

DIGITAL STORYTELLING AND TEENAGE EMOTIONAL
INTELLIGENCE: A SOUTH AFRICAN CASE STUDY

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DECLARATION

I Gaye Pieterse declare that

- 1) The research reported in this dissertation/thesis, except where otherwise indicated, is my original research.
- 2) This dissertation/thesis has not been submitted for any degree or examination at any other university. This dissertation/thesis does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons
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Date: 15 June 2012

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DEDICATION

This is for my 3 daughters, Tamaryn, Hayley and Chantal who have always been my inspiration and joy. Having them and their families in my life eclipse any other achievements I may have made or will ever make.

Also to Pam Askew who has always believed in me and been at my side through all of life's complicated turns, I salute you. Your love of learning has been passed on to me and my offspring!

ABSTRACT

Little guidance is given to teachers in South Africa with regard to integrating technology into the classroom. Yet they are required to teach 21st century skills such as ICT literacy and collaborative problem-solving, as well as soft skills such as empathy, story, design, symphony, play and meaning. Competency in these skills requires high emotional intelligence that has strong links to success in the conceptual age. Digital storytelling has proven to be a successful pedagogic resource with high potential for deep learning, development of 21st century skills and emotional empowerment. As females tend to drop out of school earlier than their male counterparts, the task of this study was therefore to determine whether the making of digital stories fostered trait emotional intelligence amongst female teenagers.

The study was viewed through the lens of the Technological knowledge, Pedagogical knowledge and Content Knowledge (TPCK) model and showed some shortfalls with regard to using it to assess teacher training in the integration of ICT in education.

Different interventions of digital storytelling were used on four Grade 9 and four Grade 10 classes (172 pupils) in an all girls' school with a mixed method being used. The quantitative data was obtained from a repeated self-report test for trait EI (SSEIT) and the qualitative data from a semi-structured questionnaire given to each student. The study took place at a private school in Durban, South Africa and lasted for 9 months (3 terms) from Jan 2011-Aug 2011.

The qualitative data showed that digital storytelling was a unanimously positive experience in two groups only – those who made them and those who watched well-made YouTube movies picked by the educator. The other group who watched the YouTube videos as well as their peers' movies expressed less positive experiences viz. irritation in watching poorly made movies, while the group who had no intervention had no positive comments and expressed anger and annoyance at being excluded. The quantitative data showed no significant statistical changes. This may be due to problems within the testing of SSEIT or that the qualitative data measured aspects of EI which are unrelated to trait EI.

This case study point the way to a more targeted research with regard to using digital storytelling as a means to not only integrate technology into education but also to teach 21st century skills with a strong base in emotional intelligence.

It is recommended that the TPCK model be enlarged to encompass collaborative problem solving, that consideration be given to the use of mixed methods research in education and that digital story telling is incorporated into teacher training.

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Glossary of Terms

Digital story-telling - is an umbrella term which encompasses any combination of a story told together with the use of digital multimedia, such as images, audio and video (Signes, 2008, p.40) and can take the form of a presentation, movie, slide show, online tutorials.

Emotional intelligence – The ability to perceive emotion, integrate emotion to facilitate thought, understand emotions and to regulate emotions to promote personal growth. Emotional intelligence competency – “an ability to recognize, understand, and use emotional information about oneself that leads to or causes effective or superior performance” (Boyatzis, 2008, p.7).

SSEIT - Schutte Self Report Emotional Intelligence Test (SSEIT) which is a 33 item self-report measure of trait emotional intelligence (Schutte *et al.*, 2009).

Trait emotional intelligence – is within the personality domain encompassing “behavioural dispositions and self-perceived abilities and is measured through self-report” (Petrides & Furnham, 2001, p.426).

Ability emotional intelligence – is within the domain of intelligences and is concerned with actual abilities which are “measured with maximum-performance rather than self-report tests” (Petrides & Furnham, 2001, p.426).

Web 1.0 – ‘read-only’ medium where a single software provider controls the web content and there is no collaboration (this is a label given retrospectively, after Web2.0 was coined)

Web 2.0 – It is “a system without an owner, tied together by a set of protocols, open standards and agreements for cooperation” (O’Reilly, 2005, p.5).

TPCK – educational model, with many overlapping areas, for assessing use of Technological knowledge, Pedagogical knowledge, and Content Knowledge in the classroom. The model depicts “the complex roles of, and interplay among, three main components of learning environments: content, pedagogy, and technology and..... has much to offer to discussions of technology integration at multiple levels: theoretical, pedagogical, and methodological” (Koehler *et al.*, 2007, p.1017).

ESI – A term for Emotional and Social Intelligence and described as: “helps to differentiate the behavioural manifestations of the intrapersonal awareness and management of emotions within the self (EI) from the behavioural manifestations of the interpersonal awareness of others’ emotions, needs, thoughts, and perceptions as well as navigate the larger social environment and working with others (SI).” (Boyatzis, 2008, p.194).

CHAPTER 1: INTRODUCTION

The previous age has been dubbed the Information Age and was marked by an economy based on analytical and logical skills which in turn led to an overflow of material abundance, cheap Asian markets and huge automation (Griffin *et al.*, 2012, , Pink, 2005, p.18).

Pink then coined the current age the Conceptual Age which is highlighted by the need for skills such as empathy, story, design, symphony, play, and meaning. Many of these skills require a more holistic education, not only the very analytical one of the Information age, but also the need to be able to experience ‘high touch’ and ‘high concept’ (Pink, 2005, p.2) which is a mark of someone adept at interpersonal relations and with high emotional intelligence. The highest gains were made in jobs which required “people skills”, “emotional intelligence”, “imagination and creativity” (Cox & Alm, 2003). These were the conclusions from a Federal Reserve Bank (Dallas) report on a ten-year economic study of employment data.

The purpose of this case study is to examine whether it is possible to foster trait emotional intelligence using Web 2.0 tools, amongst female teens in a classroom setting in South Africa. The theoretical model used in the study is Technological knowledge, Pedagogical knowledge, and Content Knowledge (TPCK).

The dissertation comprises six chapters:

- Chapter One provides an overview of the issues surrounding the need for these 21st century skills in the South African context and its connection with emotional intelligence. It follows with a description of multiple stressors that teens face in this country and the relationship of emotional intelligence to self-esteem, coping mechanisms, and psychological well-being.
- Chapter Two presents the body of knowledge related to Web 2.0 tools viz. digital storytelling, emotional intelligence, leadership, the need for psychological well-being in general and in the educational setting in particular. Furthermore, the choice of females as the study’s target is discussed. This chapter also outlines the research questions, main objectives and the purpose of this study
- Chapter Three provides a description of the study’s theoretical and methodological framework. The study design, study population, sampling and analytical methods are further explored in this chapter. Final discussion includes information on data

management, mechanisms to assure study quality, credibility and trustworthiness, as well as ethical considerations.

- Chapter Four presents the quantitative and qualitative research findings. Supporting data are drawn directly from the SSEIT as well as the semi-structured questionnaires.
- Chapter Five focuses on the discussion of the study findings, locating these findings in the existing literature, and using this existing body of knowledge to help explain the findings.
- Chapter Six draws conclusions and makes recommendations based on the study findings.

1.1 WEB 2.0 TOOLS & 21ST CENTURY SKILLS

The rapid growth of Web 2.0 tools and increasing globalisation have led to a new competitive landscape in business (Hitt *et al.*, 1998) which, in turn, necessitates new educational strategies to equip the student for the workplace.

Over 250 researchers from The Assessment and Teaching of 21st-Century Skills (ATC21S), from 60 institutions worldwide, categorised 21st century skills internationally into four broad categories:

1. *Ways of Thinking*

- Creativity and innovation
- Critical thinking, problem solving, decision making
- Learning to learn, metacognition

2. *Ways of Working*

- Communication
- Collaboration (teamwork)

3. *Tools for Working*

- Information literacy
- ICT literacy

4. *Living in the World*

- Citizenship – local and global
- Life and career
- Personal and social responsibility – including cultural awareness and competence

The ATC21S project has further collated these conceptual categories into two practical skills. Collaborative problem solving and ICT literacy, which involves learning through digital means, such as social networking (2012).

Educators are faced with the importance of teaching these 21st century skills as well as incorporating Web 2.0 tools in the classroom.

Web 2.0 is commonly associated with web applications that facilitate being a creator, an active participant, and/or a collaborator on the World Wide Web. Unlike Web 1.0, which allowed the public consumer status only, Web 2.0 tools have opened the door for anyone with basic technological skills to share ideas, thoughts, content with the public at large. It is 'a system without an owner, tied together by a set of protocols, open standards and agreements for cooperation' (O'Reilly, 2005, p.5).

Web 2.0 tools, especially social networking sites, have given people the chance to tell their own story and to get instant feedback from friends and the worldwide public at large. YouTube allows one to produce podcasts and post them for public viewing. This has allowed the general public to market themselves in a global way and the success of Justin Bieber (Scot, 2011) and many others has much to do with self-marketing over YouTube (Parvis, 2010). President Obama, Oprah Winfrey and our own (DA) politician, Helen Zille, use social networking sites to communicate globally, for many purposes, including electioneering and information updates (Towner, 2012). YouTube is but one form of digital storytelling. Digital story-telling is an umbrella term which encompasses any combination of a story told together with the use of digital multimedia, such as images, audio and video (Signes, 2008) and can take the form of a presentation, movie, slide show, online tutorials.

Private schools are well placed to incorporate technology into learning as classes are small and technology is available.

There is often considerable resistance from educators who either do not have the time or interest to engage with technology and continue with their time-honoured board and chalk routine. However, the student mind-set is already in the technological age and students enjoy learning through multi-media and Web 2.0 tools. Teens of today belong to the Generation Y era - those born from 1980 to 1994 (McCrindle & Wolfinger, 2009) and are more likely to be familiar with all forms of technology especially Web 2.0 tools. If content is delivered in a technologically interesting way, Gen Y teens will be highly engaged and the necessary skills more easily learned (Spires *et al.*, 2008). Digital story-telling has shown to be a successful method of incorporating technology into lessons whilst engaging students' needs for collaboration and community with Web 2.0 tools, as well as facilitating emotional intelligence and social learning (Robin, 2008). As digital storytelling ranges from the simplest slide show to a more complex interactive movie, teachers of varying technological ability can use this medium. In this way, they can integrate technology and 21st century skills into their specific content knowledge.

1.2 DIGITAL STORYTELLING IN EDUCATION

Technology has been used widely in education but mainly as an instructional device as in Web 1.0 tools. Web 1.0 was described as a ‘read-only’ medium, while Web 2.0 is described as ‘a read/write medium’ (Thompson, 2008, p.1). With the emergence of Web 2.0 tools, research has found that digital collaboration is ‘hooking’ the learners in a way that instructional teaching failed. Robin (2008) found that educator-created digital story-telling was one of the most successful ‘hooks’ but that the greatest benefit came from students creating their own digital stories, either alone or in small groups. In doing so, it exposed them to a variety of 21st century skills defined as:

- “*Digital literacy*—the ability to communicate with an ever-expanding community to discuss issues, gather information, and seek help;
- *Global literacy*—the capacity to read, interpret, respond, and contextualize messages from a global perspective
- *Technology literacy*—the ability to use computers and other technology to improve learning, productivity, and performance;
- *Visual literacy*—the ability to understand, produce, and communicate through visual images;
- *Information literacy*—the ability to find, evaluate, and synthesize information.” (p.224)

Digital story-telling has had a great deal of success in education (Rudnicki et al., 2006) and is understood as a necessary skill in the conceptual age where one needs to put facts into context and to deliver them with “emotional impact” (Pink, 2005, p.103). 21st century skills focus on the ability to communicate, interpret, understand visual images, evaluate information, and present this synthesis visually (and digitally) to a target market in order to get ‘buy-in’. Digital storytelling could be an effective method to incorporate many of these skills while teaching specific content knowledge.

1.3 SOUTH AFRICA

With the rapid advancement of technology and online (global) transactions, the face of business has become a complex competitive environment and beset with many problems such as the inability of many nations to compete with Asian markets. Added to this is the worldwide recession where businesses are closing or downsizing in order to stay afloat. These developments in the business environment place a huge demand on educators to deliver graduates, competent in 21st century skills, who can be effective agents of change in the workplace.

South Africa is no exception and, in the post-apartheid democracy, organizations face innumerable problems such as low productivity due to the HIV/AIDS pandemic. South Africa rates 127 out of 133 countries with regard to the health of the workforce (Schwab, 2009) and AIDS has had a huge impact on the productivity of the workers, with one study showing that HIV/AIDS reduced the GDP by 0,3% in 2001 (Daniel *et al.*, 2004) through employee absenteeism, sickness and death.

South Africa is a young democracy with The South African Governmental White Paper on Welfare officially recognizing ubuntu as the “principle of caring for each other's well-being. . . and a spirit of mutual support. Each individual's humanity is ideally expressed through his or her relationship with others and theirs in turn through recognition of the individual's humanity. Ubuntu means that people are people through other people. U muntu ngumuntu ngabantu. It also acknowledges both the rights and the responsibilities of every citizen in promoting individual and societal well-being ” (1996, p.18, Gazette, 1996). Interestingly, this would fall under Pink’s (2005) ‘high touch’ category that would incorporate skills of empathy and meaning. This also falls under the 21st century skills listed above as “personal & social responsibility – including cultural awareness and competence” (Griffin *et al.*, 2012, p.18). Perhaps we can call Web 2.0 ‘international ubuntu’ as it allows the possible collaboration of millions of users, utilising the power of the web to harness collective intelligence?

1.3.1 TEENS

Although teens in South Africa in 2010 did not personally experience apartheid, they are experiencing its aftermath in problems such as the intersection of high levels of violence (especially against women) and HIV/AIDS, large discrepancies between rich and poor in terms of health and economic status, gender inequality, crime and alcohol abuse (Outwater *et al.*, 2005). They will need technological, leadership skills and resilience in order to operate in a highly competitive world, as well as an understanding of strategies needed to deal with current challenges in the workplace, such as those outlined above. Irrespective of whether they work in this country or not, whether they are leaders or followers, the Conceptual Age requires a more complex (emotionally laden) set of skills as opposed to those needed in the Information Age. Teens are our future workforce yet are facing many challenges both internally (psychologically) and externally (community and environment). There is cause for concern about the welfare of children in Southern Africa due to ‘external’ stressors such as poverty, lack of service delivery, HIV/AIDS related deaths in the family which, over time, lead to a reduced ‘internal’ ability to cope and hence a high psychological vulnerability (Drimie & Casale, 2009).

Crucial skills (for working in the world) include communication, collaboration, and ICT literacy. Generation Y teens are not only conversant with mobile technology, they also base their core values on their peers rather than their parents (McCrinkle, 2003). They are constantly connecting with their peers via Web2.0 (social networking) tools, yet fail, through these channels, to feel connected, understood or respected (McCrinkle, 2003). These Generation Y teens use their peers as benchmarks for decision-making rather than their parents or adults.

This need for teens to connect, collaborate, seek advice, and gain a sense of community through social networking has its price in the peer pressure it engenders. A study on the influence of peer pressure in predicting future behaviours of 13 and 14 year olds found that those who were susceptible to negative peer influence were seen as being less popular, more depressed over time and links were found with higher concurrent levels of substance use, sexual activity, and externalizing behaviour. However, the reverse was also true - there were positive outcomes for those who could influence their peers and, those who took leadership roles in their friendships were less likely to succumb to negative peer pressure or to undertake risky behaviours. Hence, they were less likely to become depressed. Overall, teens who were able to successfully establish autonomy in close friendships with peers appeared far more likely to have positive psychosocial outcomes (Allen *et al.*, 2006). There is a strong relationship between autonomy and high emotional intelligence, both important 21st century skills.

1.3.2 VULNERABILITY OF WOMEN

South Africa is a country with one of the highest HIV/AIDS rates in the world (SANAC, 2009). Gender based violence and gender inequalities have been seen as one of the potent underlying causes for this high HIV/AIDS rate (Jewkes *et al.*, 2003), and much work has been done showing the vulnerability of women in South Africa (Morrell & Jewkes, 2010).

In a study involving peer education for the purposes of sex education in a township school in Johannesburg (Brown, 2005), it was found that when peer education was conducted in a co-educational setting in order to explore gender inequalities, discussion was dominated by the males and the females' contributions were minimized. The research found that the relation between the peer educators was a microcosm of the gender relations in real life (Campbell & MacPhail, 2002).

Another study in KwaZulu-Natal showed that female teens felt powerless in heterosexual relationships and obeyed the wishes of the male partner rather than object (Varga, 1997). Based on this background research, a girls' only school was chosen for this case study so that girls would be able to discuss issues freely without "feeling bullied if they challenged their male

colleagues” (Campbell & MacPhail, 2002, p.18). Peer group norms and social identities are shaped by group discussions and collective negotiations and, being able to do so in a female only group, may enable the girls to take the time to redefine their identities without a challenging (male) perspective. When they next encounter the male perspective they (hopefully) would have created the confidence to understand and challenge the way females construct their identities, and thus be empowered to reject the male dominant behaviours which often help define their identities (Campbell & MacPhail, 2002).

The Conceptual Age requires a far more emotionally laden set of skills and the need for teens to establish these skills in a non-threatening environment is crucial. 21st century skills include the need to solve problems collaboratively. This requires a strong sense of autonomy and identity that, in turn, is found in people with a high level of emotional intelligence. This case study therefore focuses on digital storytelling and measures whether this activity fosters EI.

1.4 EMOTIONAL INTELLIGENCE

Whole brain learning is required for the next era in education (Pink, 2005). There is a need to develop standards for affective development, as well as leadership skills and the ability to communicate (Huitt, 2007). The role of educators is not only to facilitate learning but also to teach relevant skills so that they can operate in a competitive world where resilience and interpersonal skills are highly desirable. Not only is it a much needed attribute in the Conceptual Age, high emotional intelligence is a predictor of academic achievement, correlates with better family and social relationships at work, improved psychological well-being and is a predictor of workplace performance (Mayer *et al.*, 2008b).

Research in South Africa shows the relationship between effective leadership, productivity and emotional intelligence in a parastatal (Hayward, 2005) and it was advocated that a more democratic leadership, (transformational leadership) was needed rather than the prevailing authoritarian one, (transactional leadership). This transformational leadership is one of inspiration, communication of a vision and high motivation for employees to achieve greatness. It was seen to empower employees and increase productivity and was the kind of innovative leadership style necessary for the current business environment. Research shows a positive relationship between high emotional intelligence and transformational leadership (Hayward, 2005), positive social traits (George, 2000), academic success (Barchard, 2003), reduced deviant behaviour, higher reasoning ability, and better conflict resolution (Salovey *et al.*, 2002). It is also a predictor of workplace performance (Mayer *et al.*, 2008a) and autonomy in individuals (Brackett & Mayer, 2003). In a country with huge health and social problems, teens need to be

able to exercise autonomy in their decision-making, using informed sources rather than peer advice.

Research has also shown that EI in general was significantly related to social network quality and size (DeBusk, 2008) and trait EI, in particular, was significantly related to stress and self-esteem (Gohm *et al.*, 2005). The relationship between trait EI and interpersonal relationships was examined by (Austin *et al.*, 2004, , Schutte *et al.*, 2001) and it was found that trait EI related to many aspects of social relationships such as social skills, cooperation, and experience of affection.

1.5 SUMMARY

The skills needed in the conceptual age were described. These skills were shown to be based in emotional intelligence and the use of technological tools, viz. Web 2.0. Pertinent aspects of the South African business background were described and the need for teachers to prepare their students for the job market was emphasised. A relationship between success (in school and the business world) and emotional intelligence was made. The emotional needs of Gen Y teens were linked to their constant need to collaborate, especially on social networking sites and the peer pressure that it engenders. Gen Y teens were also seen to base their core values on their peers rather than their parents but, despite accessing Web 2.0 tools they still fail to feel part of a community. Interpersonal relationships were found to be related to trait EI which is an aspect of emotional intelligence. Female teens were highlighted as being vulnerable in a country with high gender inequality, thus needing a non-hostile environment in order to foster a sense of identity and autonomy. Digital storytelling was described as being a powerful tool to combine both technological learning with the fostering of emotional intelligence and social skills, all necessary 21st century skills. Private schools were seen as being well equipped to use digital storytelling as a learning medium. The focus of this study therefore incorporates technology in education, (making of digital stories), emotional intelligence (trait EI), and Gen Y female teens in South Africa.

1.6 STATEMENT OF THE PROBLEM

The problem faced by female teenagers of today is that of succumbing to peer pressure which potentially relates to their levels of emotional intelligence. The object of the research is thus to study groups of female teenagers in order to report the impact of digital story-telling on trait EI.

1.6.1 RESEARCH OBJECTIVES

- To determine whether trait emotional intelligence can be fostered in adolescent girls who use Web 2.0 tools to create stories in digital format than their counterparts that do not do so.

- To determine whether trait emotional intelligence can be fostered in adolescent girls who use Web 2.0 tools to watch peers' digital stories than their counterparts that do not do so.
- To determine whether trait emotional intelligence can be fostered in adolescent girls who use Web 2.0 tools to watch public digital stories than their counterparts that do not do so.

1.6.2 PURPOSE OF THE RESEARCH

Examining the problem from a technological, pedagogical and content knowledge (TPCK) framework, the task of this research is to explore the usage of Web 2.0 tools and digital story-telling in a classroom setting in South Africa.

The specific objective of the study is to determine whether digital story-telling can foster trait emotional intelligence.

Results will show whether technological intervention, in the form of Web 2.0 tools and digital storytelling, fosters trait EI in teens. Fostering EI has traditionally been in the realm of psychology and has, in the past, utilised various psychological techniques via human elements (the psychologist, parent, educator or significant adult giving positive self-regard to the child). If this research, on whether the use of technological tools fosters EI, shows a positive outcome, it would suggest that the use of technological tools and more specifically, digital storytelling, in the classroom had positive side effects.

More research in this area would clarify which other technological tools have the same effect and perhaps mark a pedagogical shift in the mind-set of educators. It may also cast some light on the construct, trait EI, which is still under discussion as a separate construct in the realm of general EI. It may also provide a means to test the concept of TPCK as a model for the use of technology in education.

CHAPTER 2: LITERATURE REVIEW

The aim of the literature review was to gain a broad overview of the research that has already been done with regard to education and Web 2.0 tools, digital storytelling, and trait EI. Another pertinent area of interest was explored, with reference to Gen Y students and meaningful learning.

2.1 INTRODUCTION

Technology, especially in the field of instructional design, has progressed swiftly since the 1940s (Reiser, 2001), and B.F. Skinner's article called *The Science of Learning and the Art of Teaching* began "what might be called a minor revolution in the field of education" (Reiser, 2001, p.59). Research in this field of instructional design, only 70 years later, involves exploring whether it is possible to quantify human behaviour through sophisticated computer technology, using readings taken from electrode caps worn while the participant enacts some behaviour (Viterbi, 2010). Psychology and technology students collaborate in a field that could open doors to both fields.

This research is a similar form of collaboration: using technological tools to foster a psychological concept as well as giving some insights as to whether Web 2.0 tools can be used effectively as a collaborative and social learning tool in the classroom. The results could shed light on all three fields (technology, psychology, and education) and may highlight the power of technology to 'take on' tasks that were formerly the domain of human-psychological agents.

2.2 WEB 2.0 TOOLS

The first Web 2.0 conference was held in 2004 with attempts to define exactly what was meant by the term (O'Reilly, 2005). Two important findings arose from this conference –

1. that the web is a powerful platform which can be utilized to harness collective intelligence,
2. and that users are co-developers through wikis and blogs and should be trusted to play that role (O'Reilly, 2005).

Social networking sites such as MySpace.com and Facebook.com have allowed individuals to connect, collaborate, and exchange views thus marking Web 2.0 as a social phenomenon.

2.2.1 WEB 2.0 AND EDUCATION

Technology has been used widely in education but mainly as an instructional device as in Web 1.0 tools. Web 1.0 was described as a 'read-only' medium, while Web 2.0 is described as 'a read/write medium' (Thompson, 2008, p.1). Web 2.0 tools enabled educators and researchers to explore new ways of learning. Online help and collaboration freed the teacher/facilitator from the task of answering routine questions and allowed them to focus on the facilitation of learning through deep questioning, challenging preconceived ideas, reviewing and entering the discussion as a peer. Thus the facilitators become co-learners – an important skill for leaders and a good role model for students (Chapman *et al.*, 2005).

The models of online learning that were developed attempted to define technology-assisted educational experiences. One of these describes how meaningful learning happens when it is embedded in a 'Community of Inquiry' (Garrison *et al.*, 2000). This assumes that learning occurs when there is an interaction of three essential elements – cognitive presence (the ability of the student to construct meaning), teaching presence (content knowledge and pedagogical skills) and social presence (the interaction which binds the other two and maintains interest) (Garrison *et al.*, 2000). Another five stage model makes the assumption that learning is a complex scaffolding of cognitive, motivational, affective and social processes which culminate in the student taking responsibility for their own learning and being able to reflect on the process (Salmon, 2002).

2.2.2 SOUTH AFRICA

South African research in online education showed that although technology could not replace lecturers, the creation of a social presence actually encouraged students and enhanced the learning process, forming a foundation for teaching and learning (Greyling & Wentzel, 2007).

Those in Higher Education did much of the research in this field of integrating technology into education in South Africa. The use of Facebook and other social networking tools in education were explored at the University of Cape Town. Although it was found to be an excellent academic tool to connect with students, it was also suggested that varying ICT competency levels amongst lecturers, as well as lack of resources in many South African higher education institutions posed a challenge in terms of enabling a more widespread computer-based education (Bosch, 2009).

With regard to schools found in South Africa, a study involving the use of ICT of 267 Grade 8 science teachers found that ICT was used effectively as a teaching and learning device when available. However, the most effective use of technology was found when the teacher was

inspired to drive the project in order to foster 21st century skills i.e. the teacher made the difference rather than the availability of ICT tools. The study also showed the wide gap between government policies on e-education and actual implementation at grass roots level (Draper, 2010).

The challenges in South African schools with regard to accessibility of ICT tools and especially Web 2.0 tools are substantial. It was found that even in government-funded computer rooms, access was limited and ICT competencies were poor. Furthermore, when teachers were competent and enthusiastic about integrating ICT into their lessons, they were further frustrated by an unreliable internet access (Draper, 2010).

The government states that “Every South African learner in the general and further education and training bands will be ICT capable (that is, use ICTs confidently and creatively to help develop the skills and knowledge they need to achieve personal goals and to be full participants in the global community) by 2013” (Barchard, 2003). However, the reality is that there is little integration in lessons in South African classrooms even when computers are available (Wilson-Strydom *et al.*, 2005).

2.3 STORYTELLING

Storytelling is valued in the South African context, where importance is still attached to the oral tradition. The Truth and Reconciliation Commission paid heed to the healing power of storytelling and endeavoured to capture the myths, perceptions and experiences of both victims and perpetrators in the apartheid era so as to bring closure for many (Sanders, 2000). Narrative has been the preferential method used in research with people with HIV/AIDS, and in telling women’s stories, as it gives voice to those who may have been marginalised through illness, events, race, religion or gender (Soskolne, 2003). Narrative psychology is concerned with people telling their stories in order to understand the meaning of their lives and their identity, as it constantly evolves (Denzin, 2000). Female teenagers in South Africa are not only facing the aftermath of apartheid and its concomitant challenges but are also facing gender inequality, especially with regard to sexual behaviour. There is a high incidence of teenage pregnancy in the country and one in five pregnant teenagers is infected with HIV. These were more likely to have experienced physical violence as well as forced sexual initiation (Jewkes *et al.*, 2001). Telling one’s story is a way in which Gen Y teenagers, who rely on peers’ rather than parents’ advice and who still fail to feel connected, understood or respected (McCrinkle, 2003), can redefine their identities and make sense of their lives, perhaps gaining added perspective through the process.

2.3.1 WEB 2.0 STORYTELLING

The term Web 2.0 storytelling combines the world of Web 2.0 with the narrative one. Web 2.0 projects and platforms are defined as a distinct part of the web due to their micro content and social media aspects. Micro content refers to the small chunks of self-contained content used (as in blogs, wikis, digital stories and podcasts) and social media refers to the ability for anyone to comment, collaborate or participate in a project (Alexander & Levine, 2008). Adding storytelling to Web 2.0 tools allows anyone to post fictional and non-fictional stories (or a mixture of the two) for online viewers to comment on and/or collaborate so that dialogue forms part of the exercise.

Digital storytelling by video arose in the 1970s, long before Web 2.0 was created, and proved to be a powerful form of expression by both creator and audience, allowing individuals and communities to build their own knowledge (Alexander & Levine, 2008). Many educators utilise digital stories in the form of tutorials, podcasts, instant footage of real-life events and lessons from other teachers as in Web 1.0 tools. However, with Web 2.0 tools, these types of digital stories have evolved into an educational tool that not only allows personal storytelling but also provides the forum for collaboration and feedback.

In a country where fixed landlines are often unavailable in rural areas, cell phones are the common method of communication and for uploading images and videos. In a study in the Eastern Cape where poverty is rife and many school have no electricity, the use of cell phones for educational purposes was enthusiastically embraced even when used for the first time (Traxler & Leach, 2006). This opens the way for schools in developing contexts, where access to technology is poor, to engage with Web 2.0 tools.

Digital stories can therefore be captured over cell phones but also with cameras or webcams and edited in easily available software such as iMovie, Movie Maker, Photo story, PowerPoint to name a few. With Web 2.0 tools, these stories can be shared over the Internet via YouTube, Vimeo, podcasts, and other electronic distribution systems. This social networking aspect of Web 2.0, which allows comments and feedback from viewers, contributes to a global commentary or dialogue, which, in essence, becomes a collaborative process. Most Gen Y teenagers are conversant with technology, especially cell phones, and value the collaborative and social networking process. It also provides a forum for commentators to refine their skills of assessment, communication, and constructive criticism and to understand others' cultures and thinking processes.

Dawkins (2008) was involved with creating digital story-telling workshops. One of the workshops was held in Vietnam and the participants were questioned as to the changes the workshop had had in their lives. A key element, identified through these interviews, was the empowerment of participants. Five of the participants stated their ability to communicate with others and their self-confidence had improved. For example, when project participant Nguyen Ha Thu was asked about the impact of the project on her life, she had this to say, ‘There are many changes, most of which are positive. It made me more self-confident, and I understand myself and my friends better...when I was making the film, I discovered a capacity within myself that I didn’t know I had before, so I feel more confident.’ (Dawkins, 2008, p.2). These participants clearly had a positive experience and were enriched and empowered through the intervention of digital storytelling.

Robin (2008), who advocates using digital story-telling as a means for teachers to incorporate technology into the classroom, expresses the changes that are evident with Web 2.0 tools, “They are being customized and personalized in dynamic, and often unpredictable, ways by their users, and this personalization is having a profound impact on how people, especially young people, are conducting business, finding entertainment, and participating in social relationships” (Robin, 2008, p.223).

He shows how digital storytelling combines many aspects of technology and education as shown in the diagram below:



Figure 2.1: The convergence of digital storytelling in education (Robin, 2008, p.223).

Digital storytelling has already proven to be an effective way in which teachers can integrate technology into their lessons, using the well-known story-telling mode with the new technology (Signes, 2008). This has also been successfully demonstrated in developing countries where technological resources are minimal (Sadik, 2008). Robin (2008) advocates the use of the TPCK model (which is used as a lens for this case study) to better understand how digital story-telling can be used in education.

Sharing and getting feedback has been made simple by various sites such as YouTube (<http://www.youtube.com/>). Another site, VoiceThread (<http://www.voicethread.com/>) allows one to upload and share audio and images. Once published, commentary can be added by the public, via text or audio, thus creating a collaborative effort. In fact there are so many ways in which to tell and share stories digitally that there is now a wiki called '50 Web 2.0 ways to tell a story' (<http://50ways.wikispaces.com/>) where all content is open, free and available for re-editing – true collaboration (Alexander & Levine, 2008).

Digital storytelling, in its widest sense, is a way to reach Gen Y learners who have always lived in a technological world. Whether creating their own content, watching content already created and/or being able to comment on content, the format is engaging and delivers in a way that hooks their attention and encourages deep learning. Digital storytelling was found to facilitate the merging of four learning strategies: learner engagement, reflection for deep learning, project based learning, and the effective integration of technology into instruction (Barrett, 2006).

2.4 EMOTIONAL INTELLIGENCE

The concept of emotional intelligence has previously been understood to be in the domain of psychology and education (Mayer & Cobb, 2000), and interventions were more in line with Web 1.0 tools e.g. the educator or parent (authority) praises the child for work done which was a one-way experience.

With the advent of Web 2.0 tools and the move to semantic (social) Web-based teaching and learning (Devedzic, 2004), where the 'consumer' is also a 'producer', the concept of emotional intelligence has broadened into 'Emotional and Social intelligence' (ESI). The need to foster it has been embraced by business organisations for the purposes of building leadership and management strengths (Seal *et al.*, 2006).

Boyatzis & Goleman (2006) reclassified EI competencies and clusters into only two aspects: emotional intelligence (EI) and social intelligence (SI). Intrapersonal clusters (self-awareness and self-management) were named emotional intelligence (EI) competencies and interpersonal clusters (social awareness and relationship management) were named social intelligence (SI)

competencies. The new term, emotional and social intelligence (ESI) “helps to differentiate the behavioural manifestations of the intrapersonal awareness and management of emotions within the self (EI) from the behavioural manifestations of the interpersonal awareness of others’ emotions, needs, thoughts, and perceptions as well as navigate the larger social environment and working with others (SI).” (Seal *et al.*, 2006, p.194).

This study will work with EI – the management of emotions within self - as positive relationships were found to exist between the ability to manage emotions and the quality of social interactions (Lopes *et al.*, 2004) which is the focus of this study with teens.

Emotional intelligence was documented in the early 1990s (Mayer & Salovey, 1993) and was seen as the ability to use one’s emotions in an adaptive and functional way to direct behaviour and decision-making. Positive correlations were found between high emotional intelligence and positive social traits like leadership (George, 2000), academic success (Barchard, 2003), reduced deviant behaviour, higher reasoning ability and better conflict resolution (Salovey *et al.*, 2002). “EI is a predictor of significant outcomes across diverse samples in a number of real-world domains. It predicts social relations, workplace performance, and mental and physical well-being” (Mayer *et al.*, 2007, p.527). It therefore became highly desirable not only to measure emotional intelligence (Mayer *et al.*, 1999) but to foster it as well.

The fostering of emotional intelligence in a country with complex, multiple stressors is a way in which pernicious cycles of vulnerability, especially amongst females, could be positively impacted. With the proliferation of online chatting and the bombardment of technological tools that allow viewers to watch broadcasts almost immediately after an event, the need for fostering emotional intelligence has never been more urgent. Teens of today chat copiously online and watch mobile footage of events happening around them daily that are often shocking and traumatic. Their exposure to negative thoughts and ideas is greater than ever before and their need to process what they are exposed to, with their friends rather than the adults in their lives, raises an important question about whether they have the emotional intelligence to deal with complex events. When teenagers received positive feedback on the social networking sites it increased their social self-esteem and well-being whereas the exact opposite effect was seen when negative feed-back was received (Valkenburg *et al.*, 2006). In addition, research suggests that frequent users of the internet, for the purposes of socialising, tend to be lonely and to have deviant values. They also seem to have low emotional and social skills (Engelberg & Sjoberg, 2004) thus showing a relationship between emotional intelligence, especially that of emotional self-efficacy, and social networking.

Later research has documented a difference between two types of emotional intelligence viz. trait EI (emotional self-efficacy) and ability EI (cognitive-emotional ability) and different tests have been devised to test each separately (Perez *et al.*, 2005). However, there is some discrepancy with regard to this segmentation of EI.

Palmer *et al* (2003), found that the correlation between trait EI (self-reported perception of emotional efficacy) and ability EI (one's actual cognitive ability to perceive, use, understand and manage emotions) showed a 15% common variance but that this still needed more stringent research to control for specific and error variance. Trait EI is strongly related to personality whereas ability EI is has stronger relationships to traditional intelligence (IQ). They suggest, in their study on comparing EI models and tests, that the demarcation between trait EI and ability EI as two distinct constructs is premature and that it would be wise to conceptualise EI as a 'unifactorial' construct. They defined EI as "a conceptually related set of abilities to do with one's own and others emotions, specifically; the ability to perceive and express one's own emotions; the ability to perceive and understand the emotions of others; the ability to allow emotions to direct one's reasoning; the ability to manage one's own emotions; and the ability to manage the emotions of others" (Palmer *et al.*, p.178). However, there is considerable reliability with trait EI tests and they have been used extensively within stringent research models as explained later on in this chapter. Therefore, trait EI will be utilised as a measure in this study.

2.4.1 CRITICISMS OF EI

There has been a great deal of criticism and controversy around the construct emotional intelligence and especially as a predictor of work success. It has become popular amongst entrepreneurs who use it commercially to market leadership and workplace training (Landy, 2005). Although Landy is critical of the popularist standing of EI, he does concede that it may have merit. However, he advocates a more rigorous application of the scientific method when dealing with the construct. He also suggests that , in future EI research, more thought should go into the choosing of the dependent variables so as to examine for overlap with other measures of personality attributes (Landy, 2005).

Further criticism is levelled at EI as failing to meet the requirements needed for it to be considered an intelligence and that when EI is used commercially, linking it to leadership ability, IQ is left out of the equation (Locke, 2005). Locke also criticises the broad categories of EI as well as the ever-changing definition of the construct. Ciarrochi *et al* (2000) critically evaluated the construct EI and found that it was a distinct construct. It was found to be unrelated to IQ, but that IQ may be an important factor in understanding EI. Their research on one of the

measures of EI (MEIS), found support for the reliability and validity of the measure, despite some shortfalls, and that EI showed promise in predicting certain outcomes. However, they cautioned that more research was needed. Even Mayer *et al* (2003) who have been very successful at measuring EI state that ‘the applied use of EI tests must proceed with great caution’ (p. 104). The general consensus amongst those critiquing the construct is that much work remains to be done to test the viability of the concept of EI as well as the construct validity of EI measures (Spector, 2005).

2.4.2 TRAIT EI

Trait EI refers to a “constellation of behavioral dispositions and self-perceptions concerning one’s ability to recognize, process, and utilize emotion-laden information” (Petrides *et al.*, 2004, p.278). These are *self-perceived* social and personal intelligences and include personality factors such as ‘empathy, impulsivity, and assertiveness’ (Petrides *et al.*, 2004). Trait EI tests are quantitative in nature but based on self-reports; therefore, one is measuring the individual’s *perception* of their abilities, which may or may not be actually true. Ability EI tests record the *actual* ability of the individual to ‘recognize, process, and utilize emotion-laden information’ (Petrides *et al.*, 2004, p.278).

Trait EI is in the realm of personality traits (is a person’s self-perception of their emotional abilities) while ability EI is indicative of one’s cognitive ability (is a person’s actual ability to process information of an emotional nature). In their research on the impact of trait EI on academic performance and deviant behaviour in school, (Petrides *et al.*, 2004) report that “the importance of research in this area is not to be judged according to the resultant effect sizes, but rather according to the extent to which it elucidates the nature of the construct” and that “the usefulness of trait EI is to be judged primarily on the basis of what it explains and not on the basis of what it predicts” (Petrides *et al.*, 2004, p.289). Despite this statement, trait EI has been significantly related to stress and self- esteem (Gohm *et al.*, 2005) and many aspects of social relationships such as social skills, cooperation, and experience of affection (Schutte *et al.*, 2001).

Using trait EI tests in this research may clarify another aspect of the construct itself and whether it is possible to foster a personality construct? Will any positive or negative experiences from the intervention (digital story-telling) show as changes in trait EI? Current literature on trait EI suggests that “personality traits are relatively stable beyond a certain age and designing interventions with a view to making positive changes would be questionable” (Pool & Qualter, 2011, p.307).

It is known that trait EI can be fostered as there was a significant change amongst young adults after intensive training (Nelis *et al.*, 2009) and the changes persisted after time. However, the training in that particular research was specifically related to emotional intelligence, inclusive of trait EI. The participants were taught how to perceive emotions and process them and were tested three times in order to analyse for changes. This research suggested that with these traits being relatively stable, “it is possible that people would come back to their “baseline” after a while if the competences are not practiced” (Nelis *et al.*, 2009, p.40).

Cherniss (2010) stresses the importance of distinguishing between emotional intelligence, which refers to “basic abilities of emotion recognition, reasoning, and regulation” and emotional or social competencies (ESC) (2010, p.123). He suggests that future research should focus on developing these competencies, which are related to EI, rather than focussing on EI alone. The above research by Nelis *et al.*, (2009) appears to have trained competencies rather than fundamentally changed trait EI.

Twin studies have shown a genetic link between EI and pathological personality traits like narcissism (Vernon *et al.*, 2008). High trait EI was positively associated with subclinical narcissism (Petrides *et al.*, 2010b) in line with the tendency of those with high trait EI to show hubristic behaviour (Petrides, 2009, , Petrides *et al.*, 2010a). This implies that high trait EI is not always desirable and has some undesirable effects in certain contexts (Sevdalis *et al.*, 2007). These thorny issues are evident of the confusion around models of EI, trait EI, their definitions and measurements.

There are few empirical studies demonstrating change in trait EI after an intervention or training. Research with university students showed that a teaching intervention did increase emotional intelligence and emotional self-efficacy (ESE) (Pool & Qualter, 2011). Although emotional self-efficacy (ESE) has been seen as another label for trait EI, Kirk *et al.*,(2008) argue that the two concepts are not related and should not be seen as identical.

In terms of EI measurement, the best success has been found in relation to trait EI (Perez *et al.*, 2005, , Tett *et al.*, 2005). Trait EI is measured via self-reports and can be described in three broad categories —Self-Orientation, Other Orientation, and Emotional Sharing (Tett *et al.*, 2005). These emotional dimensions would be closely involved when producing and watching personal stories with one’s peers and working in groups. In addition, research suggests that trait EI is relevant to scholastic achievement and deviant behaviour at school, especially for vulnerable teens. Including trait EI measures in intervention programmes and assessments would produce useful data for research on policies regarding adolescent behaviour (Petrides *et al.*, 2004).

For these reasons, this study will be using the measurement of trait EI through self-reports. As there are so many questions surrounding trait EI, a qualitative semi-structured questionnaire was also added in order to compare and further understand the quantitative data.

TESTS FOR TRAIT EI

There are many measures for Trait EI, as reported by Perez et al (2005), such as Trait MetaMood Scale (TMMS; Salovey & Grewel, 2005), BarOn Emotional Quotient Inventory (EQ-i; Bar-On, 2004), the Schutte Emotional Intelligence Scale (SEIS; Schutte *et al.*, 1998) as well as many others. They all have limitations; even the EQ-i, which is one of the most widely used measures of trait EI in the literature.

The SSEIT, which consists of 33 items described on a 5-point Likert scale, has been “used extensively in the literature and can be employed as a short measure of global trait EI” (Perez *et al.*, 2005, p.129) and will be the Trait EI test used in this research. Alston (2009) found, in using the SSEIT, that there was a positive relationship between the “appraisal of emotion in self or others and leadership” (p.72).

Brackett & Mayer (2003) found that scores on the Assessing Emotions Scale were correlated with scores on the EQ-i, as well as with the MSCEIT, which is a performance test of emotional intelligence. It has been used with success on Australian, Canadian and Malaysian teens and has a two-week test-retest reliability of .78 for total scale scores (Austin *et al.*, 2004).

However, there has been no research on the test being repeated four times as in this case study and it is unknown whether this would have any bearing on the final outcome although all groups, including the control group, will be tested at similar intervals throughout the study. As the results will be compared to the base line test, it is assumed that any variables will be similar for all groups.

Although there is always the danger that respondents may reply in a socially acceptable manner rather than truthfully, the tests in this research will be done confidentially, thus removing any incentive for ‘manufactured’ answers.

The 33-item SSEIT covers four factors identified by (Petrides & Furnham, 2000), (Ciarrochi *et al.*, 2001) and (Austin *et al.*, 2004, , Saklofske *et al.*, 2003) and consist of:

- Perception of Emotion (items 5, 9, 15, 18, 19, 22, 25, 29, 32, 33),

- Managing Own Emotions (items 2, 3, 10, 12, 14, 21, 23, 28, 31),
- Managing Others' Emotions (items 1, 4, 11, 13, 16, 24, 26, 30), and
- Utilization of Emotion (items 6, 7, 8, 17, 20, and 27).

There has been some discrepancy with regard to the load on these factors in later research and has led some researchers to build on the SSEIT to create new tests. In addition, there is acknowledgment that, although available EI tests measure either ability or trait EI, it may be that there are more dimensions to emotional intelligence than just these two. Clearly, this is quite a young field of research and as such, this research limits its study to measuring trait emotional intelligence.

2.5 INTERPERSONAL CONNECTIONS

The results of a study by (Petrides *et al.*, 2006) show strong links between trait EI and friendship and the concomitant formation of a social network from early on in life. Childhood difficulties such as peer rejection, aggression and withdrawal, can cause problems in adjusting later on in life (Pellegrini & Blatchford, 2000). Friends are vitally important as a means to gain information and are also used as an emotional resource (Blatchford, 1996) and those with a positive emotional outlook experienced “more favorable perceptions and evaluations,are more prone to remember positive information,are more self-assured... are more likely to take credit for successes and avoid blame for failures, and they are more helpful to others.” (George, 2000, p.1029).

In the above study (Petrides *et al.*, 2006), students high trait EI scores were found by their educators to be more co-operative, better leaders and less likely to be aggressive, disruptive or dependent. Early success and good relations with educators and students are experiences that form the cornerstone of a sense of psychological well-being, especially as Gen Y teens enjoy a high level of interpersonal connections and spend a great amount of time collaborating and communicating with each other. Using Web 2.0 tools (through creating digital stories) is using the very medium that teens of today use to collaborate in all spheres of life.

Today's teens belong to the Generation Y era - those born from 1980 to 1994 (McCrindle & Wolfinger, 2009), and their “familiarity with the web as a source of information and their preference to be constantly and immediately in touch with their peers through ICTs distinguishes them from previous generations of students” (Skene *et al.*, 2007, p.1). South African teens are no exception and many spend a great deal of time on MixIt, Facebook, MySpace, Twitter, blogs, cellular phones, e-mail and YouTube. Some of their technological use is for scholarly research but most often, teens use technology as a way of communicating and

connecting socially. Even teens in rural areas of South Africa, who have no access to computers, use cell phones as a means of communication with their social network. A study by Brown (2005), in Pretoria, found that m-learning in Africa reached more people than online learning, due to the proliferation of mobile networks.

Within the realm of psychology, Bers (2007) shows how the computer literacy world, which developed 'instrumental skills', differed markedly from the 'technological fluency movement' which focuses on "enabling individuals to express themselves creatively in technology" and emphasizes the "importance of teaching how to learn and think with technology" (p.5-6). The idea is one of literacy – that people learn to be 'technologically fluent' and use it as effortlessly to express themselves, as one would use a language. By using technology "creatively and in personally meaningful ways" (p.6) it was envisioned that, with the constant use of technology, children would not only become computer literate but also start to develop new ways to think about themselves, others and their relationships with others. An increased awareness of self (and one's ability to manage emotions) as well as the ability to relate to others is an indication of high emotional intelligence (Lopes et al., 2004).

2.6 COLLABORATION AND COMMUNITY

Teens from this generation also have an increased likelihood for basing their decision-making activities on peer responses or influences. The strongest determinant for making a decision rests in the experiences of a teenager's core group of close friends. Decision-making activities are rooted in community values and consensus. Generation Y want "community: to be understood, accepted, respected, and included" but "they often fail to experience real unconditional love, and connection" with their friends (McCrinkle, 2003, p.3). This means that they spend a great amount of time using technology and accessing positive as well as negative material, and they rely on their friends for feedback and making decisions. Yet they still fail to experience a real connection with their friends and do not feel understood or have a sense of community – the thing they desire the most. These feelings of being connected through collaboration and feeling part of a community are core experiences in a person with high emotional intelligence (McCrinkle, 2003).

As teens have lost their traditional communities, would it be possible to foster emotional intelligence through the creation of a virtual community of Web2.0 digital stories? Bers (2007) utilised this idea by creating virtual interactive storytelling environments for children to explore their identities and issues of morality as well as virtual cities where medical patients (children)

could interact with others who were experiencing the same medical conditions, so that a sense of community was created for that particular group.

The use of digital story-telling could serve, not only as a virtual community to foster emotional intelligence, a sense of belonging, unconditional love and connection, but would be one which was created, produced and presented by the teens themselves in their own groups. This idea of creating one's own base of knowledge is found in theories of social constructionism, which trace how phenomena are developed relative to social contexts, and is seen as an "artefact of communal interchange" (Gergen, 1985, p.266). Research shows that disclosing traumatic incidences in one's life by writing and talking about it, reduced the student's stress levels as well as caused an increase in marks and overall health (Pennebaker, 1997). If digital stories were used as a virtual community with the teens creating their own stories for their peers to view, would the same positive effects (as in the written word) be found? In addition, being 'double-sided' as it were, would the effects be found in both the producer and the viewer?

Social constructivism views learners as multidimensional individuals, all with different worldviews, backgrounds and with unique needs and learning styles. Constructionism builds on this and claims that learners learn best when making their own material and is even more effective when the learner experiences the product as meaningful (Papert & Harel, 1991). Thus, within the broad definition of a virtual community, the various groups tell their own stories by constructing a meaningful movie to share with other teens in their community/class. This could help them to explore moral values and identities within a safe environment. Qualitative and quantitative data will be used to determine whether the group experience was a positive one.

2.7 SUMMARY

The impact of Web 2.0 tools on education was discussed with reference to the narrative tradition, especially digital storytelling. Attention was drawn to the importance of digital storytelling as a way to integrate technology into the classroom but, more importantly, as a means for Gen Y teens to explore their identities and communicate their experiences or ideas with other teens. The relationship between social networks and emotional intelligence was discussed and high emotional intelligence was seen to correlate positively with positive social traits and academic success. Trait EI, as separate construct from ability EI, was discussed as a valid means of measuring emotional self-efficacy that is linked to leadership and many aspects of social relationships. The SSEIT was discussed as being the trait EI test used in this case study. Mention was made of controversies and criticism surrounding the construct EI and trait EI. Finally, the importance of Web 2.0 tools such as YouTube and VoiceThread was discussed.

These social networking tools allowed a broader collaboration with peers as well as the creation of a virtual community where teens could have a sense of community and a safe environment in which to explore their moral values and identities.

CHAPTER 3: METHODOLOGY

This chapter presents the conceptual and analytical framework underlying the research methodology. The study design is then described, followed by a report of the data collection methods and tools. The final sections include a summary of the above.

3.1 CONCEPTUAL FRAMEWORK

The rapid advancement in the domains of science and information communication technology (ICT) has impacted on all aspects of life, including education. Keeping abreast of new knowledge and new applications as well as teaching in innovative ways (to inspire Gen Y students) is a daunting task for most educators. Not only is there a need to learn how to use technology but also a greater need in understanding how to integrate it into the subject matter. Unfortunately, there is a lack of theoretical and conceptual frameworks to underpin research in this area (Angeli & Valanides, 2008). The conceptual theory of TPCK has evolved in response to this need but with 89 different definitions of the central construct, it still needs more research in order for it to mature as a theoretical model (Graham, 2011).

A later development, based on the TPCK model, ICT-TPCK, was conceptualised as being a separate strand of TPCK which restricted the technology aspect of TPCK to only ICT (as opposed to all other forms of technology as in the TPCK model). It also adds two additional elements viz. the knowledge of students as well as the knowledge of the learning context (Angeli & Valanides, 2008). A developmental model, based on the above, called ICTeD will also be discussed.

All three models, TPCK, ICT-TPCK and ICTeD, will be discussed as the lens through which to view this case study as they all offer insights into the integration of technology in education as well as the teaching of 21st century skills. It will be seen that the ICT-TPCK model is the best fit for this particular study.

3.1.1 TPCK

Shulman (1986) originally coined the term PCK (pedagogy and content knowledge) to describe the specific combination of pedagogical skills and content matter that is used to facilitate

student learning. With knowledge of the students' needs and abilities, the educator presents content matter in a way that facilitates learning.

Grossman (1990) added another dimension to this concept- the educator's understanding and beliefs about the purpose of the topic being taught. Another variation to Shulman's PCK was that of PCKg (Pedagogical Content Knowing). This gave some importance to the context or situation in which teaching happens and also to the importance of the role that educators' understanding of their students plays in the learning process (Cochran *et al.*, 1993).

PCK formed the basis of Mishra and Koehler's (2006) TPACK concept (technology, pedagogy, and content knowledge) as a framework for educators integrating technology into their teaching. In a later paper, they show a diagrammatic formulation of the theory:

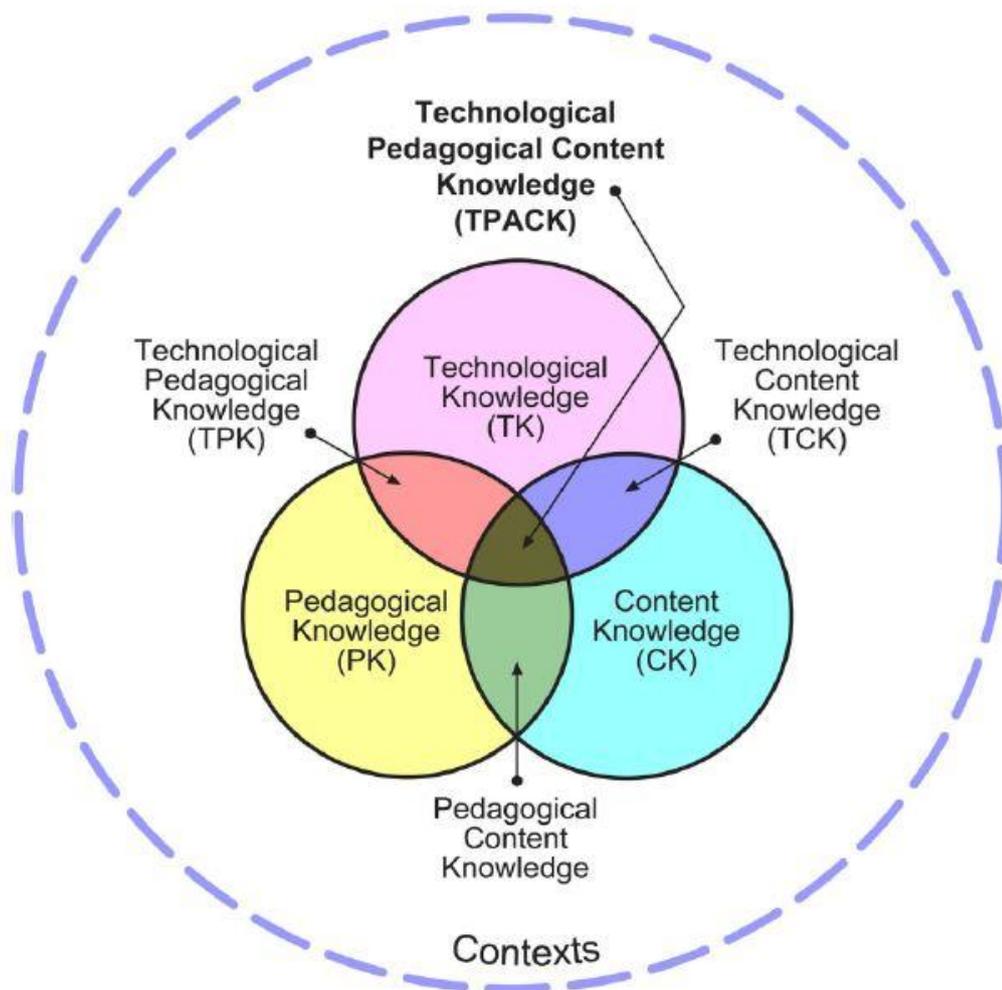


Figure 3.1: The TPACK framework and its knowledge components (Mishra & Koehler, 2009, p.63)

Content knowledge (CK) refers to the educators' understanding and knowledge of what is to be taught which is different from grade to grade and subject to subject.

Pedagogical knowledge (PK) is the educators' "deep knowledge about the processes and practices or methods of teaching and learning" (Mishra & Koehler, 2009, p.64). This knowledge is about the practice of teaching and includes an understanding of theories of learning to do with cognitive, social, and developmental functioning.

Pedagogical content knowledge (PCK) refers to the way an educator interprets and adapts teaching matter to present to the student. This facilitation of learning material is content-bound in that the content often dictates the methods of teaching. However, it also refers to the tailoring of the content to suit the student's learning style and prior knowledge.

Technology knowledge (TK) is a concept that involves the continual (and evolutionary) use of technology and resources over time - ranging from chalkboards to digital multimedia tools. The crucial factor is the use of the correct tools to do the job rather than using technology for technology sake. It is open-ended as technological advances are so rapid and therefore require the user to be engaged in this activity over a lifetime.

Technological content knowledge (TCK) refers to the understanding of how technology changes representation (and therefore, learning and teaching) of content knowledge. Certain technologies lend themselves to certain types of content e.g. microscopes and science. The educator needs to have a deep understanding of how to integrate the best technology for the subject matter being taught – again, technology used for technology's sake can often be detrimental to learning.

Technological pedagogical knowledge (TPK) is an understanding of how technological tools can transform or constrain teaching and learning. A data projector in a class forces the class to do the same activity whereas if each learner has a computer then the individual can work at his/her own speed. Moreover, "TPK requires a forward-looking, creative, and open-minded seeking of technology use, not for its own sake but for the sake of advancing student learning and understanding." (Mishra & Koehler, 2009, p.66)

Context in this diagram refers to the unique circumstances or contexts within the learning situation

Technology, Pedagogy, and Content knowledge (TPCK) is an integration of all core components (content, pedagogy, and technology). However, it goes further than the separate components in that there needs to be a deep understanding of how to creatively combine the components to best transfer concepts and knowledge, encourage thinking skills and address difficulties. The complexities of teaching with technology requires a fine balance and a “change in any one of the factors has to be ‘compensated’ by changes in the other two” (Mishra & Koehler, 2006, p.1029). This is succinctly stated: “At the heart of TPCK is the dynamic, transactional relationship between content, pedagogy, and technology. Good teaching with technology requires understanding the mutually reinforcing relationships between all three elements taken together to develop appropriate, context-specific, strategies and representations” (Koehler *et al.*, 2007, p.741).

This ‘dynamic transactional relationship’ referred to in TPCK is elaborated on by (Lee & Tan, 2010) who also focus on the philosophical basis of this statement which is that of Dewey’s view that knowledge is a construction of the relationship between an individual and the environment i.e. in social interactions. This demonstrates the social constructionist viewpoint which views “discourse about the world not as a reflection or map of the world but as an artefact of communal interchange” (Gergen, 1985, p.266). Inherent in the theory is that there is not a generic universal view of the world that everyone shares but rather views are bound in context and especially language.

Social constructionism places a large focus on looking at the ways in which people participate in constructing their perceived social reality. It is linguistic in nature and the emphasis is on communication and dialogue as the way in which they produce and organise social reality. For social constructionists, “conversation is the condition *sine qua non* for the constitution of the social world, knowledge and identities” (Talja *et al.*, 2005, p.89). The value of students constructing their own cultural artefacts underlie the constructionist learning theories of Papert (Papert, 1993, , Papert & Harel, 1991) . The social constructionist theory, which emphasizes the dialogic nature of communal interchange, the social interaction of people with each other as well as their world, is the background with which to understand teachers’ knowledge and their use of the TPCK model within their work contexts (Lee & Tan, 2010).

Lee and Tan (2010) therefore propose an integrative- transformative continuum for TPCK in order to study the dynamic transactional relationship of technology, pedagogy, and content knowledge. This idea is borrowed from Gess-Newsome’s (1999) discussion of teacher knowledge, PCK, falling in a continuum between the two extremes. She uses the analogy of mixtures and compounds whereby mixtures can easily be separated into its various elements but

a compound becomes a new substance distinct from its original elements. Lee and Tan (2010) borrow this image so that integrative-TPCK on one end of the continuum delineates a teacher who merely adds technology to the lesson whereas a teacher falling in the transformative-TPCK range is a teacher who has integrated technology in such a way that their various components have been transformed into something entirely new.

Another aspect of TPCK was introduced when Web 2.0 tools forced educators to look at core pedagogical issues and there arose a real need to integrate specific (ICT) tools into lessons. As a response to this specific need and because they believe the TPCK model is too general, Angeli and Valanides (2009) coined the term ICT –TPCK, describing it as a strand to TPCK , and dealing with the way in which educators deliver learning through the manipulation of specific ICT tools.

3.1.2 ICT –TPCK

Angeli and Valanides (2008, p.159) emphasize that the educator’s knowledge about the students and the content must be the starting point with which to drive the process of developing technological skills amongst educators. Furthermore, “technology is not a delivery vehicle that simply delivers information, but a cognitive partner that amplifies or augments student learning.” The researchers developed an assessment model that relies on self and peer-assessment and actively encourages a more student-centred approach that is in alignment with the collaborative aspects of Web 2.0 tools. They advocate that research in this (TPCK) field needs to invest in socio-cognitive constructivist ideas to encourage dialogue and negotiation through socio-cognitive conflict (Angeli & Valanides, 2008).

Cognitive or Piagetian constructivists regard education as student-centred and emphasize the importance of individual cognitive development in education. The student has preconceived ideas, beliefs, and opinions and these undergo changes when the teacher as a facilitator sets tasks that challenge these preconceptions. The students construct their own mental knowledge through these problem-solving tasks. However, differences in gender, class, or race are not accounted for, as well as the socio- cultural contexts in which learning takes place.

Social or Vygotskian constructivism places the emphasis on education as seen within a sociocultural context. Knowledge is constructed from social and cultural interactions within the environment and in the process both the individual and the environment are changed (Talja et al., 2005).

The model for ICT-TPCK is:

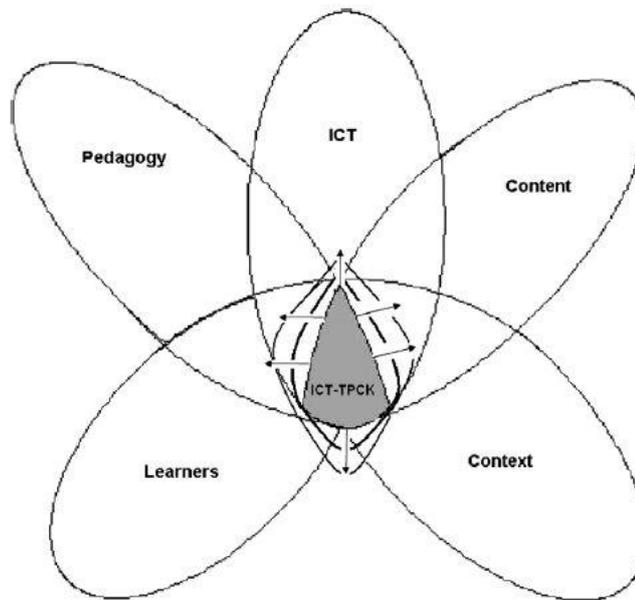


Figure 1.2: ICT-TPCK (Angeli & Valanides, 2008, p.159)

ICT-TPCK is seen as a unique body of knowledge that enables a teacher to design learning that incorporates ICT. It can be defined as the way teachers can use their knowledge about tools, pedagogy, content, learners, and context to transform and teach more effectively, especially with regard to particular topics that learners find difficulty in understanding and also topics that are difficult to represent. However, their research shows that teachers need specific training in integrating ICT in education for it to be the transformative tool that they envisage (Angeli & Valanides, 2008) and the “dynamic transactional relationship” between elements of TPCK, which was mentioned earlier (Koehler *et al.*, 2007, p.741). They therefore reject the integrative idea of (Lee & Tan, 2010) and view TPCK as transformative with the view that TPCK is a “distinct body of knowledge that can be developed and assessed” (p. 158) and therefore goes beyond just integration or accumulation of the four knowledge bases. Their research shows that there is no growth in TPCK unless specific instruction is given towards the development of TPCK, therefore showing it to be a “unique body of knowledge” (p. 158) rather than a continuum.

However, there are criticisms of the ICT-TPCK theory and they are discussed in the following section together with a description of a new conceptual theory for integrating ICT into education called ICTeTD.

3.1.3 ICTeTD

The criticism of the ICT-TPCK model is that the five components are: ICT, Pedagogy, Content, Context and Learners yet, within the model technology is counted twice (Engida, 2011). The TPCK model has already incorporated technology into its structure (although this involves ALL technology from chalkboards to microscopes to ICT) and then the ICT-TPCK model includes it again as ICT. Engida (2011) also points to various other discrepancies in the model in that, although pedagogy and content are included as contributing to knowledge areas, technology does not. Only ICT is included together with Learners and Context. He argues:

“Even if Angeli and Valanides (2008) argued that TPCK is a distinct construct, with which I fully agree, their framework (figure 3.2) fails to show that epistemological position” (Engida, 2011, p.18).

Engida proposes the following tetrahedral framework of TPCK:

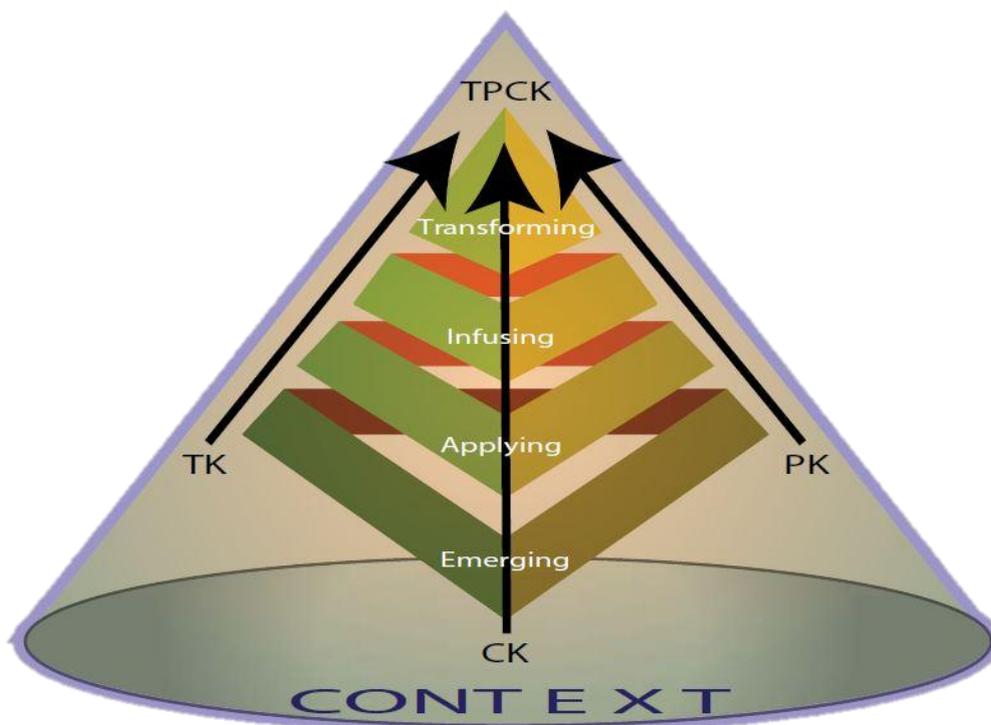


Figure 3.3 : ICTeTD (Engida, 2011, p.19)

This shows the “progressive, transformed and dynamic nature of TPCK” where “the entire knowledge base for teachers is imbedded within a context”(Engida, 2011, p.18). Also, the model deals not only with the knowledge base of teachers but also teacher development, thus underlining the teacher training which Angeli & Valanides (2008) insisted was necessary. The author called it the ICTenhanced teacher development (ICTeTD) model.

In this pyramid type 3D model, where all knowledge areas (CK, PK, and TK) are at the same level and are of equal importance, the main contribution of the model is one of development. The lower levels of the pyramid show teachers at the basic level of TPCK and this continuum

grows as the top of the pyramid is reached – this being representative of the innovative and creative teachers who would fall into the category ‘transforming TPCK’. The level below that is called ‘infusing TPCK’, and lower down ‘applying TPCK’, until the bottom level is termed ‘emerging TPCK’. This level is the baseline where teachers are only just beginning to become aware of TPCK and lack the skills, as the transformational teacher has, of theorising about TPCK and being able to develop innovative projects with TPCK in mind. All of these levels of development are embedded into a context which is understood as being all those factors which influence the teacher including cultural, political, and psychological factors (Engida, 2011). TPCK, and the two models based on TPCK, all offer important insights on integrating technology into education. The basic TPCK model allows an impartial view of teacher assessment and a lens through which to view this case study but it does have some limitations. Although ICT-TPCK and ICTeTD models attempt to address these shortcomings, it is clear that much research needs to be done in order to transform these models into theoretical models that can be measured.

3.1.4 LIMITATIONS OF TPCK

Mishra and Koehler’s (2005) theory is a fairly new model although much of it is based on the older concept of Shulman’s PCK (1986). This older model, PCK, already showed complications with regard to unclear boundaries and definition of constructs so that when technology is added into the model, it becomes more complex and problems are compounded.

In the study with online distance educators in the US, done by Archambault, and Crippen (2009), it was found that there were high correlations between content knowledge and pedagogical knowledge, technological content and technological pedagogy, as well as technological pedagogical content and both technological pedagogy and technological content. This then poses the question as to whether these are distinct and separate domains. In addition, there is a lack of information as to how the domains - technology, pedagogy, and content knowledge - interact or overlap with each other and how to measure these. The study found that “measuring each of these domains is complicated, muddled, and messy” (Archambault & Crippen, 2009, p.83) and advise further research in order to validate (and perhaps rework) the concept. They do, however, acknowledge that it is a useful model to apply to educators using technology, and can yield some important findings.

Schmidt *et al.* (2009) tested validity for the seven components of TPCK as defined by Mishra and Koehler - Technology knowledge (TK), Content knowledge (CK), Pedagogical knowledge (PK), Pedagogical content knowledge (PCK), Technological content knowledge (TCK),

Technological pedagogical knowledge (TPK), and Technological pedagogical content knowledge (TPCK). They found it to be a reliable and valid measure for the small sample of early childhood and elementary pre-service educators, which formed the study. The authors acknowledge that more research was needed to broaden validity and generalizability.

To redress the lack of a comprehensive account of TPCK measures presented in a systematic manner, (Koehler *et al.*, 2012) tested 141 instruments and categorized them into five types. These were self-report measures, open-end questionnaires, performance assessments, interviews, and observations. They presented these findings, with comments on reliability and validity, indicating that there is now a move from the conceptual model to measuring TPCK empirically.

TPCK is therefore an on-going and evolving conceptual model and, as technology changes, it will continue to evolve in order to fit the latest technological incursion into education. It is in this light that the basic model will be used - as a lens through which to understand various components of the study, to highlight shortfalls and perhaps point a way forward for future research. The need for different strands of TPCK will also be discussed.

3.1.5 SUITABILITY OF TPCK, ICT-TPCK AND ICTeTD TO THIS STUDY

Using TPCK as a lens through which to view this case study has offered a broad understanding, from the teacher's viewpoint, of the different components involved. However, as has been mentioned earlier, the diffuse boundaries between each component make it difficult to clarify which each contains, as there is a large overlap. In addition, this study involved participation from the students – peer collaboration, peer education, as well as students educating the teacher on some finer aspects of ICT! All these aspects would fall under 'context' in TPCK and precise discussion would then become diffused and muddled if the basic TPCK model were used.

Therefore the ICT-TPCK model, which isolates ICT as being the technology used (rather than all technology), allows a more focussed lens through which to interpret this study. In addition, the ICT-TPCK model incorporates self and peer-assessment and actively encourages a more student-centred approach that aligns with the collaborative aspects of Web 2.0 tools used in this research. The addition of two extra components – the knowledge the teacher has of students (which must be the starting point for the integration of ICT) as well as the knowledge of the learning context (Angeli & Valanides, 2008) is valuable for a more focussed analysis of this study where the stories were paramount, the technology secondary.

In addition, working in groups (in this study) forced the learners to acquire new communication and conflict resolution skills. This fitted the ICT-TPCK model better than the TPCK model. These models were essentially created to train and assess educators in using technology in the classroom. With Gen Y students often being technologically ahead of most educators and collaborative in nature, the one-way directional, educator-oriented (as in Web 1.0 tools) TPCK failed to take into account that often the educator learns from the Gen Y student (and this collaboration goes both ways as with Web 2.0 tools). Learning then becomes a collaborative effort of educator and student.

Therefore, the theory of TPCK provides the best basic (broad) lens through which to view the study but the ICT-TPCK model is a better fit with which to view this particular research. The ICTeTD model is of interest for its theory of development and its criticism of the ICT-TPCK model but is not of great value in viewing this case study, which is not about teacher training but more about the value of peer education through the construction of digital stories.

The following sections will describe the study design and research process.

3.2 STUDY DESIGN

The Qualitative - Quantitative debate (QQD) has been argued in philosophical areas as objectivism vs. subjectivism/constructivism and in research methodologies as deduction vs. induction. In research methods, it is understood as numbers vs. narratives etc. (Gelo *et al.*, 2008). Pink (2005) suggested that the 21st century demanded whole brain skills, not just skills of the scientific left brain thinkers but also those of the creative right brain thinkers. In the same way, the debate over which research methods to use in psychology and education has veered towards a more integrative approach – mixed methods research (MMR).

MMR combines both quantitative and qualitative methods. The pragmatic stance is “what matters most is the responsiveness to the demands of the inquiry context” (Gelo *et al.*, 2008, p.278). MMR allows for a greater understanding of the complexities of multiple worldviews and different paradigms.

As this case study crosses over the boundaries of psychology, technology, and education and its research is intended to contribute to an understanding of the holistic 21st century world of our Gen Y students, it is appropriate that the MMR method is used. This could lead to greater understanding of trait EI, SSEIT, digital storytelling and Gen Y students, and open more fields for further research. Therefore the actual situation dictated the mixed method approach, with the

possibility of integrating both to present a holistic picture of the results, as suggested by (Niaz, 2008):

“It is concluded that mixed methods research programmes (not paradigms) in education can facilitate the construction of robust strategies, provided we let the problem situation (as studied by practicing researchers), decide the methodology” (p.302).

A triangulation mixed method was used for this study in that the quantitative data was compared and contrasted with the qualitative data so that a broader understanding would be reached. Both types of data were implemented within the same period and with the same research groups. The qualitative data was used to inform the quantitative data and the results and findings were presented qualitatively.

The research was structured as a longitudinal design with repeated measures of the SSEIT test (four measures over a 6-month period). Qualitative data was derived from a self-administered semi-structured questionnaire given at the end of the study and just prior to the last SSEIT test (each pertinent to the different interventions of the four groups).

The primary model took this structure:

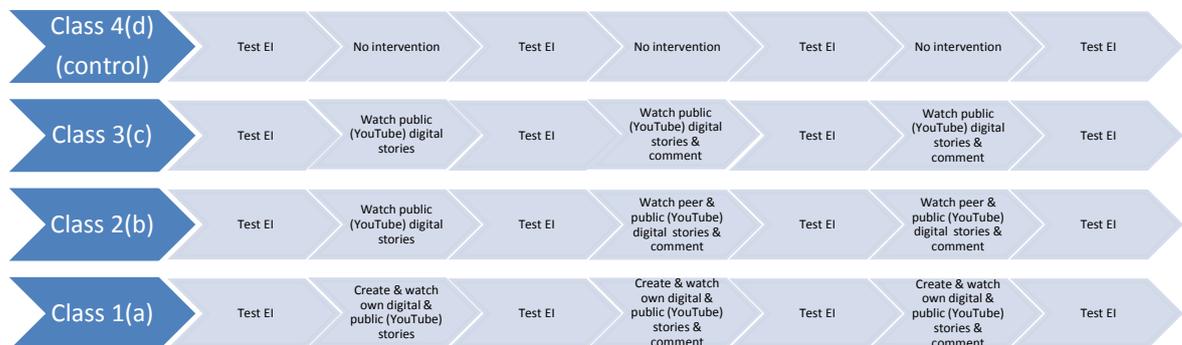


Fig.3.4 Intervention of digital stories on the growth of Emotional Intelligence

Each class is comprised of one Grade 9 and one Grade 10 class

Class 4d – no intervention

Class 3c – watch and comment on public movies only

Class 2b – watch and comment on peer and public movies

Class 1a – make own movies, watch, and comment on peer and public movies

The two different age groups were chosen to allow for comparison of data with reference to age. The time line was intended to be 6 months – 3 months of activity (a school term) and 3 months (a term) of inactivity – in order to test the longevity of the impact of the intervention. In reality,

the time had to be extended to 3 terms and there was no time for a period of inactivity due to school pressures.

The researcher teaches all classes except for one Grade 10 class (Class 4d – no intervention) and so the intervention could be delivered consistently to all students. Most of the detail in this case study took place in the students' computer lessons except in some cases when there was absenteeism of either student or educator.

The mixed method will also allow for various interpretations of the data through the TPCK and ICT-TPCK lens as well as cover those aspects which these may not address (trait EI). The quantitative data will provide information as to whether digital story-telling does foster trait EI as well as information with regard to the construct itself, and the qualitative data will provide information with regard to aspects of the ICT-TPCK model and especially an insight into overlapping areas that may correlate with the intervention. Integration and contrasting of both methods could also yield some interesting findings.

3.2.1 DESCRIPTION OF RESEARCH PROCESS

Students had Sony podcast bloggies made available to them or they used their own cellular phones or webcams to make their videos. The classes had already been trained in the use of the bloggies so technological expertise had been gained. Any new student, who was unfamiliar with the process, was teamed up with those who had already been trained. Some students were on an international exchange programme for the first term and entered the project halfway through. These students were 'attached' to groups already engaged in the process of digital story making.

Individuals were tested for trait EI in all classes at every level but both Class 1(a) s were given group as well as individual scores at every level of testing. The group's score was the average of each member's score. At analysis stage, it could then be investigated if a different statistical measure; such as a maximum score, minimum score, or the range provided greater insight into the group situation. This could also provide interesting insights into the impact of group-work on trait EI score as opposed to individual work.

The first three groups were able to participate in a similar exercise after the research (later in the year) so that they were not compromised from an educational (and psychological) perspective. They spent time creating their own video screenplays in the fourth half of the year while Group 1(a) went through the same process as the other groups did (during the research process).

3.2.2 INTERVENTION

The video screenplay template was downloaded from www.nabubomi.co.za and collaboration with this organisation was obtained. Education department of the Eastern Cape has already approved the Nabu Bomi initiative and the template gives guidelines on how to write a screenplay for a 5-10 min podcast.

The task was for the students to write their own 5–10 min screenplay using commonly accepted screenplay format. The title was “Inside Outside” and was to be a fictional story (based on their own experience) which they would like to make, expressing the title (psychological/emotional/mental factors within and contextual/environmental factors without). They were asked to write and direct the screenplay and were allowed to draw on any (willing) actors whom they might choose. They were encouraged to be as creative as possible (any genre was allowed and any suitable props – animals, toys etc.)

3.3 STUDY SITE

Research took place at a non-governmental girls’ only school in Durban, KwaZulu-Natal.

3.4 STUDY POPULATION AND SAMPLING

3.4.1 STUDY POPULATION

Research was aimed at Grade 9 and 10 students at an independent all girls’ school in KwaZulu-Natal, South Africa. The primary researcher is an educator there and research was more conveniently carried out within the classroom activities according to the curriculum. Focus was therefore on young female teens who are also particularly vulnerable at this life stage.

Most students who attend independent schools in South Africa are paying higher school fees than government schools and therefore come from the higher socio-economic group, except in the case where admittance is through bursaries and scholarships. Not only is technology more available in these schools but classes are smaller and a more flexible teaching schedule followed. Many government schools do not allow for creative and innovative deviations from the curriculum due to large class sizes. The study was therefore carried out on a population in an independent school.

3.4.2 SAMPLING STRATEGY AND SIZE

There were 172 female students of mixed racial groups involved and an average of 22 students per class (89 were from Grade 9 and 83 from Grade 10). These small numbers, per class, made research possible given the technological complexities in a classroom setting.

Both Class 1(a) s (those writing and making their own movies) were subdivided into groups of two, three or four (depending on choice of student). In Grade 9, there were seven groups ranging from two to five in a group and in Grade 10, there were six groups ranging from two to four in a group, making 13 groups in all (13 digital stories).

The groups were randomly chosen and it was later discovered that the Grade 9 group who were part of the intervention contained all the music girls in the grade i.e. music girls are taken out of normal lesson in order to have their music lessons. The EI scores were measured against their own (baseline) EI scores so any variances in class composition would be accounted for.

3.5 DATA COLLECTION METHODS AND TOOLS

3.5.1 DATA COLLECTION METHODS

A mixed method was used with quantitative measurement of EI being formalised with accepted EI measurement tools for trait EI as this has a greater measure of validity and consistency than ability EI (Perez et al., 2005). Trait emotional intelligence was tested with the SSEIT measurement which is a self-report measure of emotional intelligence (Appendix A) developed by (Schutte et al., 2009). These were collected and scored at the beginning of the research, in the middle and at the end and again after 3 months. The students completed these as pencil and paper tests in the lesson and handed them in immediately.

The qualitative data was collected via a semi-structured questionnaire (Appendix B) which was different for each group (based on their intervention or non-intervention).

Students in Classes 1(a) and 2 (b) were given a peer assessment form which rated each movie prior to final editing so that there was collaboration with the peer group on what changes needed to be made. This form was simply laid out with three types of emoticons to aid quick assessment.

A social networking and collaborative site, VoiceThread, was set up for the purposes of participants' commentary on the movies available to each group. At the end of the study, but before the last SSEIT was completed, a semi-structured questionnaire was completed by all.

VOICETHREAD

Trait EI is a self-reported test that measures the participants' perceptions of their own emotional self-efficacy. It is not a reflection of actual ability (ability EI) but rather a measure of how they see themselves. Perceptions of self are reliant, to a large degree, on feedback from others. With teens' constant need for peer approval and acceptance, feedback was built into this case study, partly to allow for commentary from their peers (which is normal for a social networking teenager today) but also to allow feedback as a means to enhance the learning process.

For security, a closed social networking site was needed and, as YouTube could only accommodate 25 in a closed setting, an educational tool called VoiceThread was used (www.voicethread.com). It was possible to separate groups on the site so that the different classes could be given separate categories whereby they could view and comment on the movies.

All movies could either be shown during class time but were also permanently available online for the duration of the study. One of the reasons for choosing this site for the study was that all comments and movies could be downloaded and stored after the event and archived. In addition, the comments can be monitored so that the educator had control over which comments are finally posted so that negative or defamatory commentary could be avoided.

At the beginning, a closed blog was available to each class for comment but because of the time constraints, this was not used much. Later, when the stories had been completed they were uploaded to a closed site on <http://voicethread.com> and this proved to be a far more enticing tool for the learners to view the stories and comment. This form of social networking was intended to be part of the collaborative process of discussing and providing feedback on the digital story process, thus potentially contributing to a positive emotional response.

The VoiceThread site was set up as follows:

Class 4(d) (no intervention): Could not access the site

Class 3(c) (watch public movies): YouTube and movies from Nabubomi were made available (six in all)

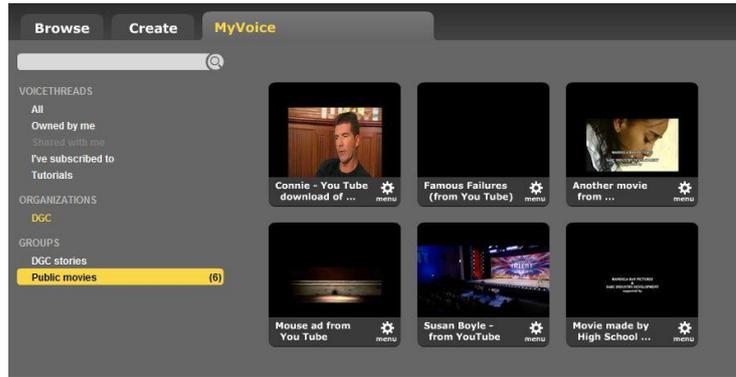


Figure 3.5: Public movies available on VoiceThread to classes 2-4 only

Class 2(b) (watch peer and public movies): YouTube and movies from Nabubomi were made available (six in all). Also available were the peer movies (13 in all):

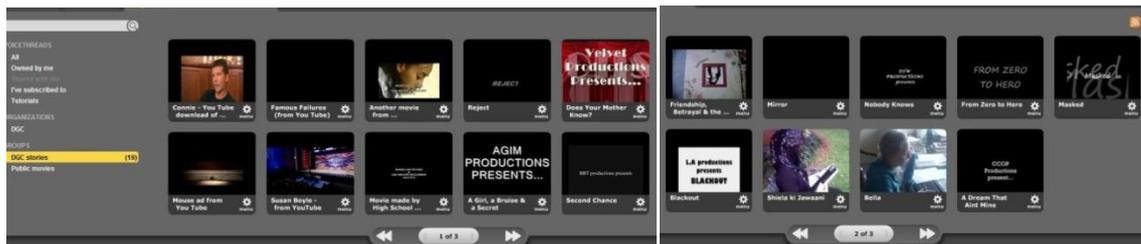


Figure 3.2: Peer movies available on VoiceThread to classes 1(a) and 2(b) only

Class 1(a) (make and watch peer and public movies): They could access the same site as Group 2(b).

The comments were all positive and did not need to be moderated at all. All who had access to the site could view them.

Examples of some comments from the peer movies are:

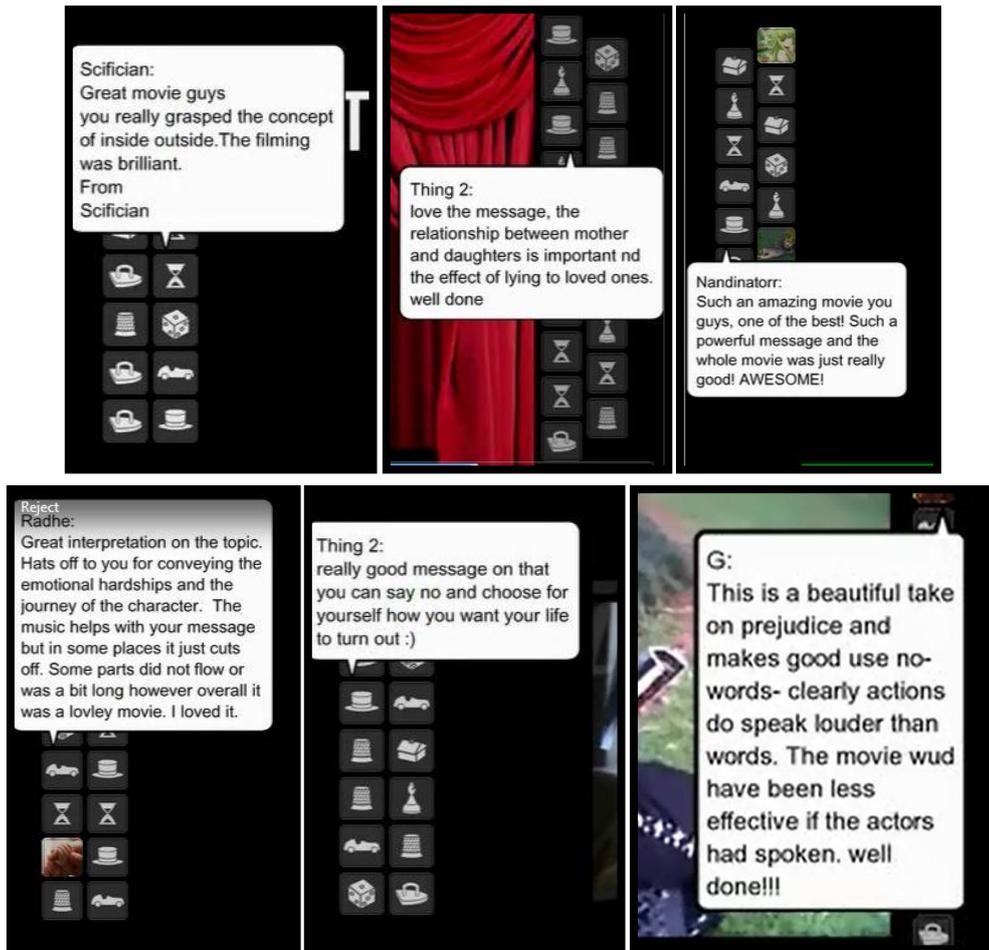


Figure 3.3: Examples of comments on VoiceThread site accessible only to classes 1(a) and 2(b)
 Classes 1-3 had access to the public movie site and could comment. Some examples are:

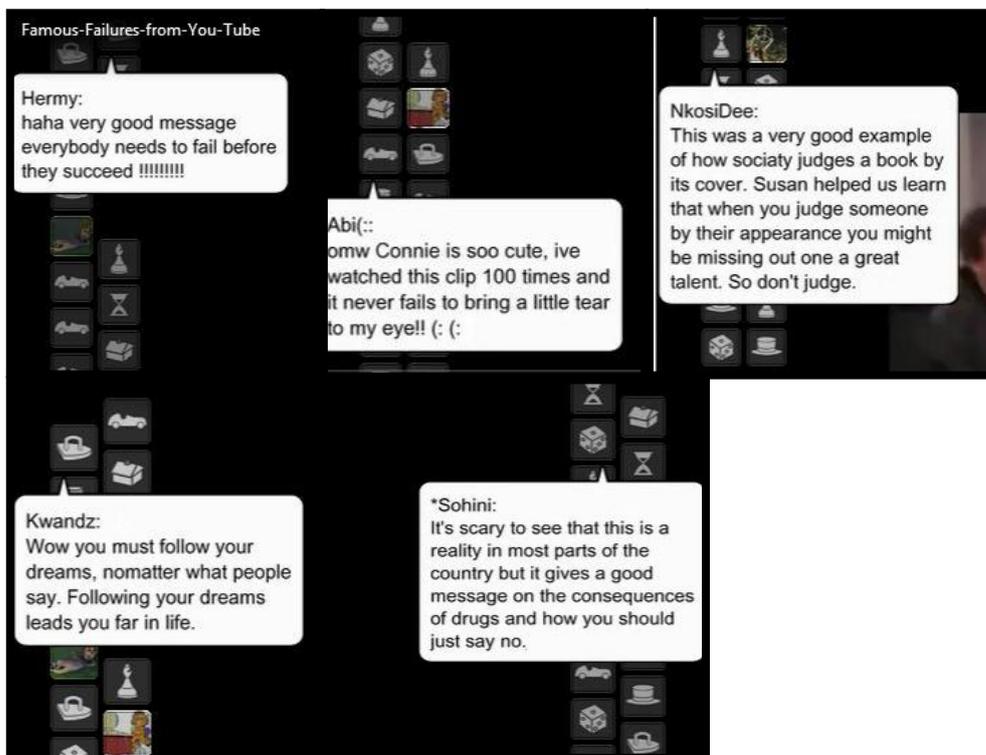


Figure 3.4: Examples of comments on VoiceThread of public movies available to classes 1-3

Peer assessment took the form of a single sheet with three types of emoticons assigned to various criteria and was marked in class by each member of the class. This, as well as the suggestions given, was then used as a means to convey the value of each movie as well as a constructive guide for improving it.

3.5.2 DATA COLLECTION TOOLS

3.5.2.1 QUANTITATIVE – SSEIT

The tool for measuring trait EI is the Schutte Self Report Emotional Intelligence Test (SSEIT) which is a 33 item self-report measure of emotional intelligence developed by (Schutte et al., 2009) and is comprised of four factors: perception of emotions, managing emotions in the self, social skills or managing others' emotions, and utilizing emotions.

The items in the SSEIT which comprise these subscales, suggested by (Ciarrochi et al., 2001) are as follows:

- Perception of Emotion (items 5, 9, 15, 18, 19, 22, 25, 29, 32, 33),
- Managing Own Emotions (items 2, 3, 10, 12, 14, 21, 23, 28, 31),
- Managing Others' Emotions (items 1, 4, 11, 13, 16, 24, 26, 30), and
- Utilization of Emotion (items 6, 7, 8, 17, 20, and 27).

All 33 items represent each of these four subscales (Schutte et al., 2009).

Responses for each of the following categories were collected:

Grade 9

- Before, middle, after test and a term later for those with no intervention at all (23 x 4 responses)
- Before, middle, after test and a term later for those watching non-peer videos (23 x 4 responses)
- Before, middle, after test and a term later for those watching non-peer and peer videos (20 x 4 responses)
- Before, middle, after test and a term later for those producing and watching peer videos (23 x 4 responses)

Grade 10

- Before, middle, after test and a term later for those with no intervention at all (18 x 4 responses)
- Before, middle, after test and a term later for those watching non-peer videos (23 x 4 responses)

- Before, middle, after test and a term later for those watching non-peer and peer videos (22 x4 responses)
- Before, middle, after test and a term later for those producing and watching peer videos (20 x4 responses)

Combined Grades 9 and 10

- Before, middle, after test and a term later test for those with no intervention at all (41 x4 responses)
- Before, middle, after test and a term later for those watching non-peer videos (46 x4 responses)
- Before, middle, after test and a term later for those watching non-peer and peer videos (42 x4 responses)
- Before, middle, after test and a term later for those producing and watching peer videos (43 x4 responses)

Most trait emotional intelligence tests are scored quantitatively (DeBusk, 2008) and the method used here was quasi-experimental. The independent variable is the making or watching of digital stories and the dependant variable is the SSEIT scores gained from the self-report tests.

The SSEIT is scored according to a 5-point Likert-type scale:

- 1 = strongly disagree
- 2 = somewhat disagree
- 3 = neither agree nor disagree
- 4 = somewhat agree
- 5 = strongly agree

Items 5, 28 and 33 are reverse coded and total scores represent the sum of all the items (Schutte et al., 2009). The self-report tests in this research are scored with a maximum score being EI (33x5=165) and a minimum EI (33x1=33).

The tests were done in class (paper and pencil) and measurements were compared against the baseline EI measurement of each student that took place prior to the intervention. They were also compared to the control group to take into account chronological growth of emotional intelligence.

3.5.2.2 QUALITATIVE – SEMI-STRUCTURED QUESTIONNAIRES

Four sets of questionnaires were set up (see Appendix B) according to the interventions experienced by each of the four groups. Questions pertained to emotions felt at being excluded from the movie making, included in watching public and peer movies and actually making the movies. All groups were asked about their emotions around writing the EI test four times and asked for any other comments. Group 1(a) (those who made the movies) were asked about technological problems experienced as well as their feelings about group-work.

3.6 DATA ANALYSIS METHODS

3.6.1 QUANTITATIVE

Statistical analysis took place with the SPSS software (statistical package for social science) which is available from University of KwaZulu-Natal, Westville.

3.6.2 QUALITATIVE

The data was collated and analysed according to the questions asked. It was then coded for themes and sub-themes, through thematic analysis by the researcher, with reference to (Corbin & Strauss, 2008). A final analysis took place by selecting and analysing both quantitative and qualitative data of certain participants to get a better insight into the results.

3.7 DATA MANAGEMENT AND STORAGE

All documents required that the students include their names and classes but this was more for collection purposes rather than identification. They were assured of confidentiality and all material is kept in a locked cabinet accessible only to the principal researcher. All related electronic documents have password-only access.

3.8 MECHANISMS TO ASSURE THE STUDY QUALITY, CREDIBILITY AND TRUSTWORTHINESS

The principal researcher is a white female educator at the school where the study has taken place. She has been an educator for over 30 years and has worked with all ages from kindergarten to Grade 12. She has been employed at the current institution for 7 years and

taught a range of subjects from Economics and Management Sciences, Technology, Computer Applications Technology from Grade 6-12. She currently teaches EMS and technology to Grades 6, 7, and computer literacy to Grades 8-11. It is acknowledged that her passion for creative technology in the classroom, especially multimedia, could show some bias as one of the Grade 10 classes had another educator. However, the 'other' educator is also an educator of IT is passionate about it and supervised a control class who had no intervention.

As an educator, a structured class environment is paramount and this study was conducted in that format. EI tests were handed out and collected in the classroom during a designated time in the lesson. All classes were subject to the same interventions at approximately the same timeframes (the institution has an 8-day teaching timetable) and in the same manner, as the principal researcher was the educator for seven of the eight classes.

3.9 ETHICAL CONSIDERATIONS

Acceptance of this Master's thesis was granted by The School of Information Systems and Technology at the University of KwaZulu-Natal (South Africa) and permission to conduct the study was obtained by the Headmaster of the school and informed consent was obtained from both the parents and the students involved in the study, given that the students were minors and could not provide consent themselves. Movies were placed on a closed social networking site, VoiceThread, to be viewed only by their peers. Ethical clearance was obtained from the University of KwaZulu-Natal (South Africa).

3.10 SUMMARY

The study drew on a TPCK theoretical framework, while acknowledging that it is not a perfect fit – for this reason ICT-TPCK theory was mentioned as well as the philosophical theory of social constructionism. However, arguments could certainly be made to contest this statement as TPCK is a new evolving theory with fairly umbrella-like capacity to contain various elements and does give focus to the various components of technology, pedagogy and content knowledge as well as the interacting elements contained within these components. All these are, to a large degree, incorporated in this study but mention was made of the teacher-centred approach of the theory and the need to modify the TPCK to incorporate the collaboration of student and educator in technological tools, hence the 'best fit' of the ICT-TPCK model.

The intervention of writing and creating digital stories was explained in full and the use of VoiceThread as a feedback mechanism was highlighted. A mixed method study design was used with quantitative measurements taken from the SSEIT tests for Trait EI (four tests in all) and a semi-structured qualitative questionnaire taken at the end of the research. The participants were 172 female Grade 9 and 10 students in an independent all girls' school in Durban, KwaZulu-Natal, South Africa.

The interventions of each group, (making or watching digital stories or both), or no intervention at all, were detailed and a time-line marked the completion (and collection) of each EI testing.

CHAPTER 4: RESULTS

4.1 INTRODUCTION

This chapter outlines the quantitative results as well as the qualitative results and draws some conclusions from them both. The qualitative results seemed to contradict the quantitative results. They therefore provided some ground for comment and suggestions for further research.

4.2 INTRODUCTION TO THE GRADES

One Grade 9 class and one Grade 10 class were tasked with the intervention of making digital stories. The other classes either watched public, peer, or both or had no intervention at all.

4.2.1 PUBLIC DIGITAL STORIES

Two movies were taken from the Nabubomi site (<http://www.nabubomi.co.za/>) as examples of digital stories created and filmed by teens in the Eastern Cape. One was about using drugs and the danger of peer pressure and the other was about following one's dream even when peers ridicule it.

Five movies were taken off YouTube and chosen for their inspirational content, suitability for teenagers and popularity on YouTube – they were:

- Nick Vujicic - Nick Vujicic was born without arms or legs and gives motivational talks – (<http://www.youtube.com/watch?v=BnT9vIX048E>)
- Susan Boyle – her first performance in Idols UK (<http://www.youtube.com/watch?v=RxPZh4AnWyk>)
- Connie Francis – the child star's first performance in Idols UK (<http://www.youtube.com/watch?v=QWN0iVrJDsEandfeature=fvwrcl>)
- Nolan's strong cheddar advert (<http://www.youtube.com/watch?v=YqlQS5CCmwI>)
- The World's Famous failures (http://www.youtube.com/watch?v=Y6hz_s2XIAU)

4.2.2 PEER MOVIES

Seven movies were made by Grade 9s and had the following themes:

- A dream that ain't Mine – wanting to play football when mother wants her to be a fashion model

- Masked – a friend at school dies and she walks around masked, not showing her true feelings
- Nobody knows – pressures teens face on a daily basis
- Shiela-ki-Jawaani-ipod – how a Muslim teenager is exactly the same as any other teenager
- From Zero to Hero –teenage pregnancy
- Bella – a girl who says no to peer pressure and promiscuous drunken parties
- Mirror – standing up for her right to carve her own identity and do her passion in life

Six movies were made by Grade 10s and had the following themes:

- A Girl, a Bruise and a Secret – physical abuse
- Second Chance – saying no to peer pressure/dangers of drinking and driving
- Friendship, Betrayal and the Environment – finding friends that care
- Reject- bulimia
- Blackout – save electricity
- Does Your Mother Know? – Mother/daughter trust issues

Themes were categorised as:

1. External – physical abuse, peer, parental, boyfriend and school pressure
2. Internal – communication, identity, trust issues

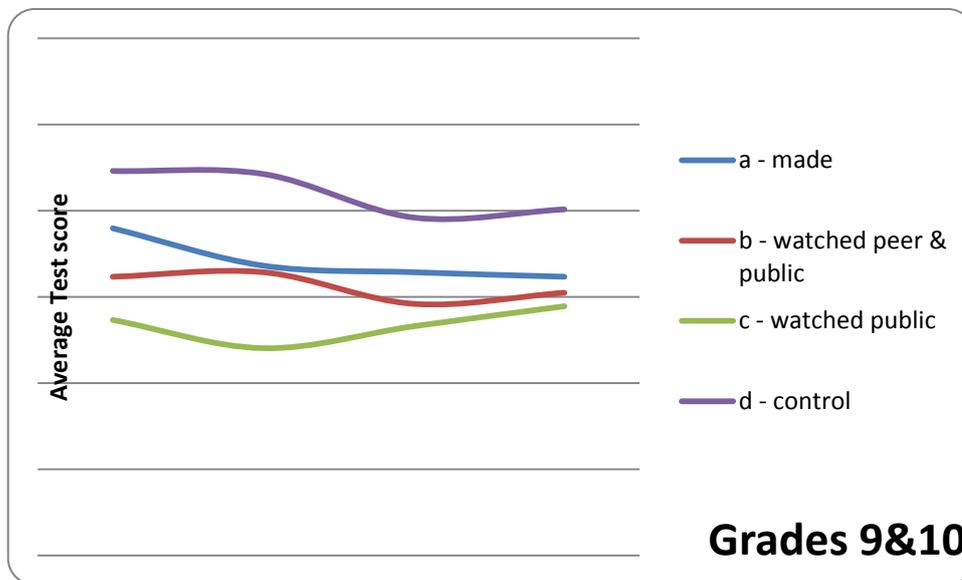
4.3 QUANTITATIVE – SSEIT

Statistical tests were done for the following:

1. One-way ANOVA on each class in each Grade to test whether time/intervention is a significant effect in terms of test scores.
 - a. Grade 9 – the average EI score from test to test of all 4 groups showed no significant difference
 - b. Grade 10 – the average EI score from test to test of all 4 groups showed no significant difference
 - c. Grade 9 and 10 combined - the average EI score from test to test of all 4 groups showed no significant difference

It can be concluded that time/intervention does not have a significant effect on test scores.

When applying ANOVA with repeated measures, the mean test scores for the four tests were not significantly different in any of the four classes.



Class a (group 1) with a Greenhouse-Geisser correction – $F(2.392, 98.064) = 1.552, p = 0.213$

Class b (group 2) with a Greenhouse-Geisser correction - $F(3.323, 95.255) = 0.518, p = 0.624$

Class c (group 3) – $F(3,129) = 0.923, p = 0.432$; (class d - $F(3,117) = 1.324, p = 0.270$)

Class d (group 4) - $F(3,117) = 1.324, p = 0.270$)

It can thus be concluded that time/intervention does not have a significant effect on test scores.

2. Repeated measures ANOVA with between-subjects factors to test whether there is a significant difference from test to test and also from class to class
 - a. Grade 9
 - i. Between-subject test to test if there a difference from class to class. Here the control group had a higher average EI than the group who watched public stories but the group scored higher than all the groups from Test 1 through to Test 4.
 - ii. Within-subject test, to test if there is a difference from test to test, showed no significant results (as shown in the one-way ANOVA of first analysis).
 - b. Grade 10
 - i. Between-subject test to test if there is a difference from class to class. There was no significant effect from the interventions received by the different classes.
 - ii. Within-subject test, to test if there is a difference from test to test, showed no significant results and any differences between test results do not reliably depend on the interventions.
 - c. Grade 9 and 10

- i. Between-subject test and within-subject test show no significant effect from the interventions received by the different classes. Therefore, neither the intervention activities nor a combination of the intervention and the class significantly affects the EI measured by the test.
3. Test on groups vs. individual
 - a. Only one student individually scored higher for all 4 tests than the group average so, although group work may have increased the group EI, it is unclear whether group work results in higher EI than individual scores of EI.
 4. One-way ANOVA on each class in each grade for each EI group (there are 4 categories within the SSEIT questionnaire viz. PE (Perception of Emotions), MES (Managing Emotions in the Self), MOE (Managing Others' Emotions), UE (Utilizing Emotions))
 - a. Grade 9 – no significant differences between groups or tests
 - b. Grade 10 – significant results were found in:
 - i. The MES scores of the class who watched peer and public movies (group 2b)
 - ii. The MOE scores of the control class (from test to test)(group 4d)
 - c. Grade 9 and 10 – The MES scores of the class who watched peer and public movies differed significantly from test to test (group 1a)
 5. Repeated measure ANOVA with between-subjects factors (this not only tests whether there is a significant difference from test to test but also from class to class).
 - a. Grade 9
 - i. PE – score for the control group is significantly larger than the PE score for the class who watched public movies
 - ii. MOE - score for the control group is significantly larger than the PE score for the class who watched public movies and class is a significant effect. Therefore, one can conclude that the type of intervention received by the different classes has a statistically significant effect on MOE.
 - b. Grade 10
 - i. MES – Class is not a significant effect but Test is a significant effect
 - ii. MOE - Class is not a significant effect but Test is a significant effect
 - c. Grade 9 and 10
 - i. PE – between-subject test – PE scores for the control class are greater than for the class that watches public movies
 - ii. PE – within-subject test – neither test nor its interaction with class are significant effects.
 - iii. MES - between-subject test (class) – is not a significant effect
 - iv. MES– within-subject test – test is a significant effect

- v. MOE - between-subject test – class is a significant effect. MOE is greater for the control class than that class that watches public movies
- vi. MOE - within-subject test – no significant effects
- vii. UE - within-subject variable- no significant effects
- viii. UE - between-subject variable - no significant effects

It is clear that there are no significant effects on EI scores from one test to the other in ALL eight groups.

Other tests done were:

Minimum/average/maximum analysis

Grade 9

Descriptives^a

Minimum score across tests

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Class a (group 1) - Made movies	22	121.73	12.725	2.713	116.09	127.37	88	149
Class b (group 2) - Watched peer and public movies	20	117.20	14.241	3.184	110.54	123.86	78	138
Class c (group 3) - Watched public movies	22	113.05	16.635	3.547	105.67	120.42	77	139
Class d (group 4) - Control	22	125.68	17.211	3.669	118.05	133.31	85	148
Total	86	119.47	15.814	1.705	116.07	122.86	77	149

a. Grade = Grade 9

ANOVA^a

Minimum score across tests

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1972.104	3	657.368	2.795	.045
Within Groups	19285.291	82	235.186		
Total	21257.395	85			

a. Grade = Grade 9

Class D > Class C

Descriptives^a

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Average score across tests								
Class a (group 1)- Made movies	22	129.36	11.871	2.531	124.10	134.63	96	150
Class b (group 2)- Watched peer and public movies	20	125.00	10.016	2.240	120.31	129.69	106	141
Class c (group 3)- Watched public movies	22	119.68	14.827	3.161	113.11	126.26	86	141
Class d(group 4)- Control	22	133.23	13.979	2.980	127.03	139.43	106	153
Total	86	126.86	13.642	1.471	123.94	129.79	86	153

a. Grade = Grade 9

ANOVA^a

		Sum of Squares	df	Mean Square	F	Sig.
Average score across tests	Between Groups	2232.598	3	744.199	4.492	.006
	Within Groups	13585.727	82	165.680		
	Total	15818.326	85			

a. Grade = Grade 9

Class D > Class C

Descriptives^a

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Maximum score across tests								
Class a (group 1)- Made movies	22	136.00	10.319	2.200	131.42	140.58	113	156
Class b (group 2)- Watched peer and public movies	20	131.95	9.578	2.142	127.47	136.43	113	149
Class c (group 3)- Watched public movies	22	125.82	14.461	3.083	119.41	132.23	98	152
Class d (group 4)- Control	22	139.45	13.472	2.872	133.48	145.43	110	159
Total	86	133.34	13.035	1.406	130.54	136.13	98	159

a. Grade = Grade 9

ANOVA^a

		Sum of Squares	df	Mean Square	F	Sig.
Maximum score across tests	Between Groups	2261.544	3	753.848	5.074	.003
	Within Groups	12181.677	82	148.557		
	Total	14443.221	85			

a. Grade = Grade 9

Class A > Class C; Class D > Class C

Grade 10

Descriptives^a

Minimum score across tests

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Class a (group 1)- Made movies	20	119.25	19.931	4.457	109.92	128.58	88	158
Class b (group 2) - Watched peer and public movies	22	118.82	14.232	3.034	112.51	125.13	96	147
Class c (group 3)- Watched public movies	22	119.59	11.014	2.348	114.71	124.47	99	138
Class d (group 4)- Control	18	119.50	14.537	3.426	112.27	126.73	93	147
Total	82	119.28	14.886	1.644	116.01	122.55	88	158

a. Grade = Grade 10

No significant differences

Descriptives^a

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Average score across tests								
Class a (group 1)- Made movies	20	125.70	18.088	4.045	117.23	134.17	97	161
Class b (group 2)- Watched peer and public movies	22	126.41	13.186	2.811	120.56	132.26	99	151
Class c (group 3)- Watched public movies	22	127.27	10.638	2.268	122.56	131.99	105	146
Class d (group 4)- Control	18	128.67	12.952	3.053	122.23	135.11	107	153
Total	82	126.96	13.694	1.512	123.95	129.97	97	161
Maximum score across tests								
Class a (group 1)- Made movies	20	131.00	16.540	3.699	123.26	138.74	102	164
Class b (group 2)- Watched peer and public movies	22	132.95	13.058	2.784	127.16	138.74	102	154
Class c (group 3)- Watched public movies	22	134.32	11.532	2.459	129.21	139.43	110	155
Class d (group 4)- Control	18	136.00	12.556	2.959	129.76	142.24	111	159
Total	82	133.51	13.384	1.478	130.57	136.45	102	164

a. Grade = Grade 10

No significant differences

Again, no significant differences were found in any of the groups from both Grade 9 and 10.

4.4 QUALITATIVE – FEEDBACK QUESTIONNAIRES

Each of the four groups was given different questionnaires depending on the form of intervention (see appendix B). These were given shortly after the third SSEIT and after the completion of the movies and after commenting on VoiceThread. They were then classified according to the following three themes:

1. Response to SSEIT
2. Response to intervention
3. Group-work dynamics (only applicable to Class 1 who made the movies)

4.4.1 GENERAL DISCUSSION OF ALL GROUPS

Comments made by the control Group 4 (d) ranged from 'I was a bit irritated that we never got to make or watch movies as they looked like fun' to 'I feel sad. I like movies. I want to make them and watch them. I felt very left out.' and 'I feel very upset to be excluded from this.' The responses to the EI tests ranged from calling them 'repetitious', 'tedious', 'irrelevant' to a more explicit 'did not understand the purpose of them'. Some felt they had no emotional response to them at all and only a few (less than 3) thought that the questions themselves made them think about their emotions.

Group 3 (c) (the group watching public digital stories) found the movies inspirational with the Nick Vujicic movie mentioned the most. Nick Vujicic was born without arms or legs and gives motivational talks. Comments were made about how they felt 'sympathetic towards them' and started 'considering others a bit more than we do' feeling that it made them 'think before we judge people like that'. They found them 'eye-opening' and said they made them think about taking life for granted. It gave some a better perspective on their own problems and they became 'more appreciative of everything around' them. It made them more aware of their feelings and, in many cases, students reported a need to become more positive in life. They described feeling 'uneasy' and 'inspired'.

There were also many comments about watching the Britain's got Talent movie of Susan Boyle where they were 'angry with the judges who judged (her) before they heard her sing', and came to the realization that 'you must never give up...you have to keep trying to achieve your goals'. One reported that the videos helped her 'make my decisions in the (EI) test' and another said it was 'easier doing/learning from YouTube clip. It was easier to place yourself in that situation'.

This group responded to the EI tests as firstly 'boring', 'uninteresting' and 'confusing' – a sense of 'not knowing what was going on'. By the second test there was a more positive response ranging from 'my emotions changed from test to test as (I) experienced different feelings towards different videos' and 'I saw things in a different way'. Other comments were that the tests 'raised issues I often don't think about' to 'with repeating the test I was able to understand myself better and do some of the things that (were) said in the test' and 'it makes you think about emotions in a way that I haven't done before'. A succinct answer was given by a grade 9 student – 'I had never been asked those questions before so I was unsure what to say when given the first test but after watching those videos it gave me new insight into things and I was able to answer the questions more easily.'

The suggestions for improving the EI test were to have only three options with a 'thumbs up/middle/down sign' to make it 'quicker for us to do and a bit more interesting'.

Many reported initial confusion with the questions and some boredom and irritation at the repetitiveness of them but generally learned much about themselves and what the questions meant after watching the movies.

This group's responses to the EI tests bore more similarity to the Group 1 (a) groups' responses (those who created their own digital stories) than any of the other groups. There was a synchronicity between writing the EI tests and watching inspirational movies – the one fed into the other and actually helped them become more aware of their emotions and their emotional responses to life's events.

Group 2 (b) (the group watching public and peer digital stories) were asked mainly about their responses to watching their peers' movies. They were also asked to assess them. The comments ranged from 'badly made', 'boring', 'made me think' to 'they made me feel happy as they were made by girls my age. It was comforting to know that others face some of the same difficulties (as I do)'. One reported that 'it was nice to see my friends act...and to see that they are aware of what people could be going through and that they're not just boy and party obsessed'. They helped to 'accept who I am', 'taught me some valuable lessons' and seeing their peers in the movies made them able to relate to the subject matter more easily.

It did appear that some impact was lost because of inadequate skill – 'the endings were touching and had an impact but so many of them dragged on too long'. In addition, 'some had faults which made it hard to follow what was going on'. These feedback questionnaires were given before the final editing of the movies took place and, in hindsight, perhaps this should have happened after they watched the final edited movie. However, research in a school setting is fraught with difficulties and exams, excursions and public holidays had already played havoc with the timelines of the research. A decision was therefore made to assess all the movies at that point, otherwise, with the incursion of a long mid-term holiday, momentum would have been lost and interest might have waned.

This group's response to the EI tests were also fairly positive with comments such as 'I have felt that I am more aware of the people around me and their feelings and how I should react' and 'I think my ability to read people's emotions was greater by the third test'. One found that in the second and third test she was 'not as confident in (her) answers' as she was in her first test. Another reported that the tests 'challenged (her) to answer truthfully and get to know (her) emotions better'.

The EI test itself again proved to be a springboard for evaluating themselves and being aware of their emotional states, with one student saying ‘the tests let me think a little more about my emotions and (the) emotions of the people around me’. Many reported changes in feelings due to watching the movies but the irritation of watching badly made movies marred the event for many – it would appear, that well-made public movies (such as those watched by Group 3c) superseded badly made peer movies in terms of affecting emotional states in a positive manner. However, a deeper understanding (and appreciation) of the problems filmed were experienced by those watching peers’ stories as summed up by one Grade 9 student ‘ they made me feel happy as they were made by girls my own age. It was comforting to know that others face some of the same difficulties as I do’.

Group 1 (a), who experienced the intervention of making their own digital stories, reported the greatest emotional changes and responded in a very deep way to the EI tests, with the completion of each test making them think more and more about their responses and therefore their feelings. They also had positive and negative experiences with working in a group with some anger at group members who didn’t ‘pull their weight’ but a general feeling of understanding their peers and others’ points of view better from group work as opposed to individual work (all opted to form groups). Most claimed that it was also more fun to work as a group. However it was difficult to meet together in order to create the movie, as many had extra mural activities.

Comments from this group were very constructive and showed a new understanding that ‘people are not who they are on the outside. They just portray that image to impress people.’ One student, whose father died suddenly during the term wrote a rather poignant comment ‘my movie made me want to try and be myself and telling others not to try change me but I don’t try be myself around everyone because like in my movie it showed a girl saying ‘no’ to being changed but it doesn’t show her afterwards and how she copes because most times we don’t.’ A Muslim student who made a movie about how Muslim dress hides a very normal teenager, just like everyone else, wrote ‘Our movie was a bit of a controversial topic. It affected my feelings because as we were acting out the different people in it we realized that people act like that a lot and it felt good to bring awareness to (the) moral of the movie.’ A student new to the school said ‘she reflected on the difficulty of growing up as a teenager in our society’ and said ‘I personally feel movie making is a great way to express the teenage emotions. In the films you see peer-pressure, school pressure, life pressure, love, hate, anger and disappointment. You see our lives and I think by doing these movies we make a greater impact of understanding (on) the adults.’ This comment underscores the research mentioned earlier where teens rely on their

peers for advice and information rather than their parents – they feel that adults do not understand them. Making digital stories thus provides them with a voice to be better understood by their peers as well as their parents and educators.

4.4.2 THEMES FROM QUESTIONNAIRES

Group 4 (d) (control group)

- Response to EI test

The majority were negative: Boredom, insecurity, lack of feelings, no change from test to test, repetitious, annoyance, irritation, ineffective, pointless, irrelevant, no purpose, lack of attention to questions, tedium, anger, uninteresting.

Positive themes were in the minority, interesting, somewhat helpful.

- Response to (no) intervention

Negative responses to the case study were in the majority: feelings of unfairness, missing out, sadness, rejected, confused, feeling unimportant, irritation, sadness, disadvantaged.

Other responses (positive and neutral) were in the minority: not really concerned/indifferent, happy to delay the experience.

Group 3 (c) (watching public movies)

- Response to EI test:

Most were positive and some mixed: Unsure of response, made one think about emotions in a new way, made me honest with myself, understand myself better, confused about the questions, change of emotions, interesting, tedious, raised issues not thought about before, increased confidence and understanding in each successive test, fun way to get to know myself better, awareness of emotions and ability to critically evaluate feelings for the first time in last test, could answer more easily after watching the movies.

A few were negative: Repetitious, felt hesitant, reduced interest in each successive test.

- Response to intervention:

Watching movies in class: good experience, fun, gripping, attention grabbing, and ability to read emotion better, good influence, more effective than pencil and paper tasks, too long, easier to focus and learn about life's lessons, entertaining, educational and informative.

Response to the subject matter of the movies: empathy towards people in the movies, change of outlook, sad, eye-opening, change in emotions, good influence, emotional, upset, inspired. Motivated to overcome obstacles, 'easier said than done', touching, hope, increased awareness of own actions and feelings, happy and appreciative, grateful for what I have, learnt non-judgmentalism, discrimination and prejudice, learnt that anything is possible, helped me answer the EI test, reflective.

There were no negative comments.

Group 2 (b) (watching public and peer movies)

- Response to EI test:

Positive responses were in the majority: Confused at first but increasingly emotionally empowered in each successive test, emotions were labile so responses changed in each test, made me think, interesting, made me question myself and led to thoughts of how to improve myself, become more positive and confident, challenged me to answer truthfully, got to know myself better, really thought about my emotions, made me look deep into myself and I think I am not a very positive person, felt an increase in EI from the first test, got me thinking, good exercise.

Negative reactions were in the minority: time consuming, pointless, repetitious, confused, annoyed, irritated, and waste of time, boring, lost attention when repeated so answers may not be a true reflection, lacked confidence in each successive test.

- Response to intervention:

Most responses were positive: happy, comforted by knowing we all have the same problems, interesting learning experience, entertaining, realistic, good experience, some movies very deep, thoroughly enjoyed them and all the meaning behind them, more fun than ordinary lessons, loved watching them, made an interesting impression, experienced a range of emotions while watching them, good conclusions and morals, chose wise topics which related well to our lives, felt an empathy for the characters, taught me what constituted a good (and a bad) movie,

cleverly thought up, endings were touching, saw them in a different light, challenging one's perceptions of others, inspiring,

Negative responses were in the minority but were greater in number and more forceful than the group who watched public movies: acting not good, some topics too sensitive, some movies too shallow, badly made so got annoyed and easily distracted, some movies did not have a resolution, some dragged on too long, music not good.

Group 1 (a) (making and watching movies)

- Response to EI test:

Most responses were positive : interesting to how I honestly felt about the question, the movie made me more trusting, first test: excited; second test: bored; third test: I knew myself better, felt more open with myself with each test, more confident and positive the third time, more in tune with myself by the end of the third test, with the first test I was not as open as in the other tests but in the third test owing to the experiences from the film I felt more aware in certain aspects as well as more open, helped to draw my emotions into perspective, made me evaluate myself, made me think about things about myself that I usually would not have thought, uncertain about every test and question but I finally learnt to be myself answering them, tend to pay more attention to non- verbal cues now, helped me realise that I do go through emotions and helped me take note of when, what and why it happens, helped me to realise that I'm not very in control of my emotions and that I'm always there for others, made me think about all my emotions I go through.

The only 'negative' comment could be construed as positive in getting to explore the complex world of emotions: the first one I was sure but then when I got to the last one test I did not know about my emotions.

- Response to intervention:

Positive responses were: making movies was a great learning experience as well as a life lesson that will be remembered, I experienced working with new people, I felt much happier working with different people than my friends, exhilarating and exciting, had fun and now know that I can do anything I set my mind to, was a positive experience for me, very enlightening as I was able to understand underlying, prevalent issues of society today, some of the things I learnt were upsetting to me but I realised it was reality, helped me to understand my own feelings, thought and attitudes towards people, events and circumstances, helped me to define my feelings, felt

the issues people were struggling with, feel proud of what the group achieved, a time of re-evaluating our surroundings – what was happening at the time in our lives, tried climbing into the character's shoes and felt the point of view, proud of what we'd done, I would not mind doing it again, loved making the movie, wonderful experience.

Negative responses were in the minority: lot of pressure, very time-consuming, to sacrifice a lot of time, mostly stressed, as the movie wasn't as simple as I thought, technical problems, bad filming leading to editing problems.

The majority of the comments about group-work were positive: It was nice to work in a group to get to know different people, added value to the process, we were there to motivate each other and make the movie work as a team, much better than working alone, new ideas were added so in this respect learning together in a group was enjoyable, hearing different opinions really contributed to the whole process of making the movie, taught me how to work with others and to co-operate with other people, I learnt how to work more effectively in a group, good opportunity to work with new people, great to work with people who could bring their own ideas to the table, I know I bonded with my group, came closer friends with my partners, learnt to compromise, made the process more fun and less challenging, tolerated each other's mood swings.

Negativity around group work was mainly about unequal distribution of work and difficulty in getting together with different timetables, annoying sometimes to try to incorporate everyone's ideas, people would not co-operate, unequal workloads, some people in groups did not pull their weight, showed me that most people only care for themselves, some could not work the computer properly.

4.5 INTEGRATION OF QUALITATIVE AND QUANTITATIVE DATA.

The self-report test is a measure of the person's *perception* of their emotional competence or self-efficacy. Trait EI relates to the personality dimension and there is little research to show whether it is able to be fostered. Research has shown it to be quite stable over time (Pool & Qualter, 2011) and also that high trait EI has genetic links to some pathologies (Petrides *et al.*, 2010b). There is also evidence that ability EI does overlap to a certain degree with trait EI and impact from various situations did show significant differences in scores but only when both EI scores were compared (ability and trait) (Fitzgerald & Schutte, 2010).

In this study only trait EI was measured repeatedly against the base line scores and scored according to SSEIT guidelines, thus providing quantitative data.

As explained earlier, a mixed method was used with a semi-structured questionnaire as qualitative data to inform the quantitative data and to further understand the construct trait EI and EI in general. This may give information as to whether the correct measurement tool was used and also to demarcate further avenues of research arising from this case study.

To further analyze the data, individual's separate quantitative scores from the group 4(a) that made movies (experienced the intervention) were compared and integrated with the qualitative data and the results described within the themes:

Grade 9 Group 1 (a) (made movies, three examples randomly taken from the top, middle and bottom scores)

1. Student JK - her total SSEIT scores over all four tests were 140, 145, 128, and 118 with an average of 138 (min 118 max 145). With a class average of 129, this puts her in the upper category.

Her comments about the EI tests were: "My feelings do not always stay the same but my views do and so their answers would slightly differ".

With regard to filmmaking, she said: "When making the film I actually tried climbing into the character's shoes and felt the point of view".

Her comment about group-work: "The group was very organized and we had to tolerate each other's mood swings but we really worked it out". A later explanation offers an indication of why feelings ran high in this group – one of them lost the entire movie and they had to do a complete reshoot!

Her comments about the EI test were confusing but were taken to mean that because of labile feelings she would answer the questions differently each time. Her scores dropped throughout the intervention and yet her comments about the process were positive – she was able to empathise, work in an emotionally charged group and resolve issues. Despite the drop in scores, her average remained high due to a high score in Test 1 of the SSEIT.

2. Student SJW – her total SSEIT scores over all four tests were 123, 113, 109, and 113 with an average of 115 (min 109 max 123). Her scores were at the lower end of the class whose average was 129 over all four tests and showed a steady drop over the first three tests with a slight increase in the last test.

Her comments about the EI tests were: “The questions make more sense now than they did in the first test but the answers are still the same”. Many of her peers echoed this perception quite frequently but in all of them, the EI scores showed some change so clearly this was not quite accurate in reality.

The filmmaking was for her a stressful one as the “movie wasn’t as simple as (she) thought” but she says, “in the end the movie really turned out well and I was proud of what we’d done”. In fact, their group made a movie about death of a friend that was quite deep and left one feeling emotionally raw – an excellent achievement from novice filmmakers!

With regard to group-work she said: “It was definitely a lot more fun and there was a lot more creative inputworking together made the process easier as we helped each other along all the time. I also got to know my group members a lot better”.

Once again, the feedback shows a positive response to the whole experience from a sense of achievement to an appreciation of her group (interpersonal skills) yet her EI scores actually declined overall.

3. Student CC – her total SSEIT scores over all four tests were: 135, 128, 136, 129 showing a drop in Test 2 and Test 4 and an overall average of 133 (min 128 and max 136). Class average was 129 so she scored slightly above the average.

Her remarks with regard to the EI tests were: “I feel with the first test I was not as open as in the other tests but in the third test owing to experiences from the film (project) I felt more aware in certain aspects as well as more open”. This showed a growth in perception of emotions and utilization of emotions that was borne out with an increase in her score for the third test. However, it does not explain the drop in the last score.

With regard to film-making she said, “The positive experience and feeling for me was one of happiness in creating a script to tackle a major issue we face as teens but in some ways it was quite disheartening to know that we face these problems as teens” showing an acute awareness of her own emotions and also attesting to the fact that the experience had been a positive one.

Her comment about group-work also showed a positive experience and an awareness of interpersonal skills: “My group certainly added value to the process unlike other

situations where I felt like being alone was the best opportunity. My group added creativity, joy and liveliness to the experience for me”.

She clearly valued the entire experience as a positive one in all arenas – the EI test, digital story-telling and group-work yet her SSEIT scores showed little change over 9 months.

Grade 10 Group 1 (a) (made movies, three examples randomly taken from the top, middle and bottom scores)

1. Student JK - her total SSEIT scores over all four tests were: 149 ,148 ,145 , 152 with an average of 149 (min 145, max 152).

Her comments about the EI tests were: “They differed, as the more tests I did, the further I’d gone in the process. Thus, I feel as though now, I am more sensitive to people’s emotions”.

With regard to filmmaking, she said: “It was very enlightening as I was able to understand underlying prevalent issues of society today”.

Her comment about group-work: “New ideas were added, so in this respect, learning together as a group was enjoyable. However, certain members of the group did not contribute at all which made our project even more time-consuming and unenjoyable”.

The average EI score of this class was 124 so her EI was relatively high and increased in Test 4 by 7 points (from the previous test). However, this increase was offset by the scores dropping in Test 2 and 3 so that the average showed no significance. However, her score for the final EI test correlate with her statement that she was in a positive ‘process’ of developing a sensitivity towards people’s emotions as each test was completed. Her experience of the movie-making process was positive and she was aware of both the positive and negative aspects of group-work. Again, the acute awareness she has of her own feelings suggested a high EI which is borne out by her final EI score but in the final average score showed little change.

2. Student FA - her total SSEIT scores over all four tests were 104, 93, 88, and 107 with an average of 98 (min 88, max 107).

Class average was 124 so this represented a score at the lower end of the scale.

Her comments about the EI tests were: “It felt as if I could identify other peoples’ emotions more easily at the second and third test”.

With regard to filmmaking she said: “Some of the things I learnt were upsetting to me, but I realised it was reality”.

Her comment about group work: “The group added value, we worked well together and learnt from each other”.

Interestingly, when she felt more confident about emotional issues, her scores were at their lowest. However, her final score is higher overall, which mirrors her increase in confidence; when averaged out her result appears to indicate no changes in her EI although her comments about the process are all very positive.

3. Student MI - her total SSEIT scores over all four tests were 122,118, 108,135, with an average of 121 (min 108 max 135). Again, the average of the class was 124 so she fell in the middle range.

Her comments about the EI tests were: “I did not really feel a difference emotionally after each test”.

With regard to filmmaking, she said: The issues themselves which we made a movie about really made a difference. We found ourselves having second thoughts about opinions we once had especially regarding the value of friendship and the role it plays in our lives”.

Her comment about group-work: “It was great to work with peers who could bring their own ideas to the table. It was annoying sometimes to try and incorporate everyone’s ideas even if you thought your own idea was great”.

Although she had some challenging interpersonal relations she found the exercise positive and felt her emotional reactions did not change over time. Her perception of herself emotionally (trait EI) did not change, yet her scores did. Her scores dropped considerably in Test 2 and 3 only to leap up 27 points in Test 4. However, because of the dipping of these scores her average score showed little change. This is interesting as

trait EI measures one's perception of oneself – verbally she felt unchanged yet her trait EI scores showed many changes.

These vignettes (3 from each grade, above average, average and below average) give a small glimpse into the information gained from both qualitative and quantitative data. Further discussion of these results will take place in the next chapter.

4.5.1 KEY ASSUMPTIONS OF THE STUDY

This research used stratified sampling and was limited in terms of the samples being taken from a particular grade (age), a particular school, as well as using only females. There is therefore scope for further research amongst boys and mixed (co-educational) schools as well as governmental schools and rural schools. The research will only have relevance for South Africa which has different variables in terms of background and context to other countries. The research is also limited over time – is a 9 month study. Other results may develop over a longer time period.

4.5.2 LIMITATIONS

There were many practical hindrances to doing research at a school. The research was initially aimed at Grade 8 and 9s but there were objections to Grade 8s being involved as many were new to the High School and needed extra computer lessons to catch up to their peers. It was then changed to Grade 9s and 10s but, in these classes, some students left the computer lesson to go to music lessons (taken as a matric subject in the school) and some students went on international exchange for a term. Added to this were the normal rates of absenteeism due to illness and sporting activities as well as missed lessons due to cultural and sporting school activities. The school has an 8-day cycle, which means that there were only about six computer lessons per term – any one missed meant that nearly 3 weeks could pass before seeing the class again. Another frustration was an unusual amount of public and school holidays in the second term, causing the loss of momentum and often interest, in the project. The project was intended to last a term but, for these reasons, it was extended into the second term with the final test to taking place towards the end of the third term.

The EI test was a pencil and paper test as there were times when absent students had to complete it in classrooms where there were no computers. In retrospect, it appears that, as it was not an online test, students found it boring. Alternatively, it may simply have been that the repeated testing was boring – as attested to in the student feedback forms.

Ethical clearance letters for students and parents were also difficult to collect and took many reminders and much cajoling to have returned. Added to which, the protracted time that the students held the bloggie cameras resulted in one camera going missing, despite rigorous efforts at control.

The discrepancies were handled in the most efficient way possible as they arose but these resulted in stress within groups when a group member was missing and also put a great deal of administrative strain on the principal researcher while she was not only conducting research but also teaching full-time.

4.6 SUMMARY

SSEIT measures Trait EI, which falls in the realm of personality, and data is collected via self-report tests. These tests measure the *perception* of the respondents of their emotional efficacy as opposed to their actual ability. There is little research with regard to whether trait EI can be fostered; tests for trait EI are more likely to give information about the construct itself rather than the levels of predictability (Petrides et al., 2004). Therefore, a semi-structured questionnaire was included in the study and qualitative data was collected to inform further.

The quantitative and qualitative evidence was described and integrated to provide a holistic picture. The scores of SSEIT were placed alongside relevant comments in the qualitative questionnaire and were analysed according to themes. Quantitative data showed that there were no significant differences between the different groups yet qualitative data showed that there were some meaningful emotional experiences and changes in the participants.

While the quantitative data informed as to whether EI scores changed throughout the intervention, the qualitative data gave insights on group work, reactions about completing the SSEIT repeatedly and responses about making movies (digital story-telling).

Key assumptions were discussed as well as the limitations of the study.

The following discussion will draw on all findings in synthesizing and viewing the case study through the chosen lenses in order to make recommendations and suggestions for further research.

CHAPTER 5: DISCUSSION

5.1 QUALITATIVE & QUANTITATIVE RESULTS

The previous chapter indicated that the various analyses of quantitative data showed no obvious links between the interventions (or lack thereof) and the resultant test scores. However, the qualitative results provide insight into the nature of the student experience. These show that making and watching personal digital stories had a very profound effect on the teens and forced them to challenge their own preconceptions about other people. It also allowed them to 'be heard' by the adults around them, which was positive as they generally feel that adults are 'out of touch'. Group dynamics were often difficult but added to the emotional experience so that answering the EI tests became more and more meaningful. These positive experiences are in direct contrast to the class that had no intervention at all. The control group class were highly annoyed or irritated at the 'meaningless questions' in the EI test and at feeling excluded from the group experience.

The quantitative and qualitative data from the groups who experienced the intervention of making digital stories was then integrated on an individual basis to give a more in-depth picture. Three individuals were taken from Grade 9 and three from Grade 10 with each choice representing an EI score higher than, lower than and equal to the class average score. These were analysed according to themes – response to EI tests, filmmaking, and group-work. Similar questions were compared from both qualitative and quantitative data so that comparisons were as close as possible (like with like).

At times, the scores corresponded with the statements but at other times when the qualitative data was very positive, there was an inverse relation in the quantitative scores, thus showing a dissonance between the two. Clearly, the mixed method allowed for rich qualitative data that informed the quantitative data and often was contrary to it. This raises many questions and underlines the criticisms previously made regarding EI, especially that of Mayer et al (2003) who state that 'the applied use of EI tests must proceed with great caution' (p. 104). Discrepancies between these two measures may also point to the South African context, the size of the group, the repeated measures, and perhaps a lack of sensitivity of SSEIT. It could also point to the fact that the qualitative data measured some other aspect of EI not related to trait EI and that the quantitative data showed that trait EI stayed stable throughout.

The qualitative data showed that watching public digital stories has a positive effect on emotional development of teens and, in fact, is often a more positive experience than watching poorly made peer movies. It seems that the teens of today have a highly critical judgment of movie quality!

All enjoyed making or watching movies and the negative response of those who did not do either is an indication of the importance teens place on digital stories as a mode of learning about themselves and the people around them as well as a vehicle for their own 'voice'.

Added to this was that the completion of each SSEIT self-report provided a forum for the participants to engage in an internal debate about their own emotions and caused them to ask questions of themselves for the first time. In each successive writing of the test, many reported a greater understanding of what was being asked and their own levels of emotional awareness grew because of the successive exposure to the tests, despite many reporting high irritation at having to repeat the measure. Repeated measures seemed to result in consistent scoring throughout all classes viz. the scores varied over time but most stayed within the same 'band'.

5.1.1 DISCREPANCIES BETWEEN RESULTS

As has been discussed, there are various criticisms of EI and a general call for more stringent research. However, the test used in this study, SSEIT, has high reliability and validity and has been used with teenagers in various parts of the world. The qualitative results showed that there were positive results from the intervention yet the quantitative results showed no significant differences between groups. This raises several questions and highlights the importance of Mixed Method Research. The next chapter suggests recommendations based on these findings.

One possible explanation for the discrepancy can be found in the qualitative data where many reported irritation at the repeated testing of the SSEIT. They also reported that their answers were the same throughout (even when they were not). If this were indeed the case then this would point to acclimatization of the test. Trait EI has never been measured against itself, especially repeatedly, so this may be an indication that it should not be tested in this way. This shows the way forward to more stringent research to measure whether this hypothesis holds.

There might have also been other possible problems with the SSEIT with regard to culture, size of sample and lack of sensitivity of test.

However, if the SSEIT measured exactly what it was supposed to measure, then it indicated that trait EI stayed stable throughout whether there was an intervention or not. This would suggest

that digital story telling did not impact on trait EI at all, thus underlining recent research that trait EI is fairly stable over time (Pool & Qualter, 2011).

This means that the qualitative data measured some other aspect of EI which is not related to trait EI. This could point the way for more research in defining exactly what part of EI was affected with the intervention of digital stories. In addition, there was evidence that the SSEIT actually affected the understanding of emotions and so was, in effect, an intervention as well. Further research could yield more information in this regard. In addition, these results may also allow for further research in understating the construct trait EI.

5.2 TPCK AND ICT-TPCK

Viewing this research through the lens of TPCK (technology, pedagogy, and content knowledge) and the new strand, ICT-TPCK, it is clear that the technology viz. ICT, used as a tool to express ideas and stories, was a positive experience for those who made the movies and those who watched public and peer movies. However, those excluded from these activities appeared to have had no positive emotional experience at all thus echoing the findings that “technology is not a delivery vehicle that simply delivers information, but a cognitive partner that amplifies or augments student learning” (Angeli & Valanides, 2008, p.159).

Watching well-made movies from the internet were preferable to watching poorly made movies by their peers but those constructing their own movies reported extremely positive experiences and deep learning about themselves, underlining the social constructionist theory of the value of constructing one’s own content. Content knowledge (CK) refers to the educators’ understanding and knowledge of what is to be taught which is different from grade to grade and subject to subject. In this case study EI was the ‘content knowledge’ and was not explicitly delivered or taught by the educator except for the pedagogical choice of inspirational public movies and repeated tests of EI (SSEIT). This underlies the fact that content knowledge does not always stem from the teacher but is often constructed by the student as described by the ICT-TPCK model.

Therefore, a wider interpretation of content knowledge (CK) needs to be incorporated in the TPCK model and one that, to a large degree, is addressed in the ICT-TPCK model. With Web 2.0 tools, students can research and create their own learning material and present it in their own unique way. As stated by Robin (2008) earlier, the way in which students are ‘customizing and personalizing’ Web2.0 tools is changing the way they do things and this includes the way students learn - collaboration and peer-education is key to these changes. Perhaps the top level

of transformation of all aspects of TPCK in the ICTeTD model best describes the level that has been reached through this study. However, little credence is given to the students in these various TPCK models – it is all assessed as levels of teacher development. Perhaps a more collaborative two-way model will emerge as the role of teachers becomes more and more of a skilled facilitator rather than one who imparts content knowledge.

Pedagogical knowledge (PK) is the “educators’ deep knowledge about the processes and practices or methods of teaching and learning” (Mishra & Koehler, 2009, p.64). This knowledge is about the practice of teaching and includes an understanding of theories of learning to do with cognitive, social, and developmental functioning. In this study, the educator/researcher had an understanding of the importance of EI in the 21st century and therefore the intervention was to determine whether it could foster trait EI as well as develop other skills in the classroom.

Digital storytelling was used as the intervention as the educator/researcher understood it to have been a positive experience in other research with teens, as well as being highly regarded by Gen Y students as a means of learning. This was borne out by the negative comments made by those who had no intervention (of digital storytelling) and the positive comments of those who either made or watched them. From a social constructionist viewpoint, the creation of one’s own stories allows different cultural viewpoints to be expressed and this was borne out by many students commenting on how they now had a newer understanding and empathy of certain issues as well as the fact that the group-work allowed them to resolve conflicting ideas and gain a newer perspective. Again, it was seen from this study that even pedagogical knowledge was shared by both teacher and student and was not always in the teacher’s domain. Students understand what their peers enjoy and created material that suited different learning styles, as happens in peer-education.

Pedagogical content knowledge (PCK) refers to the way an educator interprets and adapts teaching matter to present to the student in order to facilitate learning and is content-bound in that the content often dictates the methods of teaching. However, it also refers to the tailoring of the content to suit the student’s learning style and prior knowledge. Again, as there was little content matter presented by the educator, there was very little application of the model here except in that inspirational digital stories were shown because it was understood to be a mode of learning which Gen Y teens appreciated and the brief was designed with the student in mind. The main content was created by the students and was a form of peer-education that was highly effective, thus pointing out the shortfall of the TPCK model in not addressing the shift in collaborative learning that is the hallmark of Gen Y and those using Web 2.0 tools. The ICT-TPCK model is therefore the better fit for viewing this study.

Technology knowledge (TK) is a concept that involves the continual (and evolutionary) use of technology and resources over time - ranging from chalkboards to digital multimedia tools. The crucial factor is the use of the correct tools to do the job rather than using technology for technology sake. Not only are the tools used for processing and presenting information but also as a means to process and communicate information. It is open-ended as technological advances are so rapid and requires the user to be engaged in this activity over a lifetime. This refers to the educators' use of technological tools with which to explore, explain, and facilitate the passing on of content knowledge. It implies a Web 1.0 type of mentality where the educator presents knowledge through technology in a way that best suits the subject matter (CK). Instead, the classrooms of today, need to be run more in a Web2.0 manner with collaborative efforts between educator and student as in the ICT-TPCK model and would also fall into the top level of integration in the ICTeTD model where context would take into account the students' contribution (although the same can be argued for the TPCK model).

Technological content knowledge (TCK) refers to the understanding of how technology changes representation (and therefore, learning and teaching) of content knowledge. Certain technologies lend themselves to certain types of content e.g. microscopes and science. The educator needs to have a deep understanding of how to integrate the best technology for the subject matter being taught – again, technology used for technology's sake can often be detrimental to learning. In this study, the students were free to use whatever they needed to express their story so TCK was student-centred. However, the brief was to create a digital story (stop-frame or video) so clearly they were limited to Bloggies, cameras, webcams and cell phones and the use of Movie Maker, iMovie, Garage Band, Audacity and other editing software.

Technological pedagogical knowledge (TPK) is an understanding of how technological tools can transform or constrain teaching and learning. "TPK requires a forward-looking, creative, and open-minded seeking of technology use, not for its own sake but for the sake of advancing student learning and understanding" (Mishra & Koehler, 2009, p.66). In this study the students had free choice to use the technology which they deemed the best way to express themselves so again this aspect of the TPCK model is teacher referenced rather than student referenced.

Context in TPCK refers to the unique circumstances or contexts within the classroom setting which in this study took place in the computer room where the students had their lessons but more often they took the project home or somewhere in the school where they could have the correct background for their stories. In the digital and social networking age where e-learning is gaining momentum, learning does not always happen in the classroom setting and does not

always imply an educator is present. Again, there is a need to extend the model to accommodate these ideas. Context here would also refer to the student-centred aspect of the study in that the teacher was seldom physically present during filming.

Technology, Pedagogy, and Content Knowledge (TPCK) is an integration of all core components (content, pedagogy, and technology) and goes further than the separate components in that there needs to be a deep understanding of how to creatively combine the components to best transfer concepts and knowledge, encourage thinking skills and redress difficulties. The complexities of teaching with technology require a fine balance.

ICT-TPCK is an extension of TPCK but acknowledges the special needs of ICT. However, the more extended view of teaching e.g. e-learning, peer education, peer/educator collaboration, implies that learning does not always happen in a one way direction (as in Web1.0 tools) – educator to student. It is ecological and holistic in nature and is two directional (as in Web 2.0 tools) thus creating a dialogue and a chance to collaborate and learn from each other. TPCK fails to address these collaborative efforts in a specific way as the model is designed for assessing and training educators but, with a small modification, it could be used for teacher and student learning. Equally, the developmental model of ICTeTD would take the different levels of proficiency of teachers into consideration, but fail to take the levels of proficiency of students into account. The longer they are exposed to the integration of technology in their lessons, the more innovative their ideas become. These ideas are fed to the teacher and vice versa, forming a transformative collaboration between teacher and student. A model to show this type of interaction and development would give cognisance to the role students take in the 21st century classroom.

ICT-TPCK researchers acknowledge the student-centred aspect of learning, especially with the specific introduction of ICT. They have therefore included an assessment model that relies on self and peer-assessment. They encourage dialogue and negotiation through socio-cognitive conflict and have added extra components – the knowledge the teacher has of students as well as the knowledge of the learning context (Angeli & Valanides, 2008). This makes the model the better fit through which to view this study (and perhaps all Web 2.0 collaborative research). However the researchers also found that, in order for the “dynamic transactional relationship” between facets of TPCK (Koehler *et al.*, 2007, p.741) to be realised, teachers need to be trained. It is difficult to ascertain whether this is true from this study as the principal researcher is an ICT teacher (though not formally trained) and has never been trained in the integration of ICT into education. Yet the results showed a transformation of those involved in creating digital stories – perhaps due to the constructionist nature of the task rather than the educator’s

presentation of the content matter? This would need to be borne out with further, more focussed research.

5.3 SOCIAL CONSTRUCTIONISM

Digital storytelling seen through the lens of social constructionism proved to be a worthwhile, empowering, and exciting exercise for most students and there was a greater appreciation of shared issues with feelings of not being alone with their problems. Issues dealt with teenage pregnancy, bulimia, and death of a friend, peer pressure and all the problems of teens growing up in the Conceptual age of technology and Web 2.0 tools. Cultural aspects of religious groups were also featured as a means to highlight and inform peers that there were more similarities than differences – they were not exempt from dealing with all the problems of other adolescent cultural groups. Social constructionists claim that learners learn best when making their own material and the learning is even more effective when the learner experiences the product as meaningful (Papert & Harel, 1991). This is borne out by the positive statements of those who constructed their own digital stories. As the brief was quite broad –“Inside Outside”-it allowed for individual and group interpretation that was meaningful and desired as a focus for their stories. It would therefore appear that, when a certain amount of freedom is given within a peer-educator/self-constructed artefact, learning is more meaningful. However, more research would be needed to compare different forms of self-constructed artefacts to determine whether this is indeed the case.

The collaborative skills needed in the Conceptual age where empathy, story, design, symphony, play and meaning are the necessary skills, may mark the end of strongly teacher -prescribed learning materials. The need to be able to experience ‘high touch’ and ‘high concept’ (Pink, 2005, p.2) in the 21st Century (which is a mark of someone adept at interpersonal relations and with high emotional intelligence) seems to embrace the social constructionists’ view of education, where learning happens while constructing learning materials, often in collaboration (either virtually or in reality).

Commentary on the social network VoiceThread, which featured the movies, gave positive feedback to peers and constructive suggestions for improvements. Group-work gave opportunities for conflict resolution and understanding others’ point of view as well as proving to be a source of new ideas. Therefore, despite groups having various problems, collaborative efforts in groups was highly favoured.

5.4 SUMMARY

Quantitative and qualitative data was discussed with reference to the different findings and group-work was seen to have been a positive experience.

The study was viewed through the TPCK lens and found areas in the model that were limited to a one-way teacher exchange with students. It was suggested that the model could be modified to include the social constructionist view of students constructing their own knowledge base and peer education, as well as the more collaborative efforts of Gen Y students with each other and with the teacher. The ICT-TPCK model that had a more student-centred approach was seen to be the best fit for this case study, although the developmental aspects of the ICTeTD model were acknowledged.

The social constructionist's view of education was discussed as the best underlying theory for the use of Web 2.0 tools in this peer-education study of digital story-telling, which is collaborative and constructionist by nature and highly relevant for fostering 21st century skills like empathy, story, design, symphony, play and meaning.

Recommendations and conclusions based on this discussion will be the focus of the next chapter.

CHAPTER 6: RECOMMENDATIONS AND CONCLUSIONS

This chapter outlines the core results of this study and points the way forward to further possible research.

6.1 TRAIT EI

Trait EI is defined as a personality construct or behaviour tendency as opposed to ability EI which is more like IQ – a measure of one's ability (inherent and learned). Trait EI is tested via self-report tests and therefore reflects the self-perception of the individual rather than the actual ability.

There is much debate as to what is included in trait EI and whether it is, in fact, a separate construct from EI in general. Tests for trait EI are normally used in determining whether a person's trait EI scores correlate with other factors such as leadership abilities, delinquency, scholastic ability and the like (Petrides et al., 2004) rather than a comparison against itself (earlier scores). Research has shown that high trait EI is desirable for many reasons, especially as an indication of leadership ability and more specifically, for this case study in South Africa, for identifying and fostering a future generation with 21st century skills. Conversely, research has also shown that high trait EI is genetically linked to pathological personality traits like narcissism (Petrides *et al.*, 2010a) and therefore the only EI construct where less is regarded as more (Sevdalis *et al.*, 2007). Other studies have also found trait EI to be quite stable over time (Pool & Qualter, 2011).

Therefore, it has not yet been determined if trait EI can be fostered through meaningful activities and in fact, whether it should be. Research has indicated that emotional intelligence *can* be developed (Dulewicz & Higgs, 1999) and trait EI showed a significant change amongst young adults after training (Nelis et al., 2009) and persisted after time but this could be attributed to emotional competencies rather than trait EI. Therefore, the meaning of the construct trait EI is still unclear and also whether it is wholly separate from EI.

In this case study of eight groups of teens, individual trait EI tests were given to each group and then repeated after the groups received different interventions. These trait EI scores were compared with the baseline test score as well as subsequent scores, to determine whether there was any meaningful change in the scores over a 9-month period. Although the results showed no significant changes, they could provide information about the construct trait emotional

intelligence. Further research linking data from trait EI scores with ability EI scores in the same sample group could clarify aspects that are common to both constructs as well as those that are mutually exclusive.

In this case study, it appears that perception of the subjects' emotions and emotional efficacy did not change, despite the participants undergoing interventions (digital story-telling) that have been found previously to be positive and uplifting emotional experiences in education (Rudnicki et al., 2006). Further research could provide some insight into the questions this conundrum invokes as two possibilities exist:

1. Problems with the testing of SSEIT (cultural validity, sample size, acclimatization, lack of sensitivity of test etc.)
2. SSEIT measured correctly and trait EI remained stable. The qualitative data measured some other aspect of EI unrelated to trait EI.

The questions arising are:

- Is it possible to change trait EI? Alternatively, is one's perception of one's emotional self reliant upon other factors – IQ, self-image?
- Does making and watching digital stories foster other aspects of EI viz. ability? On the other hand, did the intervention have no effect at all? This last question is partly answered by the qualitative data but needs research that is more rigorous in order to make definitive statements.

6.1.1 SSEIT

The SSEIT has been widely used as a self-report measure for trait EI (Perez et al., 2005). The reliability and validity of using the test amongst teens in Australia was found to be a 'distinct and useful measure' (Ciarrochi *et al.*, 2001, p.1105) and so was age appropriate. The test was easy to administer in a classroom situation but would have been more positively viewed (according to the participants) if it had been an online test and scoring more visual (emoticons instead of numbers). In addition, some questions were not understood, due to either vocabulary issues (or perhaps a cultural issue) in the tests – common ones were the use of 'confide' and 'non-verbal' in questions 4 and 5:

4. *Other people find it easy to confide in me*
5. *I find it hard to understand the non-verbal messages of other people.*

Participants were often annoyed at the repeated testing feeling that their responses were unchanged. However, those respondents who were part of the interventions reported a positive side effect of the repeated tests viz. they began to think about the questions between tests and could therefore respond more honestly in subsequent tests. Those who were in the control group responded negatively with regard to the tests and there was no reporting of any positive experiences by the students in these groups with regard to the repeated testing.

What exactly did SSEIT measure? If the qualitative evidence showed both positive and negative experiences were enjoyed by those who were involved in the intervention and the control, why did these experiences not show on the SSEIT scores? These questions could lead to further research that could again clarify the construct trait EI. Other questions arising are:

1. Was the sample size for quantitative research too small?
2. Was the SSEIT the correct tool to use? Is it sensitive enough? Should the tests have been further apart? Would a test a year later be of any significance?
3. Did the repetitive use of the SSEIT create boredom and therefore influence results as discussed earlier?

Quantitative data is by necessity an average score and may need a much larger sample group to show significant findings. It is clear from the qualitative data that there were changes in the groups that were not evident in the quantitative data. This may present findings that underline the need for mixed-method research in education especially when an integrated approach is used to allow both kinds of data to inform and create a rich holistic view of studies. Had only quantitative data been used in this study, the results would have been very different and therefore not indicative of the full picture.

Cultural variability

Although the SSEIT has been used extensively in various countries, there is little evidence of a similar study using the measure in South Africa therefore, extrapolation of results from other studies to South Africa (and vice versa) needs further research.

Multiple administration of test

E-mail communication with Dr Nicola Schutte (see appendix C), who provided the SSEIT for trait EI, conveyed that there was a lack of data with regard to acclimatization of repeated testing of SSEIT. However, there was an acknowledgment that, as the control group would undergo the

same repeated tests, they would allow for adequate comparison as acclimatization would be equal for the two groups viz. the differences between the groups should not be due to taking the measure multiple times. As discussed earlier, the acclimatization may have nullified the testing for all groups so that no significant changes were seen. This clearly needs further research to verify whether this is indeed the case.

6.1.2 SEMI-STRUCTURED QUESTIONNAIRES

The qualitative data showed positive effects of making movies and group-work that contrasted with the quantitative data. Questions arising from this are:

1. Were the positive experiences of digital storytelling an indication of some form of EI (trait or ability EI) or something else?
2. Group-work added to the enjoyment and understanding of each other – is this trait or ability EI or something else?
3. To what extent did the SSEIT act as an intervention as well as a measuring tool, especially for those who made digital stories, as they were the only group who mentioned this role of SSEIT.

Despite the questions, it is clear that the qualitative data gave a wealth of information; not only about digital storytelling but also about group-work and writing the SSEIT, especially the insight that the repetitive nature of the SSEIT actually fed into and helped foster a new understanding of emotions. Other information was informally added into the questionnaires by the students e.g. suggestions for redesigning the SSEIT and expressions of frustration and anger at the repeated testing. The qualitative data gave a greater understanding of students' experiences as a whole and was instrumental in showing that mixed method research is a more holistic way of seeing a contextualised picture of a study, than using only one form of data. By comparing both types of data, it is apparent that the quantitative data is lacking or that it was the incorrect measure to use for this study. However, if it did measure correctly, it did not measure the positive changes expressed in the qualitative data. This suggests that the qualitative data does not belong to the construct, trait EI.

Further research would be needed to investigate this discrepancy.

6.2 TPCK, ICT-TPCK & ICTETD

These conceptual models were used as a lens to view this case study viz. whether the making of digital stories fostered trait EI.

The TPCK model did not include separate diagrammatic evidence of student involvement, especially collaboration with peers and the teacher. Instead, this is included as part of the 'context' section of the model. The researcher has learnt a great deal of technological skills from the students themselves and, as has been mentioned in this dissertation and therefore the collaborative aspect should have a separate delineation.

Gen Y students are clearly accustomed to, and enjoy, collaborative efforts. The TPCK model explains the educator's pedagogical experience in the classroom and, although it has been described as a 'dynamic' process, it does not emphasize the fact that Gen Y students are often more familiar with Web 2.0 tools than their educators and can offer valuable collaborative learning. The suggestion of TPCK having a separate strand called ICT-TPCK, which adds a more student-centred approach, underlines the shortfall of TPCK. The ICTeTD model brings into focus the need for a developmental model of the integration of technology into education but also fails to clearly conceptualize the collaborative input from students with each other and with the teacher. Research with this in mind would open the TPCK model to further debate on student collaboration in the classroom and would incorporate this as a very valuable contribution to learning 21st century skills.

Conversely, merely adding collaborative efforts on to an existing diagram or model may be akin to placing a new paradigm on the old. It may be that a new paradigm needs a completely new model. Web 2.0 has changed the pedagogical landscape and a mind-shift is needed in order to understand how best to incorporate these tools in education. Perhaps this new mind-shift needs a completely new model as the TPCK and its variants are still teacher-centric?

6.3 MIXED METHOD RESEARCH

Although the quantitative data was easy to obtain and analyse, the qualitative data was rich in description and provided important information that posed many questions for further research. Using a mixed method gave insights into aspects and nuances which would have been missed had only one method been used. This further underscores the value of MMR. In this case, had only one (quantitative) method been used, perhaps wrong conclusions might have been drawn, especially when constructs are ill-defined and incorrect measures may be in place. The value of qualitative data in educational settings is evident in this case and showed a way forward for further research. Questions arising from this research, where the quantitative data showed no change in trait EI after the intervention of digital story-telling, yet the qualitative showed many very positive experiences, could give impetus for MMR to be used more extensively, especially in education.

6.4 RECOMMENDATIONS

This case study, on the impact of digital storytelling on trait EI, has yielded some interesting findings. These involve the positive effects of digital storytelling and group-work, more about the construct trait EI, limitations of the TPCK model, differing qualitative and quantitative results and the efficacy of MMR in education. Questions have been posed which could lead to further research and give rise to certain recommendations:

- Web 2.0 tools work successfully in the classroom and digital storytelling has positive results. However, projects need to be short and easily managed otherwise, they can become taxing with the addition of technological devices, especially if the school provides these. A suggestion is that the students use their cell phones only, provided they have phones with good digital cameras.
- Digital storytelling (in its widest sense) could be a way for training teachers in integrating technology into education (TPCK) where the content matter is of more importance than the technology used. The most basic digital story (still photographs or diagrams in Picture story for example) could be used as a starting point so that teachers are not intimidated by complex ICT related projects.
- Using MMR in education gives a more complex understanding of a situation and allows for contrasting, comparing, and integrating results or clarifying constructs.
- SSEIT could be administered online, could be semantically altered to suit South African students and the scoring could be changed to icons like emoticons to suit Gen Y students. It could also be used in conjunction with other variables like IQ and ability EI to further understand the construct trait EI (especially with regard to interventions as in this study).
- Further research in this area could involve mixed sex schools, rural schools, and larger sample sizes.
- Qualitative data (questionnaires) could be administered online (on Survey Monkey for example).
- TPCK model should be modified to include specific contextualised input from students collaborating with each other and with the teacher.

6.5 SUMMARY

The discussion around trait EI was continued and questions posed of the qualitative and quantitative results. Mixed method research was discussed as being a holistic way to understand a complex situation and yielded some interesting findings.

Recommendations were made for future research in this area of research.

6.6 CONCLUSIONS

This research looked at the need for 21st century skills such as empathy, story, design, symphony, play, and meaning. Those who have these skills are adept at interpersonal relations and have a high emotional intelligence. Moreover, research in South Africa shows the relationship between effective leadership, productivity and emotional intelligence.

Therefore this case study investigated current trends of Generation Y teens and their enthusiasm with Web 2.0 technology. They were seen to seek collaboration and community with their peers through social networking and the like, viz. through technological channels rather than in person. They also base their core values on their peers rather than their parents and have an increased likelihood for basing their decision-making activities on peer responses especially that of their core group of close friends. However, they still fail to experience a real connection with their friends and do not feel understood or have a sense of community – the thing they desire the most. These feelings of being connected and part of a community are core experiences in a person with high emotional intelligence. The purpose of this case study was to examine whether it is possible to foster trait emotional intelligence using Web 2.0 tools, amongst female teens in a classroom setting in South Africa.

Trait emotional intelligence is a greater measure of validity and consistency than ability EI and the SSEIT was administered to determine trait EI scores throughout this case study.

Previous research shows that digital storytelling can be a successful educational tool to deal with emotive issues. This research therefore aimed to test whether girls in their early teens, in South Africa, who use Web 2.0 tools to create stories in digital format develop a higher level of trait emotional intelligence than their counterparts that did not do so.

The case study involved 178 female teens in South Africa in an independent school setting. Four groups of Grade 9's and four groups of Grade 10's were subjected to various interventions

and then tested for trait EI (four times over 9 months) as well as answered a semi-structured questionnaire.

Quantitative data showed no significant changes in Trait EI over a period of 9 months in any of the groups, however, qualitative data showed that those who had made their own digital stories had a very positive experience and enjoyed working in groups. The other group who matched this group's enthusiasm was the group who watched public digital stories and to a lesser degree, the group who watched peer and public stories – badly made peer stories annoyed them and detracted from their enjoyment. It is clear that well-made digital stories, whether in the public domain or not, are favoured over badly made peer stories.

Trait EI was measured with SSEIT four times over the 9 months and this repetitive testing created annoyance amongst the students but more so, for those who were in the control group. On the other hand, the more the groups enjoyed the intervention, the more they 'bought into' the repetitive testing, using the questions to ask themselves more searching questions about their emotions in each successive test.

The digital stories were posted on to a social networking site for peers' comments and an assessment tool was created for peer-assessment and peer-recommendations.

It is not clear from this study whether digital storytelling fosters trait EI because of conflicting data results but questions have been raised about the size of the sample and the repetitive testing of SSEIT as well as the lack of understanding around the construct trait EI. However, from the qualitative results it is clear that digital storytelling received a positive (emotional) response from all, even if they were public stories, and more so if the students made them themselves. Added to which, group-work (and collaboration) was highly prized, as was the use of technology in the classroom. The TPCK model, as well as the ICT-TPCK and ICTeTD models were seen to have certain limitations, thus highlighting the ever-evolving world of technology and especially, technology in the classroom.

Further research in this field could clarify whether other psychological constructs (ability EI) could be fostered through digital storytelling, thus leading the way for teachers to educate in a manner that embraces and teaches 21st century skills. It could also clarify which construct the qualitative data measured and whether trait EI did stay stable throughout.

The need for South Africa to produce transformational leaders who, in turn, foster a workforce who have people skills, high emotional intelligence and are capable of being innovative and

creative has never been more urgent in the present economic and political climate. Teenagers are our future leaders and teachers are the key to inculcating 21st century skills so that students, as proficient users of Web 2.0 tools, have the skills needed to compete in a global context and to be able to contribute creatively to the future of the planet.

APPENDIX A – STUDY DESIGN

CLASS	Procedures over a 6 month period						
4D Control	Test EI	No intervention	Test EI	No intervention	Test EI	No intervention	Test EI
3C Public stories only	Test EI	Watch public (YouTube) digital stories	Test EI	Watch public (YouTube) digital stories & comment	Test EI	Watch public (YouTube) digital stories & comment	Test EI
2B Public & peer stories	Test EI	Watch public (YouTube) digital stories	Test EI	Watch peer & public (YouTube) digital stories & comment	Test EI	Watch peer & public (YouTube) digital stories & comment	Test EI
1A Public, peer & create own stories	Test EI	Create & watch own digital stories as well as watch public (YouTube) stories	Test EI	Create & watch own digital stories as well as watch public (YouTube) stories & comment	Test EI	Create & watch own digital stories as well as watch public (YouTube) stories & comment	Test EI

APPENDIX B - SSEIT

The Assessing Emotions Scale (SSEIT)

Directions: Each of the following items asks you about your emotions or reactions associated with emotions. After deciding whether a statement is generally true for you, use the 5-point scale to respond to the statement. Please circle the “1” if you strongly disagree that this is like you, the “2” if you somewhat disagree that this is like you, “3” if you neither agree nor disagree that this is like you, the “4” if you somewhat agree that this is like you, and the “5” if you strongly agree that this is like you.

There are no right or wrong answers. Please give the response that best describes you.

1 = strongly disagree

2 = somewhat disagree

3 = neither agree nor disagree

4 = somewhat agree

5 = strongly agree

- | | | | | | |
|--|---|---|---|---|---|
| 1. I know when to speak about my personal problems to others. | 1 | 2 | 3 | 4 | 5 |
| 2. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them. | 1 | 2 | 3 | 4 | 5 |
| 3. I expect that I will do well on most things I try. | 1 | 2 | 3 | 4 | 5 |
| 4. Other people find it easy to confide in me. | 1 | 2 | 3 | 4 | 5 |
| 5. I find it hard to understand the non-verbal messages of other people. | 1 | 2 | 3 | 4 | 5 |
| 6. Some of the major events of my life have led me to re-evaluate what is important and not important. | 1 | 2 | 3 | 4 | 5 |
| 7. When my mood changes, I see new possibilities. | 1 | 2 | 3 | 4 | 5 |
| 8. Emotions are one of the things that make my life worth living. | 1 | 2 | 3 | 4 | 5 |
| 9. I am aware of my emotions as I experience them. | 1 | 2 | 3 | 4 | 5 |
| 10. I expect good things to happen. | 1 | 2 | 3 | 4 | 5 |
| 11. I like to share my emotions with others. | 1 | 2 | 3 | 4 | 5 |
| 12. When I experience a positive emotion, I know how to make it last. | 1 | 2 | 3 | 4 | 5 |
| 13. I arrange events others enjoy. | 1 | 2 | 3 | 4 | 5 |
| 14. I seek out activities that make me happy. | 1 | 2 | 3 | 4 | 5 |
| 15. I am aware of the non-verbal messages I send to others. | 1 | 2 | 3 | 4 | 5 |

16. I present myself in a way that makes a good impression on others. 1 2 3 4 5
17. When I am in a positive mood, solving problems is easy for me. 1 2 3 4 5
18. By looking at their facial expressions, I recognize the emotions people are experiencing. 1 2 3 4 5
19. I know why my emotions change. 1 2 3 4 5
20. When I am in a positive mood, I am able to come up with new ideas. 1 2 3 4 5
21. I have control over my emotions. 1 2 3 4 5
22. I easily recognize my emotions as I experience them. 1 2 3 4 5
23. I motivate myself by imagining a good outcome to tasks I take on. 1 2 3 4 5
24. I compliment others when they have done something well. 1 2 3 4 5
25. I am aware of the non-verbal messages other people send. 1 2 3 4 5
26. When another person tells me about an important event in his or her life, I almost feel as though I experienced this event myself. 1 2 3 4 5
27. When I feel a change in emotions, I tend to come up with new ideas. 1 2 3 4 5
28. When I am faced with a challenge, I give up because I believe I will fail. 1 2 3 4 5
29. I know what other people are feeling just by looking at them. 1 2 3 4 5
30. I help other people feel better when they are down. 1 2 3 4 5
31. I use good moods to help myself keep trying in the face of obstacles. 1 2 3 4 5
32. I can tell how people are feeling by listening to the tone of their voice. 1 2 3 4 5
33. It is difficult for me to understand why people feel the way they do. 1 2 3 4 5

APPENDIX C – SEMI-STRUCTURED QUESTIONNAIRES

Public You Tube digital story feed-back

Thank you so much for participating in this research! Your feed-back will allow us to evaluate whether digital story-telling has a positive or negative influence on your thinking & emotions. Please could you answer, as honestly as possible, the following questions – all answers are strictly confidential and will be used for research purposes only. Your name will NEVER be divulged.

Watching You Tube movies in class:

What was your experience in watching public movies (Nabubomi – high school Eastern Cape pupils, Susan Boyle, Nick Vujicic -no arms, no legs, Famous Failures-Walt Disney, USA presidents etc, various adverts, Connie from Britain's got Talent etc) Give both positive & negative experiences & feelings.

Emotional Intelligence test:

In answering the test, what were your experiences/feelings about the first test, second test & third test?

Other comments:

Any other information you would like us to know which could help us to evaluate the research more meaningfully?

Digital story-telling feed-back

Thank you so much for participating in this research! Your feed-back will allow us to evaluate whether digital story-telling has a positive or negative influence on your thinking & emotions. Please could you answer, as honestly as possible, the following questions – all answers are strictly confidential and will be used for research purposes only. Your name will NEVER be divulged.

Movie-making:

What was your experience in making the movie (Inside Outside)? Give both positive & negative experiences & feelings.

Groupwork:

What was your experience in working in a group? Would you have rather worked alone or did the group add value to the process?

Logistical & technical hitches:

What problems did you encounter which helped or hindered the making of the movie?

Emotional Intelligence test:

In answering the test, what were your experiences/feelings about the first test, second test & third test?

Other comments:

Any other information you would like us to know which could help us to evaluate the research more meaningfully?

Digital stories of peers feed-back

Thank you so much for participating in this research! Your feed-back will allow us to evaluate whether digital story-telling has a positive or negative influence on your thinking & emotions. Please could you answer, as honestly as possible, the following questions – all answers are strictly confidential and will be used for research purposes only. Your name will NEVER be divulged.

Movie-making:

What was your experience in watching the movies of your peers (Inside Outside)?
Give both positive & negative experiences & feelings.

Emotional Intelligence test:

In answering the test, what were your experiences/feelings about the first test, second test & third test?

Other comments:

Any other information you would like us to know which could help us to evaluate the research more meaningfully?

Emotional Intelligence test feed-back

Thank you so much for participating in this research! Your feed-back will allow us to evaluate whether digital story-telling has a positive or negative influence on your thinking & emotions. Please could you answer, as honestly as possible, the following questions – all answers are strictly confidential and will be used for research purposes only. Your name will NEVER be divulged.

Making and Watching You Tube movies in class:

What was your experience in being excluded from making or watching digital stories (movies) in computer class? Give both positive & negative experiences & feelings.

Emotional Intelligence test:

In answering the test, what were your experiences/feelings about the first test, second test & third test?

Other comments:

Any other information you would like us to know which could help us to evaluate the research more meaningfully?

APPENDIX D – E-MAIL COMMUNICATION DR SCHUTTE

From: Nicola Schutte [nschutte@pobox.une.edu.au]
Sent: Wednesday, October 27, 2010 12:41 AM
To: Gaye Pieterse
Subject: RE: SSEIT test

Hi Gaye,

I think that giving the one control group the test at exactly the same intervals as the intervention groups will allow for adequate comparison.

Kind regards,
Nicola

At 17:16 26/10/2010, you wrote:

>HI Nicola

>I have 4 groups - one is the control with no intervention.

>The other 3 groups have varying interventions over a period of 3 months with 3 tests, thereafter final testing after 6 months.

>

>Yes, I agree that with the control group I can compare. I wonder if I should have another control group who get tested once at the beginning and then again after 6 months to see what effect repeated testing has?

>

>Many thanks

>Gaye

>-----Original Message-----

>From: Nicola Schutte [mailto:nschutte@pobox.une.edu.au]

>Sent: Tuesday, October 26, 2010 12:50 AM

>To: Gaye Pieterse

>Subject: RE: SSEIT test

>

>Hi Gaye,

>

>I wish I knew to what extent participants would acclimatize after multiple administrations of the test. I think it would depend in part on the time span between the interventions. I would think that for the follow-up of 3 months there would not be much of a carry-over effect. Will you have a control group not receiving interventions? This of course would be the most sound methodology and when you compare the two groups, acclimatization would be equal for the two groups, so that differences between the groups should not be due to taking the measure multiple times.

>

>Best wishes,

>Nicola Schutte

>At 20:36 25/10/2010, you wrote:

>>Hi Dr Schutte

>>

>>I am presenting my proposal to the Higher Committee next week (using your test) and just have one query. My methodology is to test, insert an intervention, test again, insert another intervention, test again. After 3 months I will test again. That means that I will be using your test 4 times with the same group.

>>

>>Would this alter the validity- would they 'acclimatize' to it? This concern was raised by the faculty members and I am not sure how to address it?

>>

>>Regards

>>Gaye

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ETHICAL CLEARANCE LETTER



16 November 2012

Mrs Gaye Pieterse 210538200
School of Management, IT & Governance
Westville Campus

Dear Mrs Pieterse

Protocol reference number: HSS/1342/010M
New project title: Digital Storytelling and Teenage Emotional Intelligence: A South African Study

Approval and change of dissertation title

I wish to confirm that ethical clearance has been granted full approval for the above mentioned project:

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach/Methods must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number. Please note: Research data should be securely stored in the school/department for a period of 5 years

Best wishes for the successful completion of your research protocol.

Yours faithfully

.....
Professor Steven Collings (Chair)

cc Supervisor Rosemary Quilling
cc Academic leader Professor KK Govender
cc School Admin. Ms A Pearce

.....
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