another’. Some research suggests that engagement maybe intrinsic, such as a person volunteering to do something of value, or extrinsic, which refers to something designed to ‘persuade, preoccupy or attract’ and it maybe categorised into three different types, behavioural, emotional and cognitive engagement (Sheppard, 2011).According to O’Brien and Toms (2008) ‘engagement is a category of user experience characterised by attributes of challenge, positive effect, endurability, aesthetic and sensory appeal, attention, feedback, variety/novelty, interactivity and perceived user control.’

Lim et al. (2006) conducted research on the meaning of engagement and came to the conclusion that all the definitions had the following themes in common. They included ‘mindfulness, intrinsic motivation, cognitive effort and attention’ and furthermore arrived at the belief that different levels of engagement exist from high to low. Sheppard also (2011) puts forward two distinct views on engagement. The substantive or liberal view and the child centred or procedural view. The first type deals with intrinsic engagement where the learner personally initiates the activity. The second is teacher initiated, and involves activity where the student will come to realise the intrinsic value. This procedural view is the way Dewey believed that people are engaged. The teacher is responsible for the conditions of the activity and takes an active role in it where as the pupil has a more passive role. To conclude Sheppard’s ideas, engagement can be linked to liberal intrinsic motivations and at the same time it can be of procedural nature and linked to extrinsic motivation.

In the 1980s Alexander Austin concluded that engagement is ‘essentially the same as involvement’ and Kuh builds on this definition and states that ‘engagement is the extent to which students take part in educationally effective practices,’ as cited in (Axelson and Flick 2011). Axelson and Flick (2011) also make reference to the National Survey of

Student Engagement, conducted in the US, which defines engagement as ‘a matter of behaviour and something that students can be observed doing’.
Through observation of student behaviour, research has discovered positive approaches in the use of technology to improve this ‘involvement’ in students. Rieber (2008) observed that users who were not supported or given assistance by a more knowledgeable other, resulted in poor comprehension of a task and were more concerned with the competitive aspects. Therefore he concluded, for pupils to be properly engaged and to benefit meaningful learning, a teacher should carefully plan prepare and support students before and during the use of educational software in the classroom. Labbo (2006) also cautions that student’s must be properly supervised when using digital stories as the moving illustrations and audio can be both engaging or distracting, but, at the same time she stresses that digital text is less challenging to read and is more engaging for young students due to the interactivity. In the same study, Labbo concluded that digital project work involves the purposeful collection of information followed by the communication of the gathered data, all of which is likely to keep students highly interested and involved during the process.

Exposure to modern technology has the ability to cause students to simply start writing a narrative and furthermore the type of project based learning that digital stories facilitate can engage certain students who come from disadvantaged backgrounds who may find it difficult to link home life and the education system (Rebmann, 2012). Currently, in relation to teaching writing, there seems to have been a shift away from focusing predominantly on spelling and grammar. Instead the emphasis seems to be more concerned with content and structure with educators using various tools to engage and challenge their students such as computer technology, drama and storytelling (Patera, 2008).

Games and play promote learning and physical activity and have played an important role in education throughout history. The competition and collaborative aspects result in a way of knowing the world and are found throughout human culture (Rieber, 2008). Increased motivation, satisfaction and the potential to create positive and challenging learning situations are factors of play (Panoutsopoulous and Sampson, 2012) which are also intrinsic to engagement. Finally, according to O’ Brien and Toms (2008), engagement is

linked to aesthetics, with emphasis on visuals that appeal to our sense of sight and motivate us as well as stimulate interest, curiosity and force users to focus more.

2.5 Collaboration

This modern digital age offers a plethora of possibilities for pupils to learn from and work with other people and the change to a more learner centered curriculum has changed the teacher's job from provider to resource person.(Abidin, 2011).Vygotsky believed that humans learn best through social interaction. He believed that cultural and social factors contribute to cognitive development. Community he argued is needed and is fundamental to the child for the process of "making meaning" (Vygotsky, 1978). Central to his belief was that children are born with the function of attention, sensation perception and memory however these functions are what Vygotsky termed as elementary to begin with. By interacting with the cultural and social area that children grow up in, these elementary functions progress and improve to a higher state of function (McLeod, 2007). In this way children of different cultures and societies grow up and learn different strategies depending on the various factors present in their own environment. Cognitive functions according to Vygotskian theory are therefore influenced by the beliefs, values and tools of the child's culture and in this way every child is a product of their own socio-cultural environment (McLeod, 2007).

The curiosity of the child and active learning are central themes in Vygotsky's theories about how children progress and make sense of their world. This belief was also shared by Piaget however Vygotsky was more interested in the power of social influence in a young person's improvement. Vygotsky also placed strong emphasis on the importance of a "skilful tutor" in a child's development (1978). By means of social communication between tutor and child, important discoveries and developments come about. The tutor's job is to interact with the young person and provide encouragement and guidance where appropriate and this communicative relationship was referred to, by Vygotsky as co-operative or collaborative dialogue (1978). The child takes this advice on board and then processes the information before making his/her own decision on how to proceed.

In the early stages of this relationship, the more knowledgeable other provides more guidance and helps the child where appropriate. However as the child is observed

working more successfully and independently the more knowledgeable other provides less support and allows the young person to work on their own. This social relationship and resulting dialogue between more knowledgeable other and learner produces and improves cognitive development in Vygotsky's opinion. This type of learning works because it develops cognitive schemas and allows more sophisticated ideas to be formed and implemented by the learner (Razon et al, 2012).

Two of the central ideas in Vygotskian theory include the "More Knowledgeable Other" and the "Zone of Proximal Development". The more knowledgeable other is the person or thing that has more knowledge about a particular topic than the learner. In some cases this can be the teacher, a principal, a boss or another type of leader. However sometimes learners may find that more knowledgeable others exist in their own peer groups or even in children younger than they are. The important fact to keep in mind is that more knowledgeable others do not necessarily have to be adults. Nowadays technology has made it possible to remove the human aspect from more knowledgeable others and computer programs exist which can take their place in order to guide and help people with less knowledge to complete a task or improve their learning.

The Zone of Proximal Development is another important area of Vygotskian theory. This Zone refers to the gap in the child's ability at present where they need to be scaffolded in order to successfully master or complete a particular task. If the child were to try a task on their own, inside the zone of proximal development, they would not have the necessary skills to complete the task however with the help of a more knowledgeable other, offering guidance and support, the young person would be able to achieve success. Vygotsky believed that through peer interaction, within the zone of proximal development, the greatest learning and development occurs (1978). A social cohesion may exist in this collaborative environment that causes learners to want to help each other (Razon et all, 2012). For this reason Vygotsky was of the opinion that weaker children could learn and develop skills from their more knowledgeable and able peers through collaborative activities (1978).

2.6 Collaborative Learning

This form of learning occurs when there is a shared focus and a common goal. When individuals get together with the intention of learning more and engaging in dialogue around this focus and goal, collaborative learning is said to take place (Razon, 2012). It comprises of active engagement, complex thinking and supports self regulation in learners. In order for this type of learning to take place, the individuals must engage with the subject or task within a zone of proximal development with the more knowledgeable one scaffolding the learning. According to Razon (2012) the following three elements, 1.) positive mutual dependence, 2.) individual accountability and 3.) social skills are the most important aspects of collaborative learning.

The first element is concerned with the idea that individuals rely on each other to complete a task. Group members must work together to support, encourage and facilitate each other in order to achieve a common objective (Chang et al., 2010). The second characteristic highlights the fact that each participant plays a vital role and therefore shares the blame or accepts responsibility for the final product. The element of accountability also highlights certain problems associated with group work such as the dominance that may prevail with certain individuals and also the fact that certain group members may not contribute equally to the group (Chang et al., 2010). Children may be allowed to assess each others work here but the facilitator must model the process and ensure students do not offend each other (Westwood, 2007). Also according to Ormrod (2008) students may act in an uncooperative manner if clear guidelines are not given in advance (as cited in Lei et al, 2010).The last characteristic deals with the social aspect involved in the learning and how these skills may be developed by participation in a group. The better the team work skills such as problem solving, guiding, advising, modelling and communicating, the more successful the outcome of the learning will be (Chang et al., 2010).

Lei et al (2010) divided group composition into the following factors; gender, member familiarity, ability level, ethnicity, motivational level and motivational source but also stressed that other variables such as age, group work experience and educational background can all have an effect and alter the level of interaction between people in groups. Kutnick et al (2002) divides groups in primary school into 5 themes depending on size, composition, task, adult interaction and teacher interaction. In relation to size, individual and dyadic groups were seen as positive compared to triadic groupings. The dyadic grouping again shares common themes with Vygotsky's theory as it draws on the stronger child to help the other. Groupings of 4-8 were deemed more suited to cooperative tasks such as drama. Ormrod (2008) agreed that smaller groups are better than larger and that groups need to be closely monitored and guidance always needs to be given so that group members understand their role and stay on task to promote cooperation and result in positive learning experiences.

With regard to composition in larger groupings, teachers may create homogeneous or heterogeneous groupings depending on their preference as there is little research to support ability based groupings (Kutnick, 2002). Webb (1991) states that groupings which include equal numbers of boys and girls may be better but the mix may also promote or inhibit interaction. Mostmans et al, (2012) states that a safe learning environment, where pupils are familiar with each other, is necessary for collaboration to be successful. Finally Kutnick's research also states that different tasks suit different groupings and teachers and adults can have an influence over the success of a group activity.

Unfortunately in many educational systems there is still an emphasis on competitive rather than co-operative learning (Abidin, 2011). Too many tasks in school are still based on individual assessment and not enough focus is placed on the importance of collaboration as a skill. As we know the modern workplace requires individuals to be able to work successfully in teams and if we are to produce a workforce with the necessary skills needed to perform successfully in a chosen profession, we need to encourage a collaborative mindset. Learners must be socialised in a way which allows them to listen to and accept the points of view of others. Through peer collaboration students can learn more about their differences and their interdependence and can learn to work with each

other and solve problems together by drawing on the collective capital and creativity of their peers (Abidin, 2011).

2.7 Constructivism

The literature suggests that in order to integrate technology in a meaningful way in the classroom, the learning must be lead by the constructivist design (Sadik, 2008).The principle idea of collaborative learning is founded in constructivist theory. The most important elements of constructivist learning include knowledge use and creation, reflection and critical thinking (Chang et al., 2011). In the constructivist classroom, students primarily work in groups. The teacher's role is interactive as is the learners. Assessment is by means of observation, points of view and the process is as important as the product. Dialogue between students themselves and teachers is valued as are the student's interests and questions. As Sadik attests, constructivists see learners as constructive beings and believe that knowledge is created as opposed to being transferred and received passively (2008).

Peer problem solving along with the help of other more knowledgeable others when required, forms the basis of this assisted discovery (Vygotsky, 1978).
In Vygotskian Social constructivism the focus is on the importance of how culture and society influences the development of the child. Cognitive strategies that children introduce to their classrooms include questioning, summarizing, predicting and analysing and because the students are allowed to actively engage with each other, this knowledge is shared and the pupils learn from each other. Therefore the greater the social and cultural difference in a classroom, the more examples of cognitive strategies that will be used and shared as each student's way of knowing and understanding, influences what is known and understood (Sadik, 2008).

2.8 Conclusion

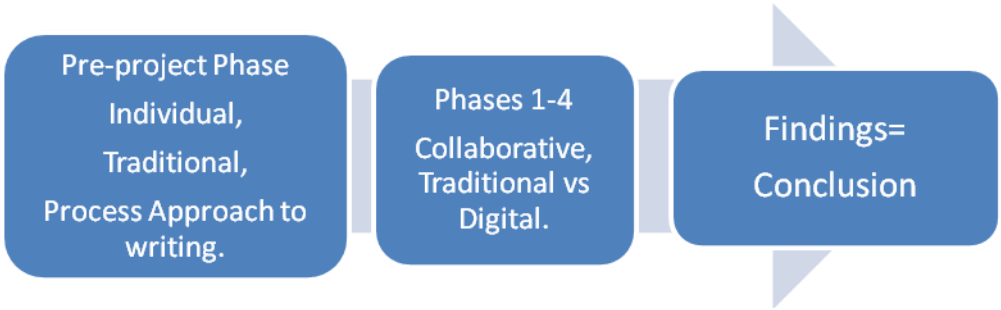
This chapter has presented a review of the available literature into the new literacies in use in educational settings at present. From this literature, collaborative and constructivist theory has emerged as the best way to structure learning environments which incorporate

digital technology and lead to engaging and meaningful outcomes in the classroom. The design implications resulting from this literature are explored in the following chapter.

3. Design

3.1 Introduction

The purpose of this chapter is to detail the learning experience created in order to answer the research question. The literature review in chapter 2 informed the design of the educational environment required for this study. Emerging from the literature is the assumption that collaboration involved in the creation of digital stories can lead to improvements in engagement and learning in young writers.



The pre-project phase involved the participants as they worked individually over a number of weeks, on traditional written tasks without the use of technology. The learning experience phase introduced the participants to the idea of working in pairs and groups,firstly creating a traditional handwritten book together, then using technology to create a similar digital story. During digital story production, the participants also had the opportunity to provide feedback to their classmates as the work in progress was displayed for all to watch, on the whiteboard each week. This chapter descibes in detail, the various elements of the learning experience employed.

3.2 Alessi and Trollip

The design of this learning experience has been informed by Alessi and Trollip's (2001) Four Phases of instruction.

- Presenting Information: The participants were exposed to diverse literature such as fairy tales and comics in various print and digital forms so that they would learn about the structure and content of these stories and prior knowledge was also elicited.
- Guiding the learner: The participants then engaged in the creation of their own stories and comics using the knowledge they had acquired earlier in the

workshops. Instruction and advice was given by the teacher and helpers. After a period of practice and familiarisation with the structure of writing stories, the participants were then introduced to the technology that they would use to create their digital stories. This was done through a mixture of tutorials and modelling by the instructor. Participants were also given the opportunity to engage in familiarisation exercises with the technology over the course of the project.

- Practicing: The learners became more independent at this stage and were able to work more independently due to increased confidence and familiarity with the technology however the instructor was always present to provide advice when needed.
- Assessing learning: During the drafting and editing phases, draft stories were assessed by peers and the teacher. Once corrections were made, final completed digital stories were published on the school shared drive for others to view if the participants wished.

3.3 ARCS Motivation Model

Keller's ARCS motivation model was also a factor in the design of this project. It focuses on promoting and sustaining learner motivation towards learning and comprises a four stage process.

- Attention: The technology platform chosen for the participants allowed multimedia activity and was designed to capture the attention of the participants as evidence in the literature suggests. Drama, storytelling and visual art activities were also used to sustain the attention.
- Relevance: The literature presented in the learning experience was designed for children and therefore was age appropriate and appealing to the users. Following immersion in this literature, the learning experience allowed users to decide their own themes and topics to write about. Technology skills and social skills were also developed.
- Confidence: The platform presented was age appropriate and not overly technical in nature. Therefore the participants did not take too long to familiarise themselves with the functions of the application and were given numerous opportunities to become confident in its use. Adults and peers involved in the

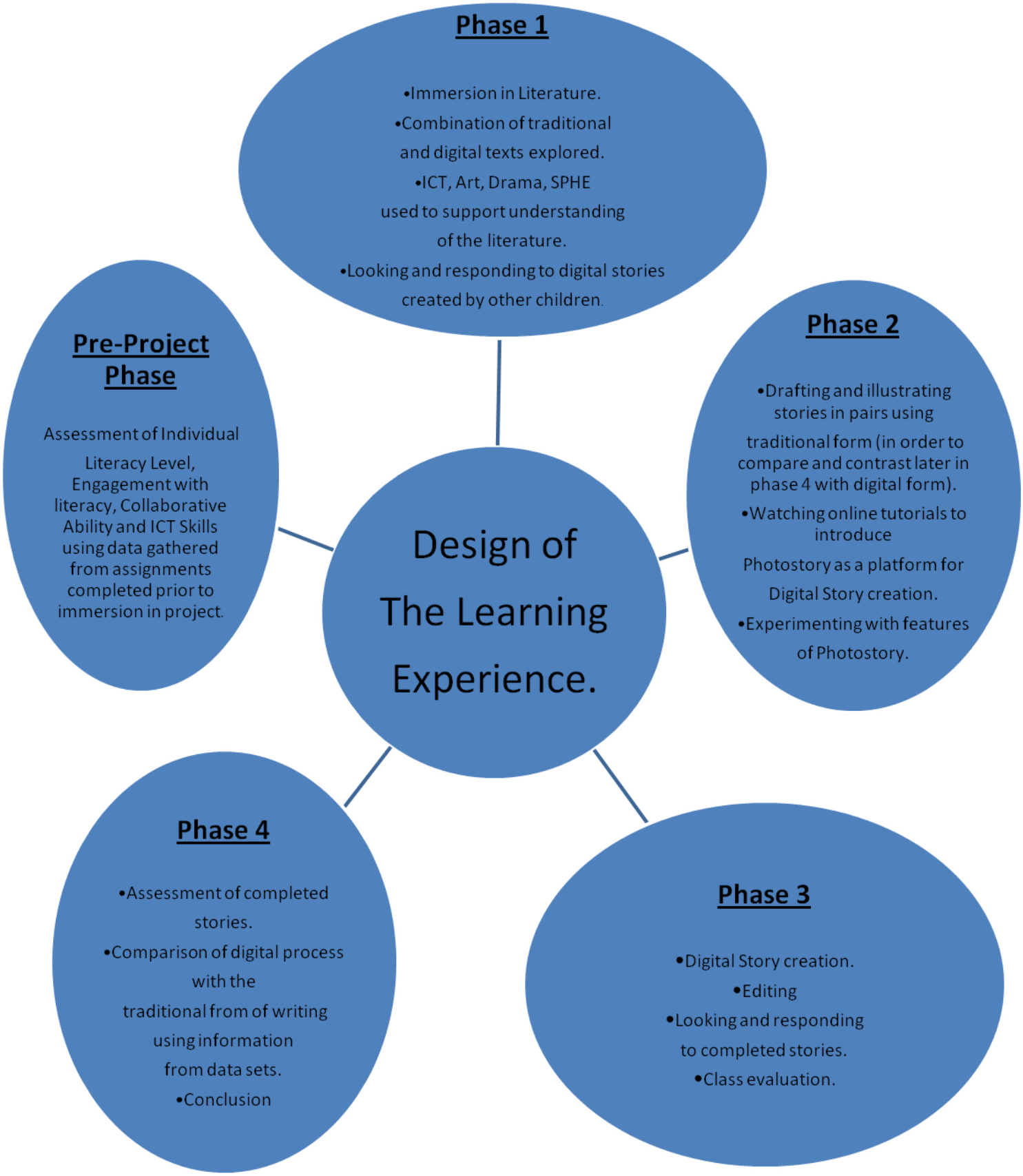
experience were encouraged to use praise during the process to improve confidence of others (Good and Brophy, 2003)

- Satisfaction: It was envisaged that the participants would be satisfied with their final creations and hopefully enjoyed publishing their stories for others to watch. The ability to publish work through networked writing environments allowed for co-operation and sharing. This in turn increased the potential of collaborative writing in the improvement of literacy skills. (Clifford and Dunsmuir, 2003).

3.4 Literacy Workshops

A fundamental aspect emerging from the literature was the importance of creating an environment where students would be engaged and successful in their writing (Abidin, 2011). The first step therefore was to immerse the students in various forms of literature that would stimulate their interest and also focus attention on the structure required to create a story. This included a focus on aspects such as beginning, middle, end, conflict, resolution, character development and detail (Corden 2003). Comics and fairy tales were used as primary resources and over a 4 week period the participants looked and responded to various types of these resources while the researcher facilitated the sessions.During these workshops participants worked in pairs and larger groups depending on the task required. Other areas of the primary curriculum were integrated into these workshops such as visual art, drama and SPHE. Listening, thinking, talking, planning, writing, reading, rereading and revising were elements which were developed over the course of the literacy sessions to immerse the students in the literature and improve competency in their comprehension and response to the text (Dix and Amoore, 2010) It has been shown (Barrs and Cork, 2001), that young learners are more likely to reproduce the style and rhythm of a text in their own writing if they have been immersed in literature through drama, debate and reading aloud in the classroom (as cited in Corden, 2003).

Subject integrated	Purpose
Visual Art	To reinforce learning and allow participants to illustrate, experiment and draft their own comic strips, story boards and narratives.
Drama	To facilitate sharing of ideas, reinforce learning, form part of teacher's assessment and help with group work skills.
SPHE	To help children discuss the advantages and disadvantages of working with others. To problem solve and discuss ways to compromise.


Phase 1
•Immersion in Literature.
•Combination of traditional and digital texts explored.
•ICT, Art, Drama, SPHE used to support understanding of the literature.
•Looking and responding to digital stories created by other children.
Pre-Project Phase
Assessment of Individual Literacy Level, Engagement with literacy, Collaborative Ability and ICT Skills using data gathered from assignments completed prior to immersion in project.
Design of The Learning Experience.
Phase 2
•Drafting and illustrating stories in pairs using traditional form (in order to compare and contrast later in phase 4 with digital form).
•Watching online tutorials to introduce Photostory as a platform for Digital Story creation.
•Experimenting with features of Photostory.
Phase 4
•Assessment of completed stories.
•Comparison of digital process with the traditional from of writing using information from data sets.
•Conclusion
Phase 3
•Digital Story creation.
•Editing
•Looking and responding to completed stories.
•Class evaluation.

3.5 Collaboration

The teachings of Vygotsky influenced the design of the learning environment. The whole experience had to be social so that deeper learning would develop between participants. In the workshops mentioned above, active learning was encouraged through role play, drama, visual art and the participants were encouraged to look and respond and engage each other in dialogue. The tutor, in this case the researcher, was also present to offer guidance and encouragement when needed.

In each grouping or pairing it was endeavoured to place a more knowledgeable other where possible so that weaker learners could be scaffolded by stronger participants. Each task completed by the participants in the workshop was pitched within the zone of proximal development. This was possible due to the researcher's prior knowledge of the participants and also due to the creation of KWL charts in advance of some of the sessions in order to ascertain what the participants already knew, what they wanted to know and afterwards, what they have learned.

3.6 Collaborative Learning

The literature informed the formation of the various groups that were part of the learning experience. Heterogeneous groupings which comprised of individuals of various abilities and who were familiar with each other were created by the researcher (Kutnick, 2002). Dyadic groupings, based on Vygotsky's theory, were created in workshop sessions which required smaller groupings. These tasks included creation of a comic strip, or a story board or a narrative. Smaller groupings were deemed more preferable to this type of work as the more people involved, the greater the chance of exclusion or conflict arising (Ormrod, 2008). In the workshop drama sessions, larger groups were implemented as it allowed greater interaction and sharing of ideas (Webb 1991). The collective capital and creativity of peers in the groupings was used to generate ideas and problem solve. SPHE lessons involving circle time sessions and discussing the nature of group work were implemented throughout the workshops as a means of monitoring and guiding the participants and ensuring everybody co-operated and stayed on task (Ormrod, 2008).

3.7 Constructivism

The process involved in this learning experience involved students primarily working in groups. The researcher was as active as the learners, involved in creating knowledge rather than passively transferring it (Sadik, 2008). The participants were all from varying economic, cultural and religious backgrounds and these differences helped to improve ways of knowing and understanding in the groups.

3.8 Engagement

In order to design an experience that would result in increased engagement it was vital to research the definition of this word and look at the ways engagement could be measured. The majority of research concludes that engagement does not require intrinsic motivation in fact it can also be extrinsic which follows the procedural view and that of Dewey which requires a teacher or more knowledgeable other to guide the activity and show the more passive user the value of the activity. Also emerging from the literature and considered in the design was the view that when people are engaged they do not have to be focused on just one single activity but they are challenged, interactive, interested, paying attention and enjoying the process (O'Brien and Toms, 2008). Therefore a project based learning experience was designed to include these elements by challenging the users to study and collect information, interact with each other, share ideas and finally communicate their learning in the form of a digital story.

3.9 Implementation

In order to implement this digital story creation project, eight weeks were required for the whole process from beginning to end. The location of the study was a mixed primary school in south west Dublin. This school was designated disadvantaged and it was selected as the researcher works as a teacher on the site. Ethics approval (Appendix H) was received in January from Trinity College and then followed permission from Ena Morley, the board of management and parents in St Ultan's N.S. Participants from the researcher's class were given the opportunity to take part in the study. This class consisted of a mixture of girls and boys between the ages of 8 and 9. The participants consisted of 22 children of varying academic ability. As the researcher was the teacher of

the class, prior knowledge of literacy level of each individual was known in advance due to access to each participant's school record and prior assessment of progress in literacy completed during the year of testing.

3.10 The learning environment

The writing workshops formed part of the daily literacy lessons over the course of this project. These workshops were designed to act as a foundation in literacy which involved planning, composing, editing, and publishing being demonstrated to the child so that they would come to understand the process in action (Westwood, 2007) and then to develop skills needed to work collaboratively using technology to develop a final piece of writing or story. The process behind storyboards and the creation of comics was also studied and debated in detail in order to help participants understand how text maybe transformed into other forms such as visual imagery or sound.

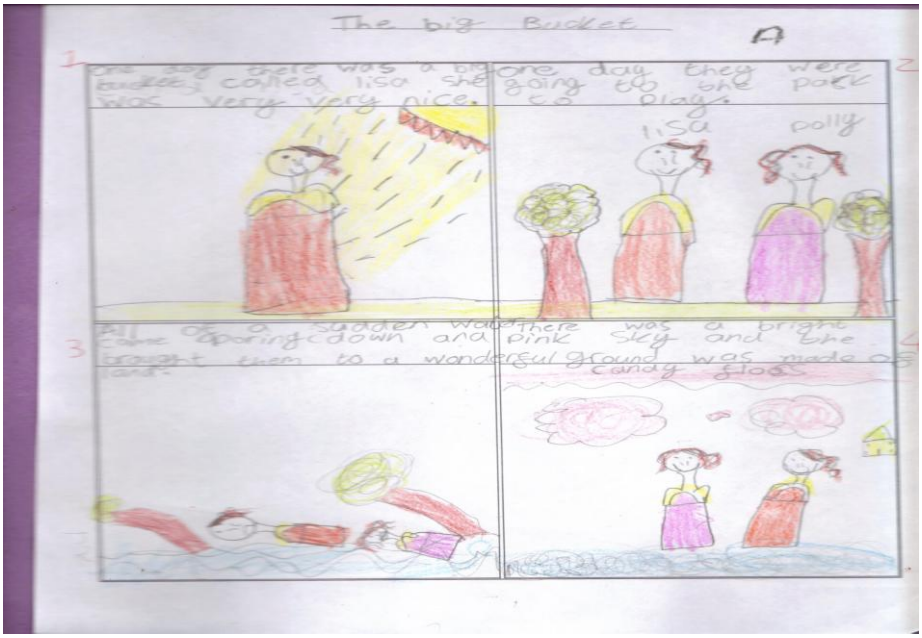


Image 1. Draft Comic Strip, Example A

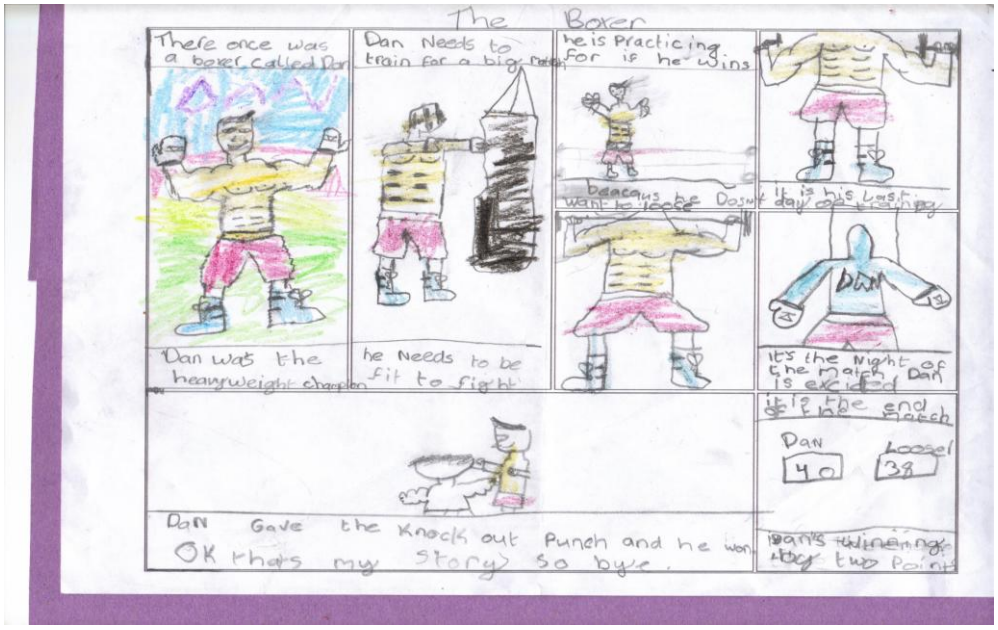


Image 2. Draft Comic Strip, Example B

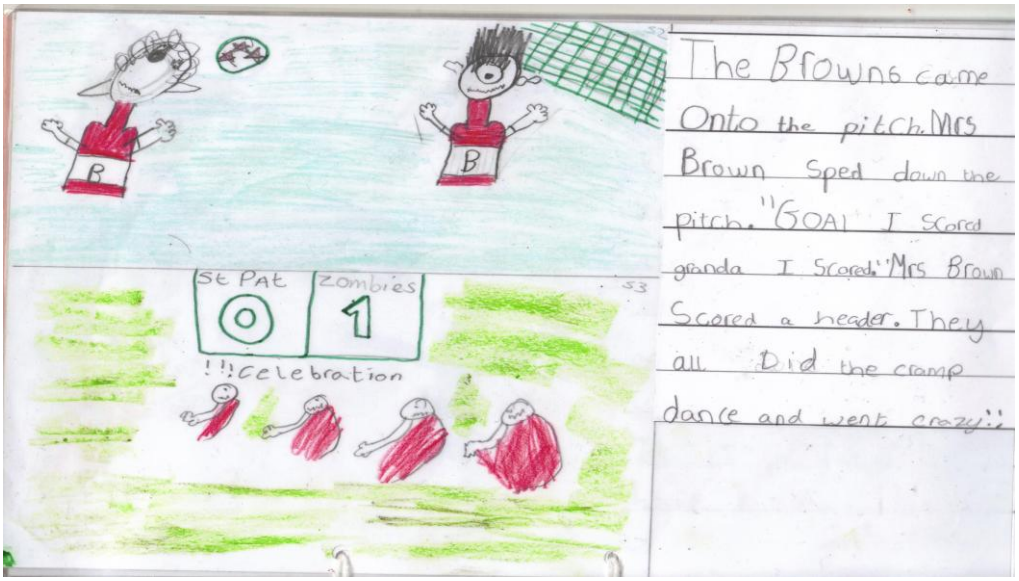


Image 3.Illustrating Scene, Example A

Image 4. Illustrating Scene, Example B

When the time came for the dyads to use the experience gained from the workshops and decide on the story they would create and develop for eventual publication, each group had to agree on the number of scenes they would illustrate. Following this, the group had to digitally scan each scene so that the scenes could be imported to Photo Story in the same way a digital image would be. Photo Story 3 was selected as the platform to showcase the final stories for numerous reasons such as child friendliness, ease of use, low cost and good design features.

Once the children developed a solid understanding in the creation of narratives they then had to be exposed to the technology they would eventually use to showcase their creations. This was achieved by showing the children examples of what other classes had created in the past and by watching some online tutorials. The aim of the tutorials was to provide a visual and auditory focus (Mayer, 2001) which would introduce the participants to the technology and then guide them through the various uses of it.

3.11 The Platform

A pilot project in an afterschool club allowed the researcher to look at the best ways in which the learning experience could be implemented and also experiment with similar technology applications such as Go animate and Xtranormal. These sessions allowed ideas to be refined and showed what difficulties may arise during the experience.

As previously stated, Microsoft Photo Story 3 was selected as the vehicle to drive the technology aspect of the learning environment. This application allows users the ability to create slideshows with their own images and add voice narration and relevant music to each scene. In Photo Story 3 a user can upload images which may take the form of photos or artwork and then arrange these in order to illustrate a story. The user can then add text to each image, make changes to the background, make use of the modality and redundancy principle by removing text and adding a voice over instead, or can combine the two and finally music can be added to each sequence.

This music maybe imported by the user, from a digital library or custom soundtracks maybe created. A wide variety of music genres are included in the application along with the ability to make choices with regard to tempo and instruments. Other features include the option to choose different transition effects such as page curls and flips. Visual effects such as watercolour, charcoal, and sepia, black and white and so on are features that participants can use to add detail to their images. Completed video slideshows may be saved in different formats such as wma, DVD, vcd.

Figure1. Opening screen of Photo Story3

In the case of this project each dyad had to decide on the number of scenes they would incorporate into the slideshow in advance of using the application. Following this, these scenes had to be illustrated by hand on paper and then digitally scanned and saved on a PC.

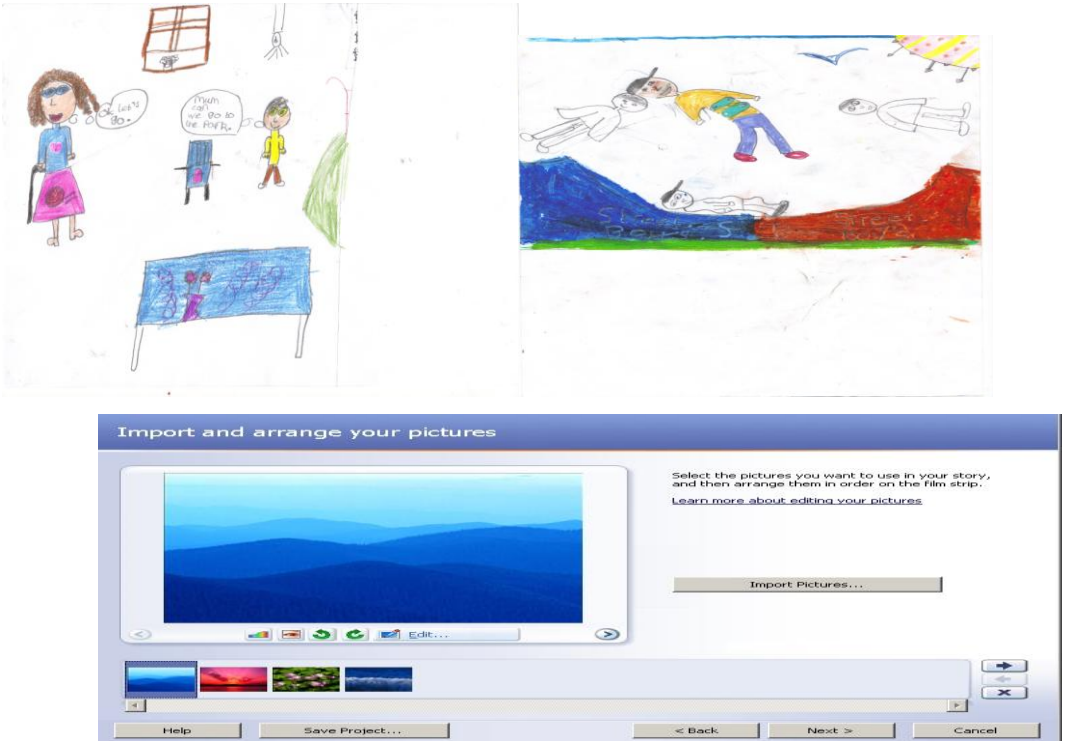


Figure 2. Screenshot showing page for importing images.

Once the images were saved to a PC they were then easily imported into the Photo story application by the participants through the import pictures function as can be seen in ***Figure 2.*** When this was completed, participants were able to manipulate the sequence of the slide show by changing the order of the imported images at the bottom of the page. By then clicking on the next key at the bottom of the page, users were able to experiment with adding text to the images. In ***Figure 3*** below you can see how text added in the text box on the right of the screen shot is duplicated on the imported image on the left. This text can then be changed so that its location, size, style and shape can all be altered depending on participant preference.

Figure 3. Adding text to each picture

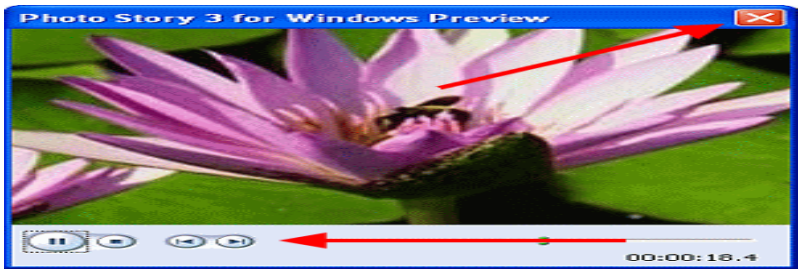


Figure 4. Shows the preview page where participants can view the progress of their story.

With every addition of text, music or narration to each slide, the user may view a preview of what the updated scene will look like if it is saved in its present form as can be seen in ***Figure 4***. The option to include different music to represent each individual scene is also a powerful feature of this application which gives a more dramatic tone to the slides.

Figure 5. This section highlights the option to add music to a story.

3.12 Conclusion

The aim of this chapter was to detail the design implications arising from the literature review for the creation of the learning experience used in this project. The importance of collaboration, collaborative learning, and engagement around technology were discussed and how they were important considerations in the design and implementation of the application used and the whole learning experience created.

The following chapter details the research study itself with emphasis on the research questions and the methods employed in order to decipher the findings.

4. Methodology

4.1 Introduction

The intention of this study was to examine if collaboration around the creation of digital stories improves engagement and standards of literacy in young learners. A learning environment was created, designed with technology in mind, to engage, encourage collaboration and support writing for this purpose. This chapter introduces the research objectives derived from the literature review and also examines the techniques used by the researcher to implement the research method.

The research questions that this study sought to answer were:

Primary Research Question:

Can collaboration around the creation of digital stories improve the engagement in and the learning of literacy in young writers?

Secondary Research Questions:

- Is collaboration fundamental to the learning process or would similar results be achieved if the task was individual?
- How does the standard of literacy in the digital form compare to traditional forms of writing?
- Are the children more motivated, enthusiastic and interested in literacy when it incorporates technology?

4.2 Research Methodology

For this project, a case study approach incorporating quantitative as well as qualitative research methods was chosen as the most suitable strategy for a number of reasons. According to Cohen (2003), a case study can be defined as outward looking because it seeks to explain, '*the nature of phenomena*' in a wider sense however it does this by focusing on one case in detail. Robson (2007), states that a case study allows for the collection of data using two or more different methods. Yin (2003) believes that a good quality case study also makes use of multiple sources of evidence and can be used more effectively when trying to gather data from younger participants. In addition, when using this form of research, the boundaries such as time involved and context are flexible,

which again is more useful when dealing with children. Furthermore, this approach also allows for a more in-depth analysis of the case (Stake, 1995).

Due to the flexibility of a case study, the researcher must be proactive and seek contrary evidence to the preliminary findings in order for the research to be judged as valid (Robson, 2007).Certain researchers may criticise this approach and question the reliability of the data, however those who prefer more flexible designs argue they are dealing with, '*complex and messy real life situations, where highly standardised data collection methods are neither appropriate nor feasible*,' (Robson, 2007).

To answer the criticisms around the use of qualitative data, reliability can be increased by collecting data through different methods, from different informants and from different types of informant. This is known as triangulation and involves corroborating evidence from different individuals (Creswell, 2012). By examining multiple sources of data and employing member checking where one or more participants in the study are questioned about the accuracy of the account (Creswell, 2012), this helps to ensure the validity (Yin, 2003). When the context in which observations are made, is also included, more reassurance is provided (Robson, 2007). Yin (2003) also states that the requirement for a case study emerges from a request to understand complex social phenomena such as the daily environment in a primary classroom during active and collaborative learning sessions.

4.3 Ethical Approval

Ethical approval was sought and granted from Trinity College(Appendix H) to carry out this case study. Permission was also sought from the Principal of the school, the Board of Management, the parents of the participants and the children themselves. Participation in the project was voluntary and participants were given the opportunity to withdraw from the study at any time. All data was anonymised and any requests from the individuals in the study to remove data from the analysis were respected.

4.4 Bias

The researcher is the teacher of the participants in this study and has prior knowledge of the abilities of each of the individuals sampled. The questions posed in this study were

formulated by the researcher and reflect the researcher's bias that collaboration around technology is beneficial to developing literacy levels in children. '*Qualitative researchers do not typically use the word bias in research*', instead they say research is interpretative and that the researcher should be self-reflective about their role in the research (Creswell, 2012). Member checking and triangulation will be used to validate the findings in the next chapter.

4.5 Pilot Project

In advance of this study, a pilot project was implemented using different students from an afterschool group from the same school.

4.6 Data Collection

As recommended by Robson (2007), an exploratory approach was utilised in this case study. This approach means conducting a study where you don't have strong prior expectations, but early data collection will begin to provide ideas about the likely findings. The tasks were completed and data collected over a number of regular school days, within a real life context (Yin, 2003). Due to the multiple data sources employed, data sets were assessed for connections or contradictions.

Mixed methods were used in order to merge qualitative and quantitative data to provide a comprehensive analysis of the problem (Creswell, 2012). An embedded strategy was employed with qualitative data being supported by quantitative data. Morse (1991) concluded that, 'a primary qualitative design could incorporate some quantitative data to improve the description of the sample' (as cited in Creswell 2012). Also the concurrent embedded model may be used when a researcher decides to use various ways to study different groups or levels. Based on prior assessment information and data emerging from pre-testing in areas of Literacy Level, Engagement, Collaborative and IT Skills, half of the participants for this study were placed in the "More Knowledgeable Other" category while the remaining children were categorised as "Reluctant Writers". Listed below are the forms of data collection utilised in this research study.

Research Method	Stage	Reason
1. Competency pre- test, archived assessment results vs. same competency parameters measured during the learning experience. (Individual)	Prior to commencement of study and during the learning experience	To determine individual literacy skills, engagement, collaborative skills and IT skills before and during learning experience.
2. Researcher observation (Individual and collective)	During the learning experience	To assess level of engagement with application, collaboration, standard of literacy.
3. Interviews (Collective)	During and post study	To understand more about the learning experience from the participant's point of view and gather data that would otherwise not be collected using other means.
4. Analysis of Completed Digital Stories	Post study	To assess use of application and standard of literacy compared to traditional form (completed during study).
5. Student reflections (Individual)	Post study	To understand more about the learning experience from the individual's point of view and gather data that would otherwise not be collected using other means.

Pre-project competency test vs. learning experience

Firstly, archival records were gathered from each participant's individual assessment folder .These are a selection of all written work completed by each individual throughout the year in class and used as a progress record. Archival documents can be

used with other documents when producing a case study and can be precise and usually quantitative (Yin, 2012). Added to this primary quantitative data source, pre-experimental one-group pre-test-post-test research design was used to gather more quantitative evidence (Creswell, 2012).These competency pre-tests in the form of written assignments on selected literature topics were completed by each individual and a rubric (Appendix C) was created specifically and used to gather results. Again these pre -tests provided insights into the participant's strengths and weaknesses with regard to literacy skills, collaboration in literacy tasks, engagement in literacy lessons and finally knowledge and ability using computer technology.

These tests were completed in advance of the study. The information from the pre-tests along with the archived documentation, formed the basis of the evidence gathered before commencement of the study. Following this, the same competency parameters from the rubric were again used to measure results after intervention with the study itself, to see what difference, if any, participation in the learning experience had on the participants. All details regarding participants were anonymised before the data was analysed.

Observation

The role of the researcher changed between participant and non participant observer throughout this task leading to subjective and objective involvement (Creswell, 2008). Although Yin (2012) states that participant observation carries drawbacks such as not having enough time to take notes or raise questions as a non participant observer would. Nevertheless, the first-hand open-ended information was a vital source of data as participants may not accurately recall experiences at some time in the future so it was necessary to record this information as accurately as possible and as it happened.

An observational protocol (Appendix B) was designed to keep track of any important events or comments made during the task. These were recorded in the researcher's observational journal. Attention was paid to how the individuals interacted with each other, how focused they were on the task, what kind of quality literacy emerged, how the participants interacted with the application and the hardware itself. Data relating to individuals was anonymised before analysis. Finally, Yin (2012) states that

observation is vital where new technology is being used as it allows for understanding of how it is used and any problems can be highlighted.

Semi-structured interview

Individuals were interviewed briefly during the learning experience and more in depth focus group interviews consisting of 5-6 participants at a time were also initiated following conclusion of the study in order to record details and information that the observation process may not have noted(Payne, Burton, Addington-Hall, & Jones, 2010). Open ended questions were posed and two way communication was initiated between researcher and participants allowing subsequent questions to be modified depending on the answer provided.

It was important to allow all participants the opportunity to speak as certain individuals may try to dominate the conversation (Chang et al., 2010). On the other hand, Lewis (1992) believes that interviewing children in groups is better than individual interviewing as it allows thinking time and better responses emerge as participants feel more comfortable in this situation. These focus group interviews were audio recorded in areas free from distraction and the information from them was combined with the observational protocol to generate rich data for analysis (Creswell, 2008).

Completed Digital Stories

The completed digital stories formed part of the case study evidence as they represented the physical artifacts. According to Yin (2012) the artifacts can be an important component in the overall case as they allow the researcher to develop a broader perspective of the work. The stories were compared to the traditional illustrated book forms that the children had already produced in groups, prior to working with the application. It was not a requirement to recreate an exact digital version of their texts or the illustrations, the choice was left to the groups.

Once completed, these stories were analysed by the researcher and other teaching staff using a rubric (Appendix D) to ensure validity (Creswell, 2008). Elements that were analysed included quality of writing such as beginning, middle, end, conflict, knowledge of functions of the application such as text placement, size, special effects,

transitions, fades, addition of suitable music to represent a scene and also grammar such as full stops, capital letters and speech marks.

Reflections

According to Creswell (2012), in order to create reader interest and capture useful information, data collection types should go beyond typical observations and interviews. In a case study, documentation is useful for corroborating and augmenting evidence from other sources (Yin, 2012) The idea of a written, individual reflection after the event was chosen therefore to allow the children to formulate their thoughts on the experience and also gain extra insights which may have been missed during observation or interviewing. This was useful as it gave a voice to other children who may not, for whatever reason, have fully articulated themselves in a group situation (Chang et al., 2010). Coding was used to bring meaning to the information in the reflections and the data was then anonymised.

4.7 Conclusion

This chapter has discussed the methodology used to gather data for analysis in this case study. All data collected, once analysed, is discussed in detail in the next chapter with certain data illustrated visually using charts and graphs. The following chapter presents a rich analysis of all data collected and also a discussion of the findings uncovered.

5. Findings

5.1 Introduction

As previously noted, a case study was selected as the suitable form of research for this project. An analysis of the data collected will provide answers to the primary research question; Can collaboration around the creation of digital stories improve engagement and literacy in young writers? This chapter provides the analysis needed and presents the findings to answer the research question.

5.2 Data Organisation

Twenty two students from St. Ultans took part in this project. For the benefit of the reader and to better illustrate the findings, the participants have been divided into two groups, "More Knowledgeable Others" and "Reluctant Writers." Microsoft excel was used to illustrate the quantitative data while qualitative data was cleaned and then coded to help identify recurring themes that would lead to answering the research question.

5.3 **Pre-test results versus learning experience results**

Pre-test, every participant was assigned a category from either, **Weak, Satisfactory, Good** or **Excellent** in relation to 1.Literacy Level, 2.Engagement, 3.Collaboration, 4.IT Skills. Under these four areas there existed a number of sub topics. For example the theme of Literacy Level consisted of sentence structure, grammar, spelling, willingness to write, willingness to edit and re-draft and time keeping. The results emerging from these tests and performance observed during the learning experience are discussed below for both groupings.

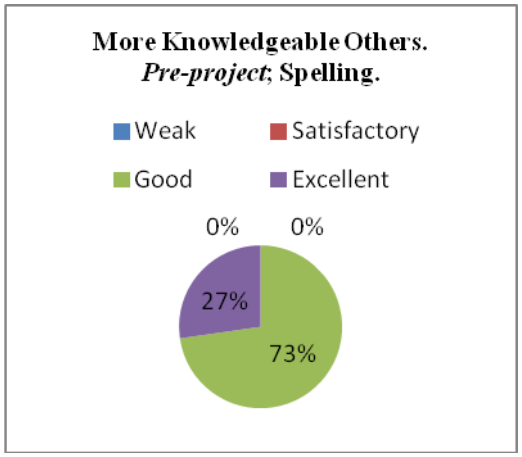
More Knowledgeable others

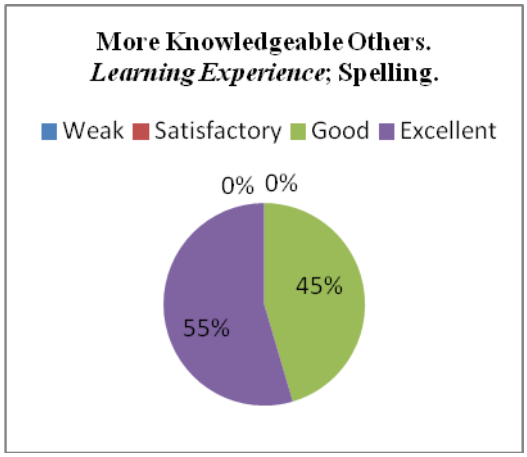
1. Literacy Level

This group were judged to generally have the same sentence structure, grammar, willingness to edit and re-draft in both pre-project (individual traditional process approach writing) phase and the collaborative learning experience environment

created for this project. Nevertheless a small minority of participants from this group went from **Good** time-keeping pre-test, to **Satisfactory** during the experience but most maintained a consistent time-keeping ability across both phases. This could be due to unfamiliarity with software and hardware used by these participants causing them to take longer to complete tasks than they would normally spend in the traditional environment.

With regard to spelling and willingness to write, this group showed a positive improvement between pre-project and learning experience phases. A 28% improvement from **Good** to **Excellent** grade in spelling was achieved and the remaining participants who did not move up a level showed no disimprovement in spelling. Also with regard to willingness to write 91% of participants showed improvements moving from a lower level to a higher level.

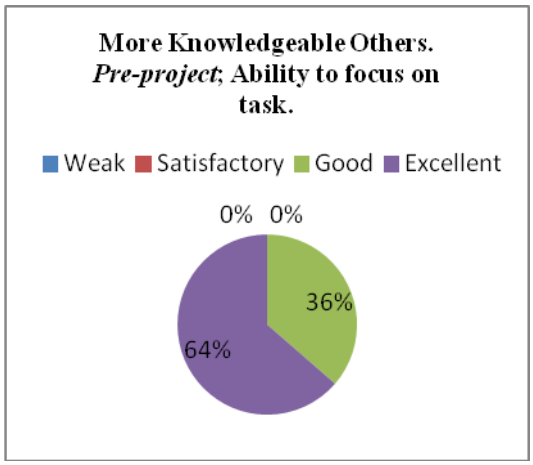


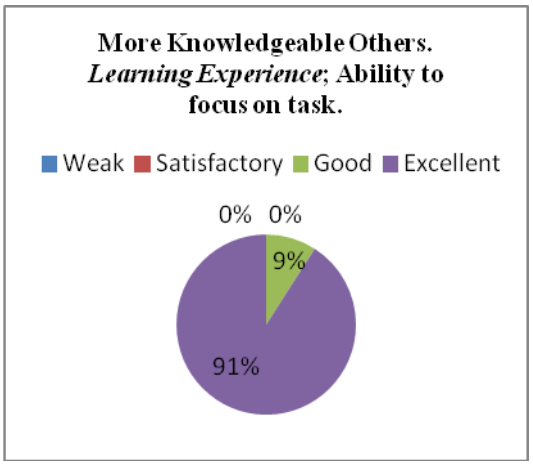


More Knowledgeable Others, Pre-project vs. Learning Experience, Spelling Ability.

2. Engagement

Pre-project results compared to results from the learning experience itself produced similar grades for over half of More Knowledgeable Others with regard to focus on task, working independently and confidence. Most of these participants had already achieved **Excellent** status for each sub topic under engagement pre-project and this remained consistent during the learning experience. Almost every other participant from the 'More Knowledgeable Other' group who attained a **Good** grade in each of the sub topics for engagement pre-project also progressed to **Excellent** grade during the learning experience phase.

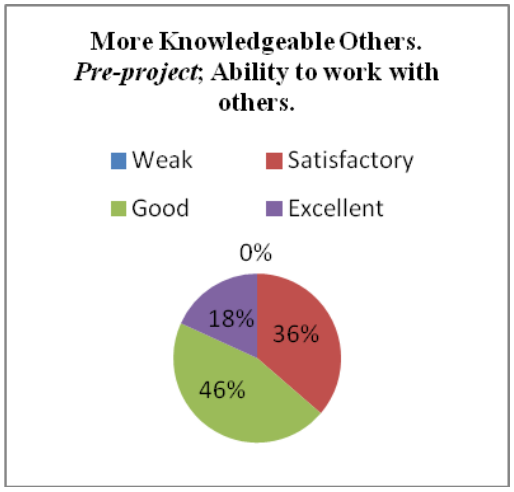


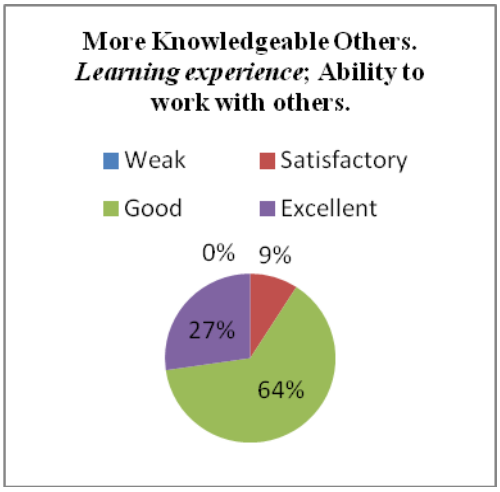


More Knowledgeable Others, Pre-project vs. Learning Experience, Ability to focus on task.

3. Collaboration

Over half of this group showed improvements in willingness to work with others and contribution to group work following the workshop activities completed during the learning experience. Some participants moved from **Satisfactory** to **Good** while others moved from **Good** to **Excellent.** There were no disimprovements in grade between both phases for any of the participants either, with the grades of the remaining participants staying unchanged.





More Knowledgeable Others, Pre-project vs. Learning Experience, Ability to work with others.

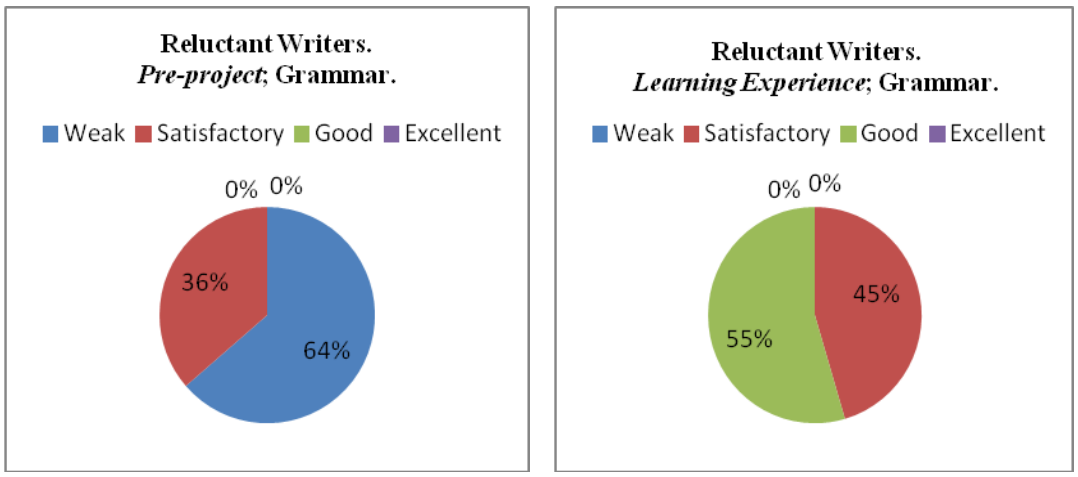
4. IT Skills

The individuals from this group pre-test generally had stronger IT skills than their peers and these results stayed consistent during the learning experience.

Reluctant Writers

1. Literacy Level

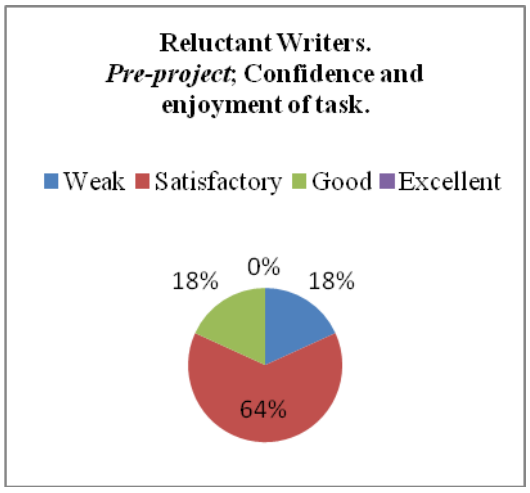
Pre-test results for the majority of the 'Reluctant Writers' were predominantly situated in the weak or satisfactory categories for the 6 sub topics. Every participant from this group showed some improvement in each of the sub topic areas of literacy level while engaging in the learning experience environment, with each candidate moving up at least one grade and no candidates showing disimprovements. (It must be noted however that project work completed after pre-test was in the learning experience phase which was collaborative as opposed to individual). Nevertheless this data confirms that when working with stronger peers, improvements in areas of weakness may be achieved.

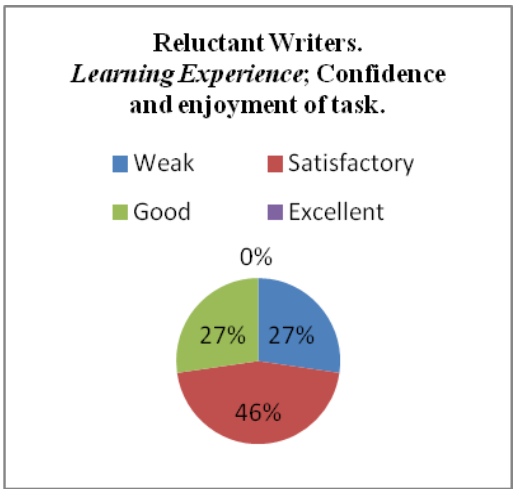


Reluctant Writers, Pre-project vs. Learning Experience, Grammar.

2. Engagement

The participants in this category pre-learning experience showed lower levels of independence, focus and enjoyment of written tasks compared to their peers. Most showed improvements in each of these areas during the learning experience however a small percentage of individuals from this group, for reasons discussed in the following chapter, were not engaged at times and allowed their partner to do the work. This resulted in them remaining on the same grade or achieving a lower grade in the learning experience phase, than they had achieved in the pre-project phase.

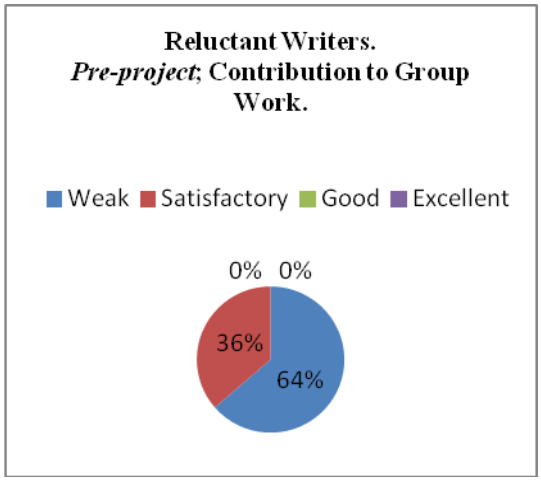


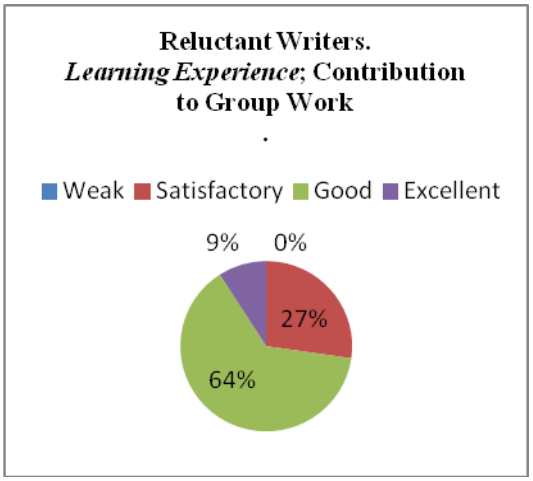


Reluctant Writers, Pre-project vs. Learning Experience, Confidence and enjoyment of task.

3. Collaboration

Individuals from this group, prior to engaging in the project, would have achieved low scores in collaborative skills section of the competency checklist (Appendix C) . Following immersion in the learning experience over the course of the weeks involved almost all of these individuals showed positive changes with regard to their ability to contribute to group work and willingness to work with others.





Reluctant Writers, Pre-project vs. Learning Experience, Contribution to Group Work.

4. It Skills

The participants in the reluctant writers group generally had poor IT skills prior to engaging in this project. This case study did not set out to improve IT skills however

those previously in the **Weak** category following participation in the project went to **Satisfactory** and almost all previously in **Satisfactory** were judged to have **Good** IT skills following completion of the project.

5.4 Observations

A number of observations were carried out during the learning experience phase using the observation protocol attached in the appendix. During the early collaborative stages many groups were observed swapping and taking turns and helping each other with spelling. In most pairs individuals took responsibility for the writing and others supplied ideas. Many grammatical errors were noted in most groups along with spelling errors. Also noted was that fact that people from different pairings helped other groups with ideas and spelling corrections. There seemed to be more of an interest and effort shown amongst participants with regard to spelling due to the future audience for the completed stories.

Problems also arose from time to time with regard to absences but as ideas had been previously discussed among pairings, this did not cause a problem in most cases. Conflict did arise at times between individuals over differences of opinion and direction but after discussion and supervision the situation was usually rectified. It was also observed that in certain groupings the stronger person caused the other to become frustrated with their own ability or contribution. Again the facilitator was needed to resolve any issues like this. However sometimes the less IT literate individual caused conflict in the group by deleting text or scenes by accident and causing work to be lost and time wasted.

During engagement with Photo Story it became clear that the children were spending more time typing with the keyboard than they would spend if they had to write the same words with pencil. Some children were observed as not having adequate keyboard knowledge or skills and this caused frustration for a few participants. Also this lack of knowledge in one instance caused text to be constantly deleted due to lack of understanding of the highlight function followed by the use of the delete key. Also in certain instances the less IT literate individual was less engaged in the task while their stronger partner worked on the computer. Time issues were also caused in a few groups with regard to failure to import certain scenes into Photo Story.

Another observation with regard to grammar was that frequently children who were used to adding speech marks to their text when using pencil and paper did not replicate this in Photo Story. The Edit Story function was useful here as it allowed the facilitator to reinforce ideas about capital letters, full stops and speech marks which were commonly omitted during first drafts on Photo Story. In many cases this was a factor due to a lack of experience using the computer and keyboard. Some stronger groups were observed using Microsoft Word as a means of correcting grammatical errors and spellings before copying and pasting the text into Photo Story.

5.5 Findings from the audio interviews

In the first focus group interviewed, one individual was negative towards pair work and also Photo Story, citing that it was "boring and took too long and there was too much fighting". The other members however agreed that working in groups provided more ideas and they enjoyed being able to use their own illustrations in Photo Story. Most agreed that the workshops and tutorials helped prepare them for Photo Story and mentioned that it was a good distraction from "normal work". Other issues raised included working with a weaker partner caused time-wasting as did the absence of a partner due to sickness etc. Also raised was the idea that better IT skills were needed by certain individuals and a lack of knowledge of the functions of Photo Story resulted in work which wasn't as good as it could have been.

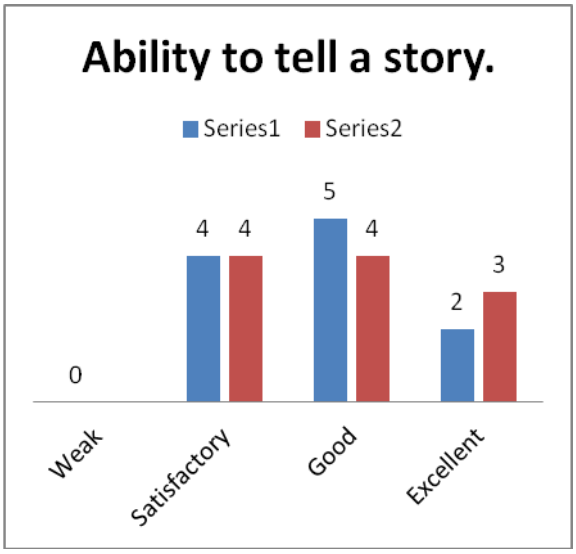
In another group, the participants mentioned the tutorials, workshops and looking at the work of others as helpful in their own preparation for the learning experience. Some mentioned that working with a partner was better but the subject of partners not carrying their weight was also mentioned. All of this group liked everything about Photo Story and even said they preferred using the computer over their copies and pencils "any day". This group found spelling and neatness in their copies hard to achieve so the computer helped them to achieve a better standard in these areas.

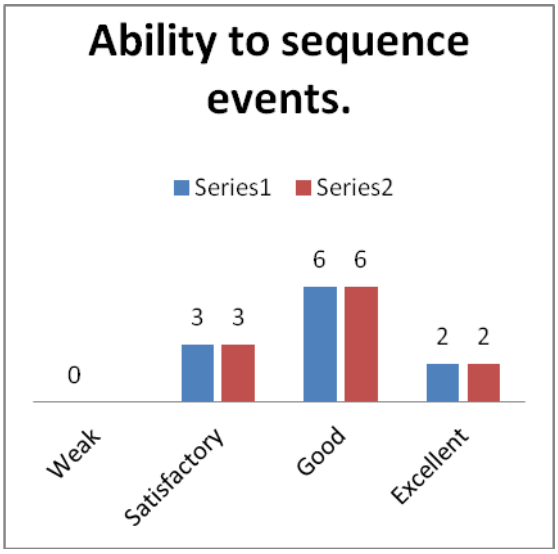
The final group interviewed also agreed that the computer was better than traditional forms of writing in the classroom as their handwriting in their copy as one individual said, "is messy and I generally don't like doing it". Photo Story seemed to encourage this

group to improve their spelling or make them more conscious of the importance of correct spelling and the idea of an audience viewing their final work was mentioned. They also found the tutorials and looking at others peoples Photo stories helpful in advance of making their own. Complaining by some in group work situations was mentioned however this group unanimously agreed that even with the problems that arise in group situations, this form of work is preferable than individual.

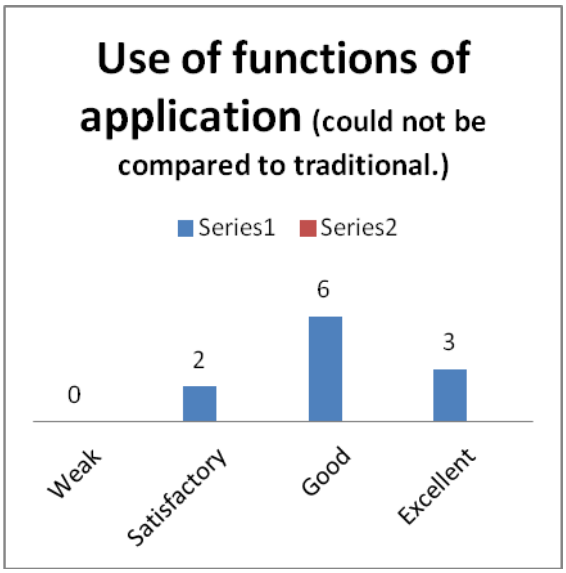
5.6 Digital Story Evaluation

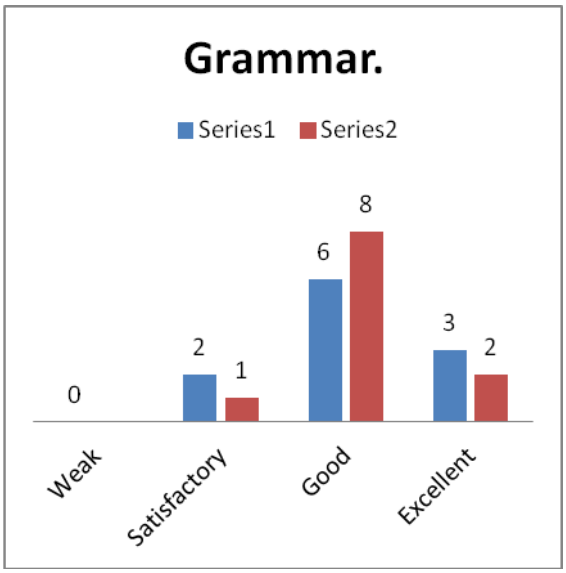
Each group's completed digital story was assessed using a rubric (Appendix D) under 5 parameters of expertise and the results are graphed below using Microsoft excel. **Series 1** Illustrates collaborative grades for traditional pencil and paper stories while **Series 2** shows collaborative digital story grades.





As can be seen in the above bar chart, there were no decreases in ability to tell a story between traditional and digital modes with one pairing increasing from **Good** to **Excellent**. Ability to sequence events remained unchanged even though there were some issues initially with importing pictures to Photo Story.





Use of functions of the application such as fades, transitions, text placement, music could not be compared to traditional methods but the groups were generally proficient in the use of these functions with the majority awarded a **Good** grade for usage. Grammar improved for the majority of participants when working in the digital medium. Time keeping on the other hand was more accurate in the traditional phase as opposed to the digital phase. From observations this is due to unfamiliarity with keyboard functions and layout, poor typing skills, navigating the desktop, using functions of the application and making errors which needed correction before proceeding.

5.7 Individual Reflections

Data provided by the individual reflections was coded and divided up into a number of recurring themes (Creswell, 2008). The main themes to emerge were as follows:

Conflict in groups

A number of individuals mentioned arguments taking place in groups. This was also observed and mentioned in the audio recordings. The idea of a dominant person taking control of the work was raised by a number of individuals.

Benefits of group work

Some individuals mentioned that they received good ideas from their partners. Other people mentioned that turn taking and dividing up roles between them had been a positive experience. Another wrote about the difficulty they had when their partner was absent.

Scaffolding

A few individuals mentioned that the tutorials were helpful in teaching them to use Photo story in advance of engaging with it. Others mentioned that watching the Photo stories that had previously been created by others was helpful in giving them ideas for their own work.

Photo Story

Some individuals mentioned they liked using their own illustrations while others stated they enjoyed using the functions of Photo Story.

5.8. **Conclusion**

This chapter has analysed the data and introduced the findings to answer the research question. Common themes emerging from the data include an increase in engagement and literacy emerging from interaction in the learning experience. Findings can support that collaboration around the creation of digital stories can improve engagement and literacy in young writers. The final chapter debates the findings with regard to the literature. The limitations and possibility of future research areas emerging from the findings are also discussed.

6. Discussion and Conclusion

6.1 Discussion

This study aimed to assess if collaboration around the creation of digital stories can improve engagement and literacy in young writers. Research has shown that in order for learning to take place and be successful, the subjects must be engaged during the process and the key is through the use of meaningful activities which utilise social constructivist approaches (Sadik, 2008). The more meaningful the activity, the more successful a student will be completing the task (Abidin, 2011). Analysis of the findings from the previous chapter has provided concrete answers to the research questions raised in this study. These questions are discussed below and provide a meaningful conclusion to the study.

Primary Research Question:

Can collaboration around the creation of digital stories improve engagement and literacy in young writers?

Lambirth and Goouch (2006) believe that in order to motivate children and keep them engaged in writing tasks the following elements must be present; authentic contexts, genre and audience, collaborative opportunities, access to models for writing and of course the presence of various resources to aid and encourage writing. This project endeavoured to provide these elements and in doing so discovered that they do improve engagement in most children.

Results from the study support the statement that collaboration around the creation of digital stories can improve engagement and literacy in young writers. Triangulation of the data shows that in the case of More Knowledgeable Others, clear improvements in engagement were noted in the technology usage phase. These individuals showed better levels of engagement pre test than their peers but this level of engagement increased even more during the technology process phase. Data from observations and interviews showed that these children enjoyed problem solving and were eager to learn new ways to

use the computer and this seemed to maintain their interest. When the Reluctant Writers were faced with similar problems to do with certain functions of the technology, this was observed as having the opposite effect for some and at times reduced their level of engagement and led to a few individuals becoming frustrated and giving up. In this category, improvements did occur in engagement however not all participants improved their levels of engagement. Some of these participants actually lost interest when it came to using the computer to write their stories. It was observed that some of these individuals lacked the necessary IT skills of their peers and this was a major factor causing them to lose focus in this part of the process.

Literacy ability on the other hand improved or remained consistent for both groups in the technology usage phase. The fact that the stories would be viewed by others may have motivated individuals to read over, edit and re draft more meticulously. Seeing the words clearly on screen as opposed to on paper with messy handwriting in some cases, may also have helped individuals to view and clean up spelling errors. It may also have been easier for a facilitator to go around and view each screen and quickly provide encouragement or guidance where needed as opposed to navigating around a classroom and picking up copies and having to decipher an individual's handwriting. The improvement in engagement therefore did result in literacy gains even though, as stated previously, the technology usage did cause time constraints.

Secondary Research Questions:

- Is collaboration fundamental to the learning process or would similar results be achieved if the task were individual?

  It was clear from the study that collaboration was important for the reluctant writers as the More Knowledgeable Others provided a good level of support when needed. From observation and also from the audio interviews, collaboration also caused conflict between the participants. It is possible therefore that the reluctant writers would not have achieved the same results if the whole process had of been based on individual output. From the literature review, conflict in groups was foreseen however a number of mechanisms were implemented in advance in order

to reduce this level. The initial drama lessons and circle time lessons based on working with others helped prepare the children in advance, to work together. That said it was still necessary to supervise and facilitate groupings when conflict arose. Overall the standard of work did not suffer because of this, and it was observed and mentioned in the interviews and reflections that working with others was a positive experience for the majority of individuals.

The environment of school is vital for young people to construct their own identity as a writer and this idea of self can be formed through the messages students receive from adults and peers about their own ability in literacy tasks (Wearmouth, Berryman, & Whittle ,2011). Positive reinforcement from peers helped the groups develop their ideas and encouraged them to continue with the process. Rebmann (2012) and Rule (2010) also highlight the use of digital storytelling in helping people to develop individual identity with many users choosing to utilise the medium to write personal stories and reflecting on past experiences.

- How does the standard of literacy in the digital form compare to traditional forms of writing?

  Participants were observed as being better able to tell a story using digital means as opposed to traditional and the level of grammar improved when compared to the traditional version. Spelling ability was better for both groups in the technology usage phase as mentioned above. It was observed and noted in the interviews that certain children were more concerned about spelling words correctly in their digital stories as they were being prepared for an audience and not just for themselves or the teacher. Certain children also made use of Microsoft Tools to check spelling and grammar in advance of uploading text to Photo Story. The use of the digital format also seemed to help the children sequence and visualise their story.

- Are the children more motivated, enthusiastic and interested in literacy when it incorporates technology?

Data from observation, personal reflections and audio interviews supports the research question that the majority of participants were more interested and focused on the work to be completed during the technology usage phase. Lambirth and Goouch (2006) believe children can be forced to write but they can't be forced to like it or have an interest in the process. The technology aspect of this study was fundamental in capturing this interest and also in producing a higher standard of writing. Children were observed watching instructional videos with great interest on Youtube and viewing digital stories created by other children in the past. This was also mentioned in interviews and reflections. Furthermore, according to Rebmann (2012), participation becomes more interesting and exciting for children when technology is used for writing and makes some students question their own opinions of their ability to write. This causes certain pupils to change from being reluctant writers initially to becoming more able and confident writers as emerged from this study.

6.2. Future research

The total time taken to complete the digital task in the learning experience was longer than a similar paper based task. This was the result of a number of factors. To begin with the majority of the students were not expert in the use of the hardware and software technology used in this project. Many children were observed taking much longer to write a word with the keyboard than they would normally take using pencil and paper. Also navigating through the application and correcting errors caused by the simple misplacing of a finger on a mouse caused time issues. Children also had to move from their classroom to another location where a suitable number of computers existed. While this is not included in time taken to produce their digital stories, it did require extra planning/timetabling and a more ideal situation would have occurred if the classroom used for the study was equipped with laptops or tablets for use by each pairing. In this way the whole process may have flowed even better.

It would therefore be very interesting to see how the students would perform in future tasks of similar nature, now that they have become more familiar with the technology and also if they had better access to technology on a more regular basis. Would the time taken

be less and would the standard of writing improve even more? It did not form part of this project but it would also be interesting to study if there is a link between children with poor handwriting and low engagement and if engagement can be improved through use of the computer.

As this study was carried out on a group of twenty two children which is a small sample size, further research could be carried out on a larger mixed sample of students including older and more technologically experienced learners. Zainal (2007) states that for a case study to be made more valid, an increase in the population sampled ca make a difference. Research could also be carried out to assess if the students who didn't seem to benefit from collaboration would be more engaged if allowed to work predominantly on their own.

Other limitations to the research include the short time span of the project and the novelty effect on the participants. It would also be interesting to see if the engagement levels remained high as the students become more familiar with the process and technology involved. In addition the researcher was at times a participant and at other times a non participant observer. Examining the outcomes but bearing in mind the limitations, the results indicate that collaboration around the creation of digital stories can improve engagement and literacy in young writers. A more in-depth study with a larger sample size and a control group may offer more rich, relevant and valid information.

6.3. Conclusion

The purpose of this study was to explore if levels of literacy and engagement in children could be improved using technology in a collaborative environment. By creating a literacy led environment, where technology could be used collaboratively, it was envisaged that engagement in literacy and literacy standards would show signs of improvement. The findings show that collaboration around the technology was indeed welcomed by most children who saw the benefit and enjoyed the experience. The final product produced collaboratively is also testament to the positive experiences mentioned by the participants. Evidence from the project suggests that children are more engaged in literacy activities and do show and improvement in literacy standards when they work collaboratively around the creation of digital stories.

The study also suggests that not all individuals feel they benefit from collaboration and this did cause conflict from time to time. Evidence suggests however that these individuals whether they liked working with others or not, did benefit from the collaborative experience and required less scaffolding than they would have required if working individually. The technology utilised was a big draw for most participants but at the same time technology acted as a barrier for a small number of participants who were frustrated by their own ability and knowledge of certain software and hardware functions. With more time to invest in training these individuals and more exposure to the technology itself, it is very possible these opinions and actions would become more positive.

In conclusion, the push of traditional methods and the pull of new literacies is a battle that remains strong in the modern classroom (Labbo, 2006). Only when teachers start to embrace the positive effects that new literacies bring to the classroom and when certain educators stop viewing technology as merely a transitional exercise, will real change come about and technology can be said to be fully integrated into the school system. By creating interactive environments and promoting the use of digital technology to support writing, educators are ‘tapping into students’ strength to overcome their weaknesses’ (Abidin, 2011).

References

Axelson, R. D., & Flick, A. (2011). Defining Student Engagement. Change, 43(1), 38-43. doi:10.1080/00091383.2011.533096

Abidin, M., Pour-Mohammadi, M., & Hamid, F. (2011). Blogging: Promoting Peer Collaboration in Writing. International Journal Of Business, Humanities & Technology, 1(3), 98-105.

Alessi, S.M., Trollip, S.R. (2001) Multimedia for learning : methods and development. Boston ; London : Allyn and Bacon.

Baumann, J. F., Ware, D., & Edwards, E. (2007). "Bumping Into Spicy, Tasty Words That Catch Your Tongue": A Formative Experiment on Vocabulary Instruction. Reading Teacher, 61(2)

Chang, Y., Morales-Arroyo, M., Than, H., Tun, Z., & Wang, Z. (2010). Collaborative learning in wikis. Education For Information, 28(2-4), 291-303

Clifford, V and Dunsmuir, S. (2003).Children's Writing and the Use of Information and Communications Technology. *Educational Psychology in Practice*; Vol. 19 Issue 3, 171, 17p.

Corden, R. (2003). Writing is more than 'exciting': equipping primary children to become reflective writers. Reading, 37(1), 18-26

Creswell, J. (1994). *Research design: Quantitative and qualitative approaches*, Thousand Oaks, CA: Sage.

Creswell, J. (2008). *Educational Research: Planning, conducting and evaluating quantitative and qualitative research* (3rd ed.). Upper Saddle River: Pearson Education Ltd.

Creswell, J. (2012) *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research* Boston: Pearson Education Inc.

Czarnecki, Kelly. (2009) Digital Storytelling in Practice. Library Technology Reports. www.alatechsource.org

D'On Jones, C., Reutzel, D., & Fargo, J. D. (2010). Comparing Two Methods of Writing Instruction: Effects on Kindergarten Students' Reading Skills. Journal Of Educational Research,

Dix, S., & Amoore, L. (2010). Becoming curious about cats: A collaborative writing project. Australian Journal Of Language & Literacy, 33(2), 134-150.

Edwards-Groves, C. (2012). Interactive Creative Technologies: Changing learning practices and pedagogies in the writing classroom. Australian Journal Of Language & Literacy, 35(1), 99-113

Gambrell, L. B. (2011). Seven Rules Of Engagement: What's Most Important to Know About Motivation to Read. Reading Teacher, 65(3), 172-178.

Good, T.L. and Brophy, J. (2003) Looking in classrooms (9th edn), Boston,MA: Allyn and Bacon

Grabe, M. and Grabe, C. (2007). Integrating Technology for Meaningful Learning (5th edn),Boston,MA: Houghton Mifflin Company.

Greiffenhagen, C. (2008). Unpacking tasks: The fusion of new technology with instructional work. Computer Supported Cooperative Work (CSCW), 17(1), 35-62

Graham, S., & Perin, D. (2007). What We Know, What We Still Need to Know: Teaching Adolescents to Write. Scientific Studies Of Reading, 11(4), 313-335.

Harper, H., Helmer, J., Lea, T., Chalkiti, K., Emmett, S., & Wolgemuth, J. (2012). ABRACADABRA for magic under which conditions? Case studies of a web-based literacy intervention in the Northern Territory. Australian Journal Of Language & Literacy, 35(1), 33-50.

Honan, E. (2012). 'A whole new literacy': teachers' understanding of students' digital learning at home. Australian Journal Of Language & Literacy, 35(1), 82-98.

How Digital Storytelling Builds 21st Century Skills. (2009). Library Technology Reports, 45(7), 15-19

Hungerford-Kresser, H., Wiggins, J., Amaro-Jiménez, C., & Amaro-Jiménez, C. (2011). Learning From Our Mistakes: What Matters When Incorporating Blogging in the Content Area Literacy Classroom. Journal Of Adolescent & Adult Literacy, 55(4), 326-335.

Keller, J. M. (2008). First principles of motivation to learn and e3-learning. Distance Education, 29(2), 175-185

Kutnick, P., Blatchford, P., & Baines, E. (2002). Pupil Groupings in Primary School Classrooms: sites for learning and social pedagogy?. British Educational Research Journal, 28(2), 187-206

Labbo, L. D. (2006). Literacy pedagogy and computer technologies: Toward solving the puzzle of current and future classroom practices. Australian Journal Of Language & Literacy, 29(3), 199-209.

Lambirth, A., & Goouch, K. (2006). Golden times of writing: The creative compliance of writing journals. Literacy, 40(3), 146-152.

Lei, S. A., Kuestermeyer, B. N., & Westmeyer, K. A. (2010). Group Composition Affecting Student Interaction and Achievement: Instructors' Perspectives. Journal Of Instructional Psychology, 37(4), 317-325.

Lewis, A. (1992). Group child interviews as a research tool. British Educational Research Journal, 18(4), 413

Lim, P., Nonis, D., & Hedberg, J. (2006). Gaming in a 3D multiuser virtual environment: Engaging students in science lessons. British Journal of Educational Technology, 37(2), 211–231.

Mason, L. H., Harris, K. R., & Graham, S. (2011). Self-Regulated Strategy Development for Students With Writing Difficulties. Theory Into Practice, 50(1), 20-27.

Mayer, R.E. (2001). *Multimedia Learning.* New York: Cambridge University Press.

McLeod, S. A. (2007). Vygotsky - Social Development Theory. Retrieved from http://www.simplypsychology.org/vygotsky.html

Mostmans, L., Vleugels, C., & Bannier, S. (2012). Raise Your Hands or Hands-on? The Role of Computer-SupportedCollaborative Learning in Stimulating Intercreativity in Education. Educational Technology & Society, 15 (4), 104–113.

McKenney, S., & Voogt, J. (2012). Teacher design of technology for emergent literacy: An explorative feasibility study. Australasian Journal Of Early Childhood, 37(1), 4-12

McMaster, K. L., Xiaoqing, D., Parker, D. C., & Pinto, V. (2011). Using Curriculum-Based. Measurement for Struggling Beginning Writers. Teaching Exceptional Children, 44(2), 26-34.

Ormrod, J.E. (2008). Human Learning (5th edition). Upper Saddle River, NJ: Pearson/Merrill Prentice Hall.

O'Brien, H. L., & Toms, E. G. (2008). What is user engagement? A conceptual framework for defining user engagement with technology. Journal Of The American Society For Information Science & Technology, 59(6), 938-955.

Panoutsopoulos, H., & Sampson, D. G. (2012). A Study on Exploiting Commercial Digital Games into School Context. Journal Of Educational Technology & Society, 15(1), 15-27.

Patera, M., Draper, S., & Naef, M. (2008). Exploring Magic Cottage: a virtual reality environment for stimulating children's imaginative writing. Interactive Learning Environments, 16(3), 245-263. doi:10.1080/10494820802114093

Pedersen, E. (1995). Storytelling and the art of teaching. FORUM, 33(1). http://exchanges.state.gov/forum.

REBMANN, K. R. (2012). Theory, Practice, Tools. Teacher Librarian, 39(3), 30-34

Razon, S., Mendenhall, A., Yesiltas, G., Johnson, T. E., & Tenenbaum, G. (2012). Evaluation of a Computer-Supported Collaborative Learning Tool: Effects on Quiz Performance, Content-Conceptualization, Affect, and Motivation. Journal Of Multidisciplinary Research (1947-2900), 4(1), 61-78.

Rieber, L. P., & Noah, D. (2008). Games, simulations, and visual metaphors in education: antagonism between enjoyment and learning

Robson, Colin. (2007). *How to do a research project: a guide for undergraduate students*.

Oxford: Blackwell Publishing Ltd.

Rule, L. (2010). DIGITAL STORYTELLING: Never Has Storytelling Been So Easy or So Powerful. Knowledge Quest, 38(4), 56-57.

Ryberg, T., & Dirckinck-Holmfeld, L. (2008). Power Users and patchworking - An analytical approach to critical studies of young people's learning with digital media. Educational Media International, 45(3), 143-156

Sadik, A. (2008). Digital storytelling: A meaningful technology-integrated approach for engaged student learning. Educational Technology Research And Development, 56(4), 487-506. doi:10.1007/s11423-008-9091-8

Schaffer, R (1996). *Social Development.* Oxford: Blackwell.

SHEPPARD, S. L. (2011). School Engagement: A 'Danse Macabre'?. Journal Of Philosophy Of Education, 45(1), 111-123.

TEMİZKAN, M. (2011). The Effect of Creative Writing Activities on the Story Writing Skill. Educational Sciences: Theory & Practice, 11(2), 933-939

Tsou, W., Wang, W., & Tzeng, Y. (2006). Applying a multimedia storytelling website in foreign language
learning. Computers & Education, 47, 17–28.

Valerie, L. M., & Foss-Swanson, S. (2012). Hey! Guess What I Did in School Today. Teaching Exceptional Children, 44(3), 40-48

Vass, E. E. (2002). Friendship and collaborative creative writing in the primary classroom. Journal Of Computer Assisted Learning, 18(1), 102-110.

Vygotsky, L.S. (1962). *Thought and Language.* Cambridge MA: MIT Press.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Walsh, M. (2008). Worlds have collided and modes have merged: classroom evidence of changed literacy practices. Literacy, 42(2), 101-108.

Walsh, M. (2010). Multimodal literacy: What does it mean for classroom practice? Australian Journal of Language & Literacy; Vol. 33 Issue 3, p211-239, 29p

Walters, M., & Fehring, H. (2009). An investigation of the incorporation of Information and Communication Technology and thinking skills with Year 1 and 2 students. Australian Journal Of Language & Literacy

Wawro, L. (2012). Digital Storytelling. Children & Libraries: The Journal Of The Association For Library Service To Children, 10(1), 50-52.

Wearmouth, J., Berryman, M., & Whittle, L. (2011). 'Shoot for the moon!' Students' identities as writers in the context of the classroom. British Journal Of Special Education, 38(2), 92-99.

WEBB, N. (1991) Task-related verbal instruction and mathematics learning in small groups, Journal forResearch in Mathematics Education, 22, pp. 366–389.

Westwood, P. (2007). Commonsense Methods for Children with Special Education Needs-5th Edition. Routledge.

Yin, R. (2003). Case Study Research: Design and Methods. Thousand Oaks: Sage Publications.

Zenaidi, G. (2006). Make Writing Interactive with ICT. [Online] Available: http://techlearning.com/showArticle.php?articleID=190301907 (Aug. 25, 2011)

Appendix A

Interview Protocol

Before each interview the participants will be reminded that the interview will be recorded. They will also be reminded that there are no right or wrong answers, that they shouldn't feel under pressure to answer any question and to ask the researcher to repeat a question if there is any misunderstanding.

Introduction

1. What do you think of writing in school?
2. What do you find most difficult about writing?

Programme of work

1. Did you learn anything new during the workshops?
2. Did you learn anything from making your own comics?
3. Did the drama lessons help you to work better with others?
4. What was best/worst about working in groups?
5. What did you like best about the workshops?
6. How did you find editing and redrafting?
7. How did you manage when using Photo story?
8. Did you find the tutorials helpful along with watching other peoples's Photo stories before creating your own?
9. What did you find easy about this project?
10. What did you find hard about it?
11. Was planning an important part of this project?
12. Would you like to use this technology in future?
13. Is there anything else you wish to tell me that I didn't ask you?

Example of probing questions which may be used

1. Can you tell me more about that?
2. Can you give me an example?
3. Any other opinions?

Appendix B

Observation Protocol

Setting	
Observer	
Role of Observer	
Group	
Time	
Date	
Length of observation	

Time	Description	Reflective Notes

Appendix C

Individual Competency Checklist (Pre and post)

Project

Can collaboration around the creation of digital stories improve the engagement in and the learning of literacy in young writers?

Participant ID:

Researcher will mark each box with an (x) where appropriate

	Weak	Satisfactory	Good	Excellent
1. Literacy Level				
Sentence Structure	Sentences poorly constructed and made little sense.	Very short sentences with little or no description.	Well constructed sentences with good descriptions.	Very well constructed sentences with excellent descriptions.
Grammar	Little attention paid to full stops, capital letters, spacing.	Satisfactory attention paid to full stops, capital letters, spacing.	Good awareness paid to full stops, capital letters, spacing	Excellent awareness paid to full stops, capital letters, spacing
Spelling	Inability to spell basic words correctly.	Satisfactory ability to spell basic words correctly.	Good awareness of how to spell basic words and more advanced words.	Excellent command of even the most advanced spellings.
Willingness to write	Very low level of interest in written tasks.	Satisfactory level of interest in written tasks.	Interested in written tasks.	Extremely happy when involved in written tasks.
Willingness to edit and re-draft	No interest in looking back over work to check for mistakes or makes changes.	Little interest in looking back over work to check for mistakes or makes changes.	Actively looks back over work to check for mistakes or makes changes.	Extremely aware of looking back over work to check for mistakes or makes changes.
Time-keeping	Very little written output produced compared to peers in a given time frame.	Less output produced compared to peers in a given time frame.	Good level of output produced compared to peers in a given time frame.	More than average output produced compared to peers in a given time frame.
2. Engagement				
Ability to focus on task	Easily distracted, needs constant supervision.	Can be distracted easily, able to work on own but improved with supervision.	Able to concentrate on task at hand and not easily distracted.	Excellent concentration skills and works without distraction.
Independence	Needs a supervisor constantly to monitor progress.	Standard is improved when monitored. Actively seeks help from others.	Able to work and problem solve using own initiative.	Excellent ability to work and problem solve using own initiative.
Confidence and enjoyment of task	Shows little enjoyment and low confidence in own ability.	Enjoys some aspects but not as much as peers. Needs encouragement.	Good level of confidence and enjoyment shown.	Excellent level of confidence and enjoyment shown.
3. Collaboration				
Willingness to work with others	Hostile towards working with others.	Needs encouragement to work with others.	Likes working with others.	Really enjoys working with others
Contribution to group work	Very little contribution to group.	Has ability to contribute but needs to be encouraged.	Contributes well to group.	Excellent suggestions, sharing of ideas in group situations.
4. IT Skills	Little or no knowledge of how to input words using a keyboard or navigate the desktop using a mouse.	Basic knowledge of how to input words using a keyboard or navigate the desktop using a mouse.	Good awareness of how to navigate a desktop, type words, open files.	Excellent knowledge and ability of how to navigation through Windows.

Appendix D

Digital Story Evaluation Rubric

Project

Can collaboration around the creation of digital stories improve the engagement in and the learning of literacy in young writers?

Group ID:

Researcher will mark each box with an (x) where appropriate

	Weak	Satisfactory	Good	Excellent
Ability to tell a story (Ingredients)	Poor awareness of plot, beginning, middle, end. No character descriptions and no evidence of conflict and resolution.	Evidence of attempt made to describe characters, but no proper structure.	Good structure and good level of descriptions used. Concludes well.	Excellent use of all ingredients. Story has plot, character descriptions and very good conclusion.
Ability to sequence and illustrate scenes from a story	Illustrations do not adequately support a good story. Some images missing.	Evidence of effort made to sequence images correctly and outline a story but missing certain ingredients found in text versions.	Similar to text version. Contains all the ingredients and images in the right order.	AS good if not better than the text version. All the ingredients remain and images convey the story correctly.
Use of functions of application	No evidence of use of fades, transitions, text placement, music and other special effects	Very little use of fades, transitions, text placement, music and other special effects	Good use of fades, transitions, text placement, music and other special effects.	Excellent use of fades, transitions, text placement, music and other special effects.
Grammar	Little attention paid to full stops, capital letters, spacing.	Satisfactory attention paid to full stops, capital letters, spacing.	Good awareness paid to full stops, capital letters, spacing	Excellent awareness paid to full stops, capital letters, spacing
Time keeping	Very little written output produced compared to peers in a given time frame.	Less output produced compared to peers in a given time frame.	Good if not similar level of output produced compared to peers in a given time frame.	Better than average output produced compared to peers in a given time frame.

Appendix E

Does collaboration around the creation of digital stories improve engagement in young writers?

Board of Management Information Sheet

Twenty-two third class students from St. Ultan's N.S. are invited to take part in a session of computer-based activities to support their writing. This is a case study conducted by Daragh Bell, a teacher in St. Ultan's and Trinity College student, in partial fulfilment of a masters degree in Technology and Learning.

The aim of this research project is to discover if the children's skills and enjoyment of writing are improved through the process of creating digital stories collaboratively. The work produced using ICT will be compared to the individual's normal work and current phase of writing in the First Steps Development Continuum to see how much of a difference there is, if any, in the final product.

After the activities have been completed, the participants will be asked to take part in a short interview with the researcher. Some interviews may be audio recorded and all recordings will be anonymised when transcribed**. A participant may opt out of the interview if he or she wishes. Children will not be interviewed unless they agree.** All information that is collected by the researchers will be anonymised and stored in accordance with the Data Protection Act at Trinity College, Dublin. In the extremely unlikely event that any illicit activity is made known to me, this will be reported to the appropriate authorities.

.

Your permission for the learning activities and research to take place in St. Ultan's N.S. is requested. All participants will also require parental consent to take part in the research. **Participation is voluntary and children who do not agree to participate will engage in normal curricular activities under the supervision of another 3rd class teacher while the project activities are taking plac**e. **As this research involves the use of computers, caution has to be taken with regard to children with epilepsy or family members diagnosed with the condition. If there is a child with a family history of epilepsy the child may take part but only with parental permission.** There is no penalty for declining to take part in this research nor is there any reward for participation.

If you have any questions before, during or after the project, please do not hesitate to contact Daragh Bell at Trinity College: bellda@tcd.ie or 01-643 4599

Project

Does collaboration around the creation of digital stories improve engagement in young writers?

Board of Management Consent Sheet

Twenty-two third class students from St. Ultan's N.S. are invited to take part in a session of computer-based activities to support their writing. This is a case study conducted by Daragh Bell, a teacher in St. Ultan's and Trinity College student, in partial fulfilment of a masters degree in Technology and Learning.

The aim of this research project is to discover if the children's skills and enjoyment of writing are improved through the process of creating digital stories collaboratively. The work produced using ICT will be compared to the individual's normal work and current phase of writing in the First Steps Development Continuum to see how much of a difference there is, if any, in the final product. **.**

The Board has been provided with an information sheet which outlines the activities that the children will take part in, how data will be collected and stored and how it can contact the research team. **. A participant may opt out of the interview if he or she wishes. Children will not be interviewed unless they agree. Participation is voluntary and children who do not agree to participate will engage in normal curricular activities under the supervision of another 3rd class teacher while the project activities are taking plac**e. **As this research involves the use of computers, caution has to be taken with regard to children with epilepsy or family members diagnosed with the condition. If there is a child with a family history of epilepsy the child may take part but only with parental permission.**

The Board understands that it may withdraw the institution from the project at any time should it wish to do so for any reason and without penalty.

Signature of Chair of Board of Management ..... Date:.....

Name of institution.....

Signature of Project Leader (TCD) .....
Date:.....

Please note: For any further questions please contact bellda@tcd.ie or 01-643 4599

Appendix F

Does collaboration around the creation of digital stories improve engagement in young writers?

Parent Information Sheet

Dear Parent/Guardian

Twenty-two third class students from St. Ultan's N.S. are invited to take part in a session of computer-based activities to support their writing. This is a case study conducted by Daragh Bell, a teacher in St. Ultan's and Trinity College student, in partial fulfilment of a masters degree in Technology and Learning.

The aim of this research project is to discover if the children's skills and enjoyment of writing are improved using digital stories collaboratively. The work produced using ICT will be compared to the individual's normal work and current phase of writing in the First Steps Development Continuum to see how much of a difference there is, if any, in the final product.

After the activities have been completed, the participants will be asked to take part in a short interview with the researcher. Some interviews may be audio recorded and all recordings will be anonymised when transcribed. **Children will not be interviewed unless they and you agree.** All information that is collected by the researchers will be anonymised and stored in accordance with the Data Protection Act at Trinity College, Dublin. In the extremely unlikely event that any illicit activity is made known to me, this will be reported to the appropriate authorities.

The School Board of Management will be given a similar Consent Form in order to give permission for the project described here to take place in its context. However, for the research part of the project, information about your child can only be recorded and used with your permission. This will include their actions recorded during the activity, learning log, responses to questionnaire and feedback during interview. **As this research involves the use of computers, caution has to be taken with regard to children with epilepsy or family members diagnosed with the condition. If there is a child with a family history of epilepsy the child may take part but only with parental permission**

Participation in the research part of the project is voluntary and you may remove your child from the project at any time, for any reason, without penalty. Any information already recorded about your child will not be used. Alternatively your child may elect to withdraw from this study. **Children who do not agree to participate, will engage in normal curricular activities under the supervision of another 3rd class teacher while the project activities are taking plac**e. There is no penalty for declining to take part in this research nor is there any reward for participation.

If you have any questions before, during or after the project, please do not hesitate to contact Daragh Bell at Trinity College: bellda@tcd.ie or 01-643 4599

Project

Does collaboration around the creation of digital stories improve engagement in young writers?

Parent Consent Form

I ..... (name of **parent/guardian)** consent to ..... (name of child) taking part in this research project.

Twenty-two third class students from St. Ultan's N.S. are invited to take part in a session of computer-based activities to support their writing. This is a case study conducted by Daragh Bell, a teacher in St. Ultan's and Trinity College student, in partial fulfilment of a masters degree in Technology and Learning.

The aim of this research project is to discover if the children's skills and enjoyment of writing are improved using digital stories collaboratively. The work produced using ICT will be compared to the individual's normal work and current phase of writing in the First Steps Development Continuum to see how much of a difference there is, if any, in the final product.

I have been provided with an information letter which outlines the activities my child will take part in, how research data will be collected and stored and how I can contact the research team. I understand that I may withdraw my child from the research project at any time should I wish to do so for any reason and without penalty. Additionally, I am aware that my child's consent will also be required in order for him/her to take part in the study.

Children will not be interviewed unless they and you agree. .Children who do not agree to participate, will engage in normal curricular activities under the supervision of another 3rd class teacher while the project activities are taking place. **As this research involves the use of computers, caution has to be taken with regard to children with epilepsy or family members diagnosed with the condition. If there is a child with a family history of epilepsy the child may take part but only with parental permission**

Data Protection: I agree to Trinity College, University of Dublin storing of any personal data relating to my child which results from this project. I agree to the processing of such data for any purposes connected with the research project as outlined to me**. I understand that my child will not be identified in any data stored.**

Signature of **parent/guardian .....** Date:.....

Signature of Project Leader (TCD):…… Date:……

Please note: As this research involves the use of computers, children with epilepsy cannot take part in either the learning activity or research study, please inform the researcher if this is the case. If there is a family history of epilepsy the child may take part, but does so at your risk. For any further questions please contact bellda@tcd.ie or 01-643 4599

Appendix G

Does collaboration around the creation of digital stories improve engagement in young writers?

Child Information Sheet

You will be given the chance to take part in a writing project involving a number of workshops designed to help you with your writing and teaching you how to make your own digital stories.

If you agree to take part in this project, Múinteoir Daragh will help you and give advice as you complete the activities.

You will also be asked to answer some questions about the activities.

At the end you will have the chance to take part in a short group talk with Múinteoir Daragh which will be recorded.

You do not have to take part in this interview if you do not wish to do so.

Any information Múinteoir Daragh writes down will not mention your name or anything that will identify you.

If you do not want to take part in the project you do not have to, **you can attend 3rd class as normal.** You can also take part in the project with the class if you want but you can choose that none of your information will be recorded and will not be used by Múinteoir Daragh.

There is no problem if you choose to take part now and then change your mind later. If that happens all your information will be removed and not used in the study.

Thank you.

Project

Does collaboration around the creation of digital stories improve engagement in young writers?

Child Consent Form

I .....agree to take part in this research project.

I have read, or had read to me, information about the project and know how information will be collected and stored. I understand that I can choose not to take part in the project at any time. I know that my parents will also be given a consent form in order for me to take part in this study.

Data Protection: I agree to Trinity College, University of Dublin, storing and using any of the information that results from my participation in the project. **I will not be identified in any information regarding my participation in this project.**

Date:.....

Signature of Project Leader (TCD):.....
Date:.....

Please note: For any further questions please contact bellda@tcd.ie or 01-643 4599

Appendix H

Research Ethics <research-ethics@scss.tcd.ie>
to me

Dear Daragh,

Thank you for these revisions. You may now proceed with this study.

We wish you success in your research.

Kind regards

Gillian