

Using the Bridge21 pedagogical model of 21st
century teaching and learning to teach new
literacies in second-level English education,
and the impact on students' attitudes

A Thesis Submitted in Fulfilment of the Requirements for the
Award of Doctor of Philosophy

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Declaration

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Summary

The development and proliferation of 21st century (21C) information and communication technology (ICT) has enabled new ways of reading, writing and communicating – or *new literacies*. These *new literacies* (or “21C literacies” (National Council for Teachers of English [NCTE], 2013)) are concurrently digital, multimodal and collaborative, and they require new skills (Leu, Kinzer, Coiro, & Cammack, 2004; Street, 2003). Second-level English education – a primary place for the development of literacy skills – is adjusting to include these new literacies for two main, interwoven reasons. First, some adolescents are using new literacies in outside-of-school contexts, creating a disconnect with the conventional literacy they experience in formal educational settings. It is argued that integrating new literacies in English could engage students more in the learning process (Alvermann, 2008; Hutchison & Reinking, 2010; O'Brien & Bauer, 2005). Second, young people need to develop key new literacy skills for today's economy and society and for future success (New London Group, 1996; Leu et al., 2004); although some adolescents are frequent users of ICT and new literacy practices, they are not necessarily proficient in essential *new* literacy skills (Dwyer, 2012; Leu, Everett-Cacopardo, Zawilinski, McVerry & O'Byrne, 2012; Leu, Kinzer, Coiro, Castek, & Henry, 2017).

Internationally, curricula have been modified to include new literacy skills as key learning outcomes, yet two main problems related to implementing these changes are present. *Problem Statement 1* (PS1): There is limited understanding of how and why teaching new literacies impacts students' attitudes in English, as relatively few studies – specifically in the English education context – have been conducted. Of course, technology and the new literacies enabled by ICT are only as powerful as the approaches in which they are used (Jacobs, 2012), yet fewer studies investigate *pedagogies* for effectively teaching new literacies in English education. *Problem Statement 2* (PS2): English teachers report needing guidance in how to teach new literacies effectively – to engage students, meet curricular aims, and/or develop their students' literacy skills (Hundley & Holbrook, 2013).

This Ph.D. research sought to address these issues. It was hypothesised that the Bridge21 pedagogical model for 21st Century (21C) teaching and learning – a technology-mediated, team-based and project-based approach (Lawlor, Conneely, Oldham, Marshall & Tangney, 2018) –

could be adapted and utilised as a framework for teaching new (21C) literacies in second-level English education. To investigate the effectiveness of this approach to teaching new literacies, students' attitudes (engagement and confidence) in English skills and content were primarily considered, and research questions were formulated accordingly. A methodological approach that utilised both case studies and elements of action research was determined to be the most suitable approach to answering the research questions. The research design involved three phases: (1) an exploratory case study with students, (2) an explanatory case study with students, and (3) an exploratory case study with teachers (Yin, 2013). The Exploratory Case Study: Students was used to design and pilot learning interventions, develop data collection tools, and refine analysis procedures. Following on, the Explanatory Case Study: Students was designed to analyse the impact of this adaptation of the Bridge21 approach for teaching new literacies on students' attitudes in English. Finally, the Exploratory Case Study: Teachers involved investigating educators' experiences using the adapted approach in English classes. Both qualitative and quantitative methods were employed to answer the research questions.

The results showed significant positive changes in students' engagement and confidence in English following the learning interventions, suggesting Bridge21 can be an effective pedagogy for teaching new literacies in the English education context. Contributions (C1-4) of this Ph.D. research address the problem statements (PS) and include:

C1: A deeper understanding of how and why a particular pedagogical approach to teaching new literacies impacts students' attitudes in English (PS1)

C2: The development of a validated quantitative tool (the ETAS) that can quickly measure the effects of learning interventions on students' attitudes in English and using technology in English (PS1)

C3: The presentation of a pedagogical approach, Bridge21, for effectively teaching new literacies in English – in ways that improve students' attitudes *and* help meet curricular goals (PS2)

C4: The sharing of the developed approach and various, easily-adaptable resources – activities, projects, lesson plans – with English teachers, and the results of a preliminary investigation into their experiences of using them in their classrooms (PS2)

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Chapter 1: Introduction

1.1 Research Overview

1.1.1 Research Context

The development and proliferation of 21st century information and communication technology (ICT) has enabled new ways of reading, writing and communicating – or *new literacies*. These *new literacies* (or “21C literacies” (NCTE, 2013)) are concurrently digital, multimodal and collaborative, and they require new skills (Leu, Kinzer, Coiro, & Cammack, 2004; Street, 2003).¹ Second-level English education — a primary place for the development of literacy skills — is experiencing changes due to these new modes of communication. Internationally, researchers, administrators and teachers are arguing for more integration of new literacies into English, and changes to curricula are underway, which the author argues can be synthesised into two main, interwoven, reasons.

First, some adolescents use new literacies in outside-of-school contexts, creating a disconnect with the conventional literacy they experience in formal educational settings (Alvermann, 2008). Previous reports suggest that effectively integrating new literacies into school-based English can help engage adolescents in learning English curriculum content and skills (Hutchison & Reinking, 2010; Jacobs, 2012; O'Brien & Bauer, 2005). Because engagement leads to many positive outcomes — increased confidence, development of capabilities and improved achievement — it is a desirable element of educational experiences (Fredricks, Blumenfield & Paris, 2012).

Second, young people need to develop key new literacy skills for today’s economy and society and for future success. Our civic, personal and professional lives have been impacted by ICT and the development of new literacies (Leu, Kinzer, Coiro, & Cammack, 2004; New London Group, 1996; Street, 2003). In order to be successful adults, adolescents need opportunities to develop their own new literacy skills. These competencies include, for example, creating, analysing and critiquing multimedia texts; managing and synthesising multiple streams of information; sharing information for global communities; and building

¹ Section 2.5 provides descriptions of these various terms, as they are used in this thesis.

cross-cultural relationships and solving problems collaboratively (NCTE, 2013). Recent research suggests that adolescents – although frequent users of ICT – are not necessarily sophisticated users, and they do not consider ICT as a resource for learning. In fact, they reportedly struggle in several areas of new literacies, such as accessing, navigating, finding, critically analysing, and synthesising information online (Dwyer, 2012; Leu, Everett-Cacopardo, Zawilinski, McVerry & O'Byrne, 2012; Leu, Kinzer, Coiro, Castek, & Henry, 2017).

Put another way, the rationale for integrating new literacies is to meet (the author's interpretation of) the aims of English education: to help foster the growth of individual students by (1) enriching their understanding of culturally significant literary texts; and (2) developing the literacy skills students need to participate fully in society (Cox, 1988).

The focus on the development of new, or 21C, *literacy* skills in English education, is happening parallel to and within the context of the broader, "21st Century Skills" movement – educators' focus on modifying curriculum standards to emphasise the development of competencies such as problem-solving, creativity, communication, collaboration, and technological fluency (Voogt and Roblin, 2012; U.S.A. National Education Association [NEA], 2015). It has been argued that these are essential skills, which are needed "for work, citizenship and self-actualisation" particularly in the 21st century, as compared to the previous 100 years (Dede, 2010, p. 51). This movement has been criticised, as these were essential skills prior to the 21st century (Silva, 2009); however, the researcher, as others, believes the emphasis upon acquiring them through curricular integration and the potential of technology to assist in this process, makes them different (Dede, 2010; Voogt & Roblin, 2012). These 21C skills have much cross-over with new/21C literacy skills, which also are not necessarily "new" to this century; however, the focus on the role of ICT within them is new, and it creates new skills one needs (see section 2.5). Though the 21C skills movement has been on-going for more than a decade, and curricula have been modified to include these new 21C skills and literacies as learning outcomes, questions remain on how to teach these skills in schools (NEA, 2015).

1.1.2 Problem Statements

Though the literature suggests the potential benefits of and the need to integrate new literacies in English, and English curricula internationally have been modified, the author identified two main problems related to teaching new literacies in English, which this Ph.D. research sought to address.

Problem Statement 1 (PS1): There is limited understanding of how and why using new literacies impacts students' attitudes in English, as relatively few studies – specifically in the English education context – have been conducted (section 2.8). Though the initial available studies have supported the idea that new literacies can engage students more in English, these studies have been limited in size and scope (Andrews, 2007; Jacobs, 2012). This problem is partly due to the limited amount of validated, available data collection instruments (section 4.3). This lack of empirical data is noteworthy, given the myriad changes to curricula and new requirements of English teachers worldwide (section 2.6.3). Further and more nuanced research investigating the impact of new literacies – and approaches to teaching new literacies – on students' attitudes in English education is needed.

Problem Statement 2 (PS2): English teachers report needing guidance in how to teach new literacies effectively – to engage students, meet curricular aims, and/or develop their students' literacy skills (Curwood & Cowell, 2011; Hundley & Holbrook, 2013) (section 2.7). English teachers generally are open to integrating more new literacies (or technology) in their practice (Hutchison & Reinking, 2010), yet they desire more understanding of the impact of new literacies on their students (PS1) and strategies for teaching new literacies. Technology and the new literacies enabled by ICT are only as powerful as the approach in which they are used (Jacobs, 2012), yet fewer studies investigate *pedagogies* for effectively teaching new literacies in English education. Thus, investigations into practical, pedagogical models and strategies for teaching new literacies in English are now needed, as these could support English educators in their practice.

1.1.3 Research Aims

Given the two main problems identified through the literature review, this research had several aims (RA). Each aim primarily related to one of the two problems.

RA1: Develop a deeper understanding of how and why new literacies – and strategies for teaching new literacies in English – impact students’ attitudes in English (PS1)

RA2: Create and validate a reliable data collection tool that could be utilised to quantitatively measure the impact of the learning interventions of this research and other similar studies (PS1)

RA3: Develop a research-based, pedagogical approach for effectively teaching new literacies in the second-level English education context (PS2)

RA4: Create activities, lesson plans and materials for teaching new literacies effectively in the English classroom, share these resources with other educators, and investigate teachers’ experiences using them in the classroom (PS2)

1.1.4 Hypothesis

Bridge21 is one research programme aiming to equip students, and their teachers, with the skills they need to thrive in the 21st century. One aspect of Bridge21 is its pedagogical model, a particular team-based, project-based approach to 21C teaching and learning (Lawlor, Conneely, Oldham, Marshall & Tangney, 2018).

Given the alignment of several key aspects of the Bridge21 philosophy with the ethos of new literacies, Bridge21’s practical approach to implementing technology-mediated learning experiences, and the prior success of Bridge21 as a model of 21C teaching and learning in other contexts (Lawlor et al., 2018), it was hypothesised that the Bridge21 approach could be adapted and utilised as a framework for teaching new (21C) literacies in second-level English education. It was thought that using this model for integrating new literacies could engage students in the learning process, build their confidence in English content and skills, and improve their attitudes toward learning with technology in the English context.

1.1.5 Research Questions

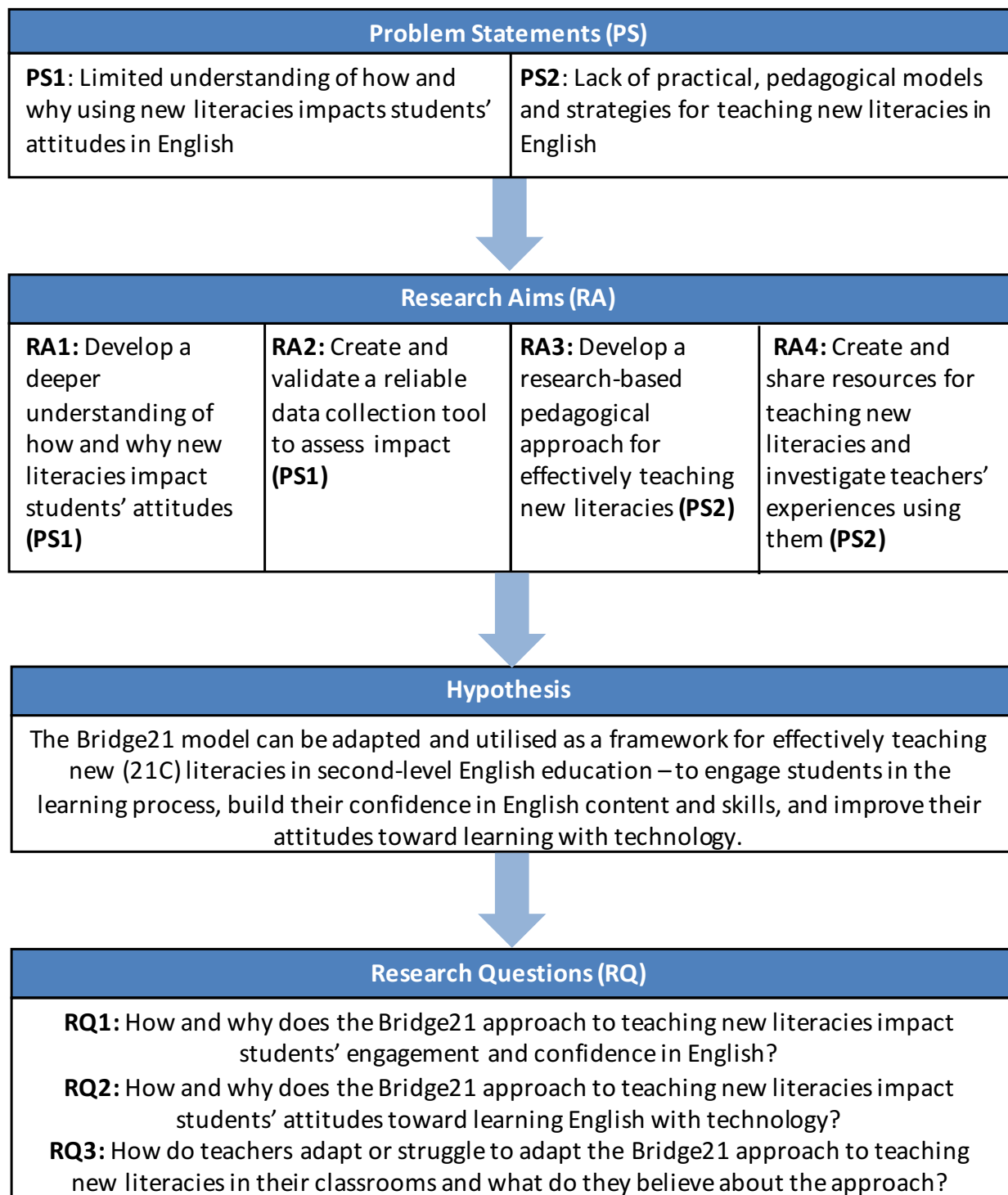
In light of the problems and research aims identified, and the hypothesis that Bridge21 model could be adapted to facilitate the effective teaching of new literacies in the English context, three research questions (RQ) were identified. In the language of the research questions, to keep them concise, the author uses the phrase “the Bridge21 approach to teaching new literacies;” through this phrase, however, she intends to convey the author’s particular adaptation of the Bridge21 model to facilitate the teaching of new literacies in English. She argues that through addressing these research questions, the research problems could be addressed, and the research aims could be met.

RQ1: How and why does the Bridge21 approach to teaching new literacies impact students’ engagement and confidence in English?

RQ2: How and why does the Bridge21 approach to teaching new literacies impact students’ attitudes toward learning English with technology?

RQ3: How do teachers adapt or struggle to adapt the Bridge21 approach to teaching new literacies in their classrooms and what do they believe about the approach?

Figure 1.1: The Development of the Problem Statements, Research Aims, Hypothesis, Research Questions (all paraphrased)



1.2 Methodology Overview

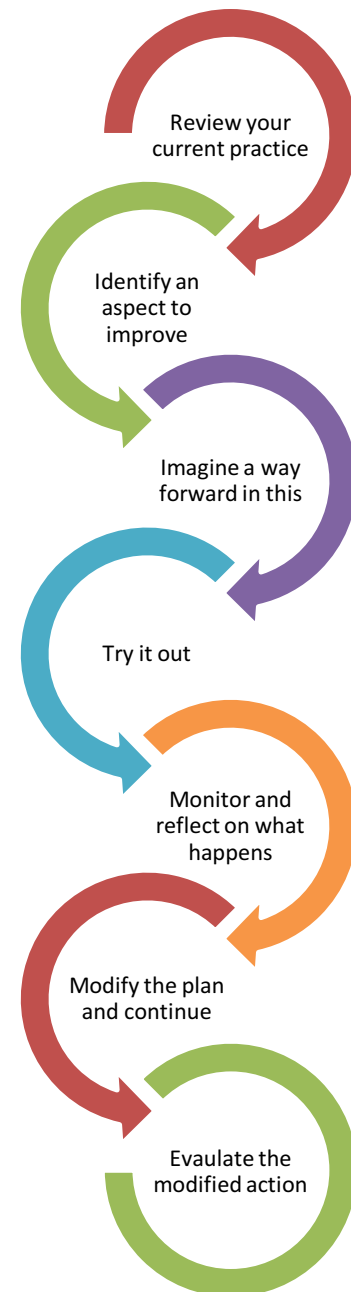
1.2.1 The Methodological Approach

To investigate these research questions and to address the aims, several research methodologies, including action research, design-based research, and case study, were carefully considered (section 4.3). Ultimately, a methodological approach which utilised both case studies (Yin, 2013) and elements of action research (McNiff, 2002) was determined to be the most suitable framework for both theoretical and practical reasons.

A case study is an examination of a specific instance, often used to illustrate a broader point or principle (Cohen, Manion & Morrison, 2011); although a case study can only represent that specific instance, it can lead to analytic generalization, contributing to expanding theory and aiding others in understanding similar instances (Yin, 2009). Through case study, the researcher could draw conclusions that could contribute to deeper understanding within the field and provide guidance for other educationalists.

Given the background of the author as a teacher (further explained in section 1.4) and the research aims, elements of action research (AR) methodology were also utilised. Action research “combines diagnosis, action and reflection...focusing on practical issues that have been identified by participants and which are somehow both problematic yet capable of being changed” (Cohen et al., 2011, p. 344-345). AR is extensive in scope, but includes the following elements: it starts small and grows to include more people; it develops through a self-reflective spiral; and it is political because it’s about identifying issues and making

Figure 1.2: Stages of Action Research (McNiff, 2002)



changes (Kemmis & McTaggart, 1992). The researcher also iterated through the steps of McNiff's (2002) Action Research Stages (see Figure 1.2).

1.2.2 Research Design

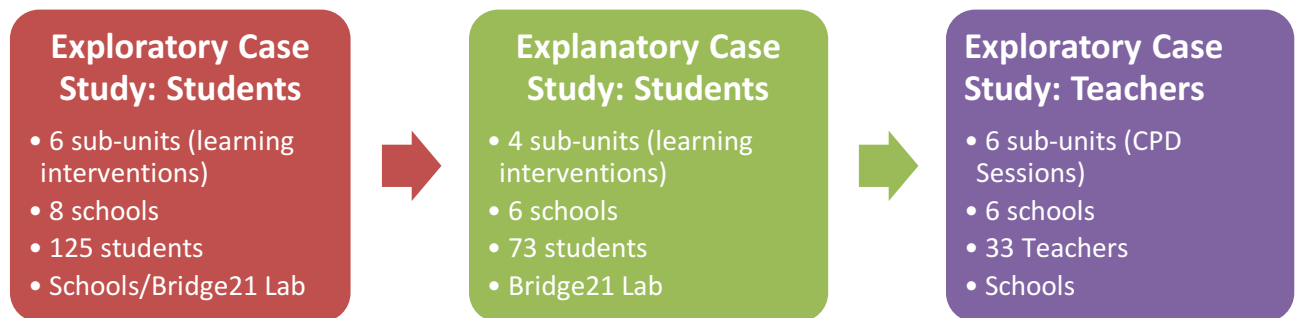
The research was designed to take place over the course of three phases, involving three different case studies, each with multiple embedded sub-units. The first phase involved an exploratory case study with students, which was used to refine hypotheses and research questions. Because this research involved a relatively new area of investigation, with a lack of detailed preliminary data, this is a typical initial step of an overall research design (Mills, Durepos & Wiebe, 2009). The "Exploratory Case Study: Students" consisted of the design and delivery of six pilot learning interventions with different students, or sub-units (Yin, 2009), and was utilised to refine the design of the learning activities and data collection instruments. Analysis from the results of this phase of the research provided important insights regarding activity design, data collection tools, and the research questions.

These findings were then integrated into the design of the learning interventions and research methods to be used in an explanatory case study with students. Explanatory case studies are typically used to describe phenomena, explain cause and effect, and/or advance theory (Mills et al., 2009), and they aim to examine and explain how and why conditions are achieved (Yin, 2014). The "Explanatory Case Study: Students" also involved sub-units: four identically-designed learning interventions conducted with four different groups of students. With the aid of a refined learning intervention, data collection materials and data analysis procedures, the explanatory case study was used to examine closely the impact of the Bridge21 model on individual students and groups of students' attitudes in English.

After using phases one and two of the research to develop, evaluate and refine the adapted Bridge21 approach, the researcher shared the approach and resources created with currently practising English teachers who intended to use them in their teaching – thus continuing in the action research cycle through changing the practices/attitudes of other teachers (Cohen et al., 2011). The third phase of the research study involved an additional exploratory case study of six embedded units (continuous professional development (CPD) sessions). The "Exploratory Case Study: Teachers" aimed to preliminarily investigate these

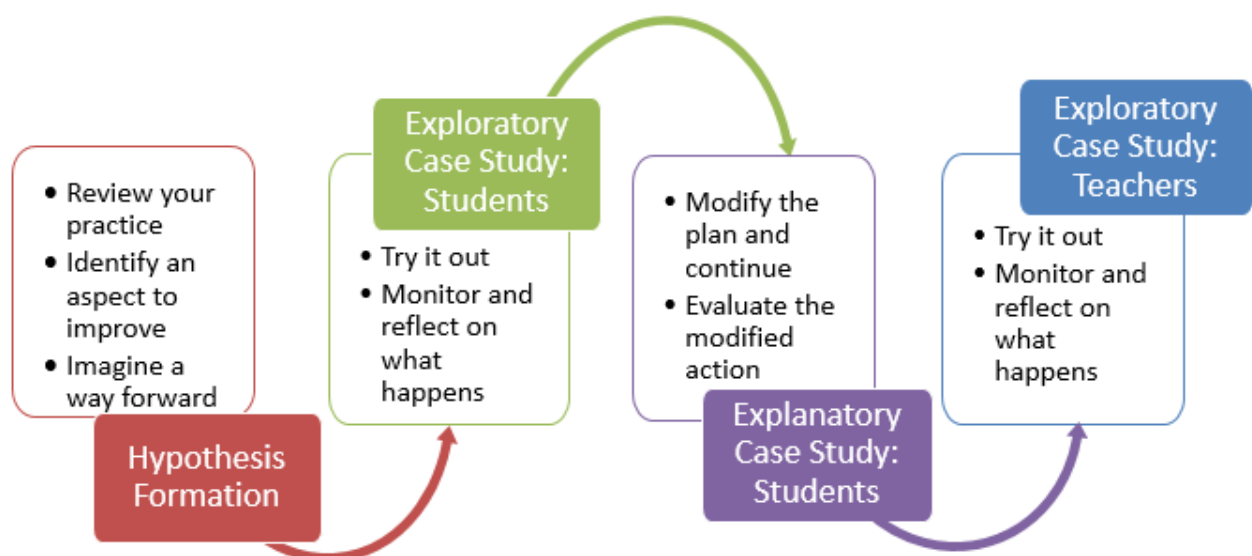
teachers' experiences using the Bridge21 approach and resources provided for teaching new literacies their own English classes and their attitudes toward the pedagogical approach.

Figure 1.3: Research Design



Thus, the three phases of the research design, each containing an overarching case study with multiple embedded sub-units (Yin, 2009), were utilised to help answer the research questions. They also helped establish clear and valuable endpoints (Cohen et al., 2011) to the action research cycle (McNiff, 2002). Through the use of contained case studies, the author could analyse the results of the interventions, make changes, and then evaluate the results of the modified approach. Figure 1.3 depicts the author's use of a combination of case studies and elements of action research.

Figure 1.4: Author's depiction of the combination of case studies and an AR Cycle (McNiff, 2002), utilised in this research



1.2.3 Research Methods: Data Collection Tools & Analysis

To investigate the impact of the Bridge21 model on student engagement and confidence in English and attitudes toward learning English with technology, various approaches were considered (section 4.4), and using a mix of both qualitative and quantitative research methods was determined to be the most suitable. This approach is consistent with case study methodology, in which researchers accept that there are many variables at play in any case and usually require multiple tools and sources for data collection (Cohen et al., 2011). Moreover, having multiple sources of data that converge in a triangulating fashion helps maintain the rigor of a case study (Yin, 2013).

Quantitative data was collected through The English and Technology Attitudes Scale (ETAS) (Appendix A), an instrument which was systematically developed, piloted and validated, over the course of the exploratory case study and in collaboration with others (Kearney, Gallagher & Tangney, 2018), and is therefore also a contribution of this research. The ETAS is an adaptation of the *Mathematics and Technology Attitudes Scale* (Pierce, Stacey, and Barkatas, 2007); it contains 19 items, and uses Likert scales to measure five aspects of students' attitudes: emotional engagement in English, behavioural engagement in English, confidence in English, confidence in technology, and attitude toward learning English with technology.

Along with the ETAS scale, open-ended questions related to the same concepts were included on the same questionnaire, with the purpose of collecting qualitative feedback in order to triangulate the data. Essentially, the quantitative portion of the ETAS provided a numerically quantifiable picture of students' changes in confidence and engagement, while the qualitative tools helped elucidate the reasons behind those changes reported. The ETAS Questionnaire was completed by participants at the start and finish of the learning intervention.

To investigate how English teachers adapt or struggle to adapt the Bridge21 approach to their teaching and their beliefs about using the approach, qualitative data was primarily

collected through a questionnaire, based on other similar studies, that was developed for this case study.

To analyse the quantitative data, parametric and non-parametric statistical tests were performed to assess the significance level and effect sizes of the changes reported. To analyse the qualitative data, content analysis, which also allowed for emergent themes, was performed. Content analysis “defines a strict and systematic set of procedures for the rigorous analysis, examination and verification of the contents of written data,” and it is a process for making replicable and valid inferences from the text (Cohen et al., 2011, p. 563). Cohen et al. (2011) explain it involves coding, categorizing the units of analysis, comparing, and drawing theoretical conclusions. Ezzy (2002) outlines a systematic process for performing content analysis, which was followed in this study (section 4.4).

1.3 Contributions

This thesis makes intellectual and practical contributions to the areas of English education, new literacy studies, and 21C teaching and learning. This section states the contributions and aligns them with the problem statements (PS1 or PS2), as well as the Research Aims (RA1-RA4), which they helped address.

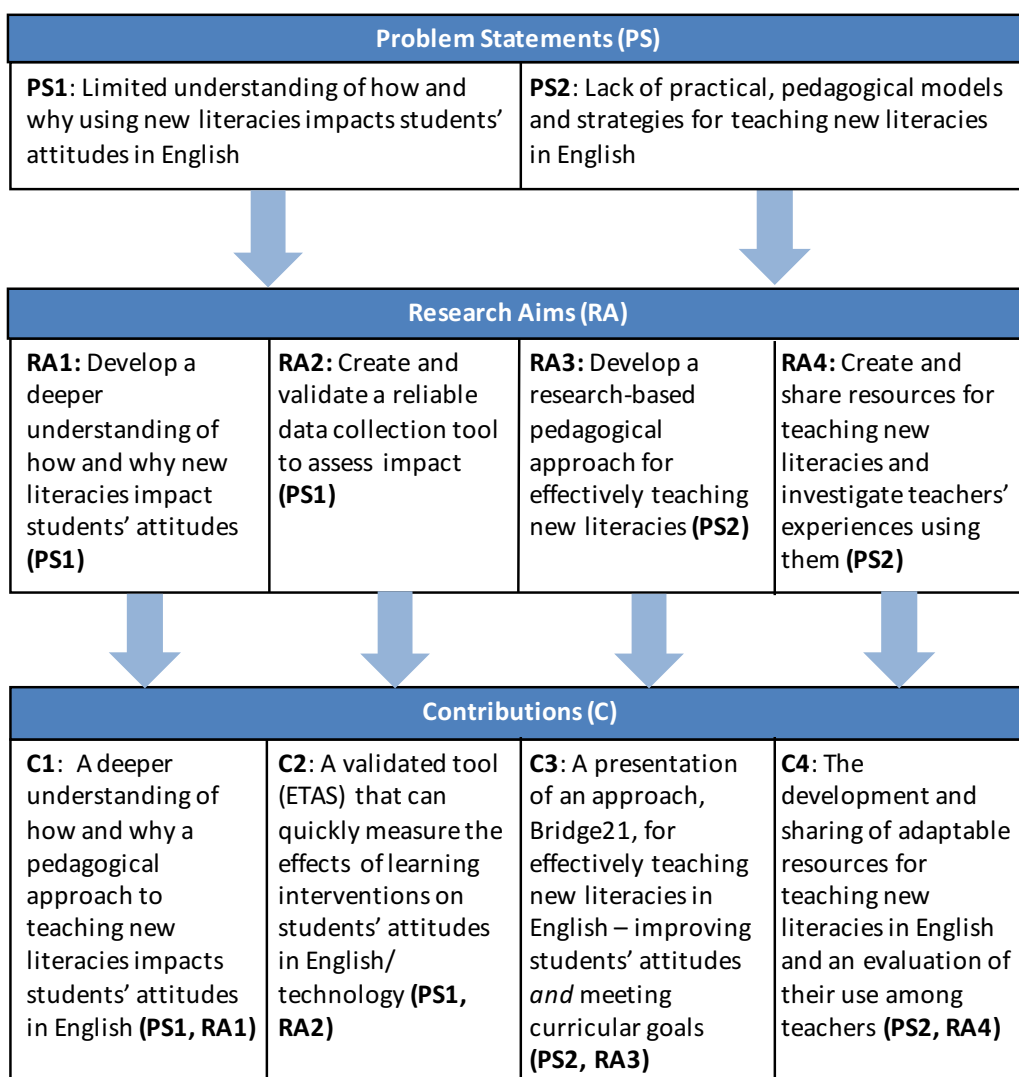
1.3.1 The impact of a new literacies pedagogy on students’ attitudes (C1)

This research contributes to the field by providing a nuanced understanding of how and why a particular strategy, the researcher’s adaptation of the Bridge21 pedagogy, to teach new literacies impacted students’ attitudes in English (PS1; RA1). The results demonstrated that the adapted approach had a positive impact on students’ attitudes: statistical tests revealed significant increases in all five subscales of the ETAS (emotional engagement in English, behavioural engagement in English, confidence in English, confidence in technology, and attitude toward learning English with technology), with a small-medium effect size in most subscales. The qualitative data supported and illuminated the reasons for these changes. Students had overwhelmingly positive attitudes following the learning interventions because they believed they learned English subject content, skills (e.g. new and

conventional literacies; how to work in teams), and about how to learn itself. Additionally, participants reported feeling more confident in the areas of interpreting challenging texts, using technology, working collaboratively, researching, and public speaking.

The data was further analysed to reveal how using this approach impacted students based on their pre-existing, initial attitudes toward English. The model had the most positive impact on those students with poor to moderate initial attitudes, yet it did not adversely impact those with pre-existing positive attitudes in English. Furthermore, the largest and most significant changes were in attitudes toward learning English with Technology. Almost every student had positive feedback, explaining that ICT made learning easier and more enjoyable, or that they felt more confident in English when using technology.

Figure 1.5: Alignment of Problem Statements (PS), Research Aims (RA) & Contributions (C)



1.3.2 A reliable, validated data collection tool (C2)

The ETAS (English and Technology Attitudes Scale) was developed and systematically validated for this research (PS1; RA2) (Kearney et al., 2018). This is a quick-to-administer, valid quantitative tool that measures the impact of learning interventions on students' attitudes in English/learning English with ICT, and it can be valuable to other researchers and educators (section 4.5.2). While some quantitative tools in the field of second-level English educational research do exist (e.g. Bottomley, 1998; Henk & Melnick, 1995; McKenna et al., 2012), there is a lack of quantitative questionnaires related to use of technology in general English education.

The ETAS could be used as either a single test (to gauge students' engagement and confidence in English and technology), or as a pre- and post- test to measure the impact of a particular learning intervention employed. Potentially, researchers in other subject-areas could also modify the tool for their purposes.

1.3.3 A pedagogy for effectively teaching new literacies in English (C3)

Given the positive results, as demonstrated through the analysis of the quantitative and qualitative data, this thesis presents a research-based pedagogical approach, an adaptation of the Bridge21 model, for effectively teaching new literacies in English – in a way that can improve students' attitudes *and* help meet curricular goals (PS2; RA3). This thesis provides empirical data that the Bridge21 model can be utilised and adapted as a framework for facilitating the teaching of new literacies in the English education context.

Given that teachers report needing more professional development and guidance in how to teach new literacies effectively, as well as report desiring further understanding and evidence of how and why the integration of new literacies can impact students (section 2.7), this Ph.D. research contributes to those needs. This thesis presents a *practical* approach for teaching new literacies, grounded in empirical data to support its use, which could be modified and extended by other educators.

1.3.4 Sharing the approach/resources and evaluating their use among teachers (C4)

In addition to the practical approach outlined in this thesis, the research also included the development of various, easily-adaptable resources – activities, projects, lesson plans – for teaching new literacies in English, which correspond with the Bridge21 approach (PS2; RA4). These activities/projects utilise common curriculum content and can easily be modified for other literary content and/or to meet the learning objectives of different age groups, classes or schools. These resources have been made freely available on various public websites and have already been shared with 33 English teachers in workshop settings (see Appendices E and K for sample lesson plans and supplemental materials).

To preliminarily investigate the experiences of these teachers in their efforts to use the Bridge21 approach and resources provided in their own English classes the Exploratory Case Study: Teachers was conducted (the third phase of the research study). This case study aimed to examine how teachers adapted or struggled to adapt the approach/resources in their teaching, as well as their beliefs about the pedagogical approach itself. Teacher participants generally were positive, believing the approach to be effective because their students were more engaged in the learning process. However, they also expressed some barriers, related to common school logistics such as timetabling and access to technology, to using it. Thus, this Ph.D. research contributed to the field of English education by providing professional development for practicing teachers, but also by identifying some successes and challenges related to using a pedagogical approach to teaching new literacies of current English teachers in Ireland.

1.4 Positionality and Reflexivity

As Berger (2015) argues, it is critical that throughout the research process, a researcher needs to “understand the role of the self in the creation of knowledge; carefully self monitor the impact of their biases, beliefs, and personal experiences on their research; and maintain the balance between the personal and the universal” (p. 220). A researcher’s personal characteristics, such as gender, age, race, or ethnicity, as well as personal experiences, beliefs, and political/religious ideologies can impact upon all stages of the research, from formulating research questions to selecting participants to analysing and presenting data

(Berger, 2015). Accordingly, a practice of *reflexivity* and various strategies can be utilised to help bring trustworthiness to a study; reflexivity is a “process of a continual internal dialogue and critical self-evaluation of researcher’s positionality as well as active acknowledgement and explicit recognition that this position may affect the research process and outcome” (Berger, 2015, p. 220). A practice of reflexivity, especially in qualitative research, can help increase the rigour and trustworthiness of a study by allowing researchers to consider how they help or hinder the construction of knowledge (Berger, 2014); this concept is elaborated upon in the methodology chapter (4).

This section begins the practice of reflexivity by describing the positionality of the author — her relevant experience that lead to the research undertaken; her beliefs about knowledge and research; and her role within the research — and it offers theoretical frameworks that underpin her positions. She aims to clarify the inspiration for the research and to expose any pre-existing biases and beliefs that may have both consciously and unknowingly influenced the research. [Of note, while the majority of the thesis uses third person pronouns (she, her), this section (1.4.1-1.4.3) utilises first person pronouns (I, my), as it is essentially a personal reflection; accordingly, the use of “I” seems more appropriate (Berger, 2015).]

1.4.1 Researcher’s Background

My interest in the topic of this Ph.D. research first arose from five years of teaching second-level English language arts in the United States. I taught in co-educational suburban Massachusetts schools with students mostly of middle class families. Students were of mixed races and various religious and ethnic backgrounds, yet most spoke English as a first language, with some speaking additional languages at home. In my role as an English educator, I was exposed to academic literature, research and popular media reports that were touting the virtue of technology, claiming that integrating technology (or new literacies, in the English context) into my teaching would engage students in the learning process. Moreover, there was increasing pressure from school administrators — a trickle-down effect from continuing changes at the state and national level to curriculum frameworks — to incorporate more technology into our teaching. There was, however, little practical guidance on how to do this.

In initiating the research process, I came into contact with members of Trinity College Dublin's Centre for Research in IT in Education (CRITE), a research group at the forefront of the areas of education and technology. In CRITE, researchers had been using the Bridge21 approach, which blends together theory and research-based practices into a technology-mediated, project and team-based model for 21C teaching and learning. They had been utilising the model to teach adolescents important 21C skills such as communication, collaboration and technology fluency for seven years; and research demonstrated its positive impact on student motivation and confidence (Lawlor et al., 2018).

Therefore, when joining CRITE, I believed that the work and research underway was already, and could continue, to positively impact the educational systems in both Ireland and abroad. This Ph.D. research, which aimed to adapt the Bridge21 model for teaching new literacies in the English education context and evaluate its impact on students' attitudes, was rooted in a hopeful, positive perspective: I hypothesised that this model could be effective in engaging students in English and helping them develop new literacy skills. While I aimed to be objective throughout the research process, my personal, hopeful bias may have affected my approach and/or interpretations.

1.4.2 Researcher's beliefs about knowledge and research

I draw upon Burrell and Morgan (1979), as they are referenced in (Cohen et al., 2011, p. 5) to articulate my assumptions regarding the nature of humans/reality/things and the methods of enquiry. To start, I see humans as initiators of their own actions and creators of reality, having free will and creativity; thus, I favour a voluntarism perspective, and I disfavour a determinism viewpoint, one which interprets humans as products of their environment, responding deterministically to their surroundings (Cohen et al., 2011, p. 6). While humans certainly are influenced by their society and make decisions based on the expectations or limitations of their communities, they ultimately make and interpret their own realities.

In terms of my ontological assumptions — my perspectives on the nature of reality/things — I have a nominalist view, holding that “objects of thought are merely words and that there is no independently accessible thing constituting the meaning of a word” (Cohen et al., 2011,

p. 5). This view contrasts to a realist perspective, which “contends that objects have an independent existence and are not dependent for it on the knower” (Cohen et al., 2011, p. 5-6). Therefore, I favour a subjectivist (or anti-positivist) view, seeing the social world as “personal and humanly created” and thereby distinct different from the natural world; it emphasises the “role of individuals in the creation of the social world” (Cohen et al, 2011, p. 6). Within this view, the unique and individual, rather than the general and universal, is prioritised; truth resides in the subjectivity rather than the objectivity of the social world.

My epistemological assumptions — my perspectives on the ways of researching/enquiring into the nature of reality/things — also align more with an anti-positivist viewpoint, interpreting knowledge as “personal, subjective, and unique” rather than “hard, objective, and tangible” (Cohen et al., 2011, p. 6). Despite my disposition toward subjectivism, I value a mixed methods approach to enquiry. Consequently, I align myself within a “pragmatist paradigm” recognising that the “world is not exclusively quantitative or qualitative...[and that] a single approach on its own will only yield partial understanding of the phenomenon being investigated” (Cohen et al., 2011, p. 22). This pragmatist paradigm is practical and supports collecting and analysing data in combinations that are most effective and efficient in answering the research questions (Cohen et al., 2011, p. 23).

As expected, these assumptions affected most stages of this study’s research process – from interpreting the literature and developing research questions, to choosing the research methods and drawing conclusions – as will become evident in the following chapters.

1.4.3 Role in the Research

As the following sections detail, the case studies involved designing and conducting several learning experiences (interventions) for secondary school students and for teachers; I had roles as the facilitator and the researcher in these interventions. During the learning experiences, I acted as the facilitator – the “teacher.” Because the nature of the study involved adapting, and subsequently implementing and evaluating, the Bridge21 model for teaching new literacies in English, I piloted these activities before advising other teachers. As a facilitator, I desired participants to have a positive experience; as such, the thought, planning, organising and delivery of the learning experiences were carried out with a

positive attitude. I was in a unique position of being both an “insider” and an “outsider” in the learning interventions and in this research process, as I have direct experience with the nature of the research, yet I was not a fellow classmate nor the student-participants’ classroom teacher. Similarly, in terms of the case study with teachers, I am a fellow English teacher; however, I am not currently teaching in their school nor have I taught English in an Irish school. These positions, and the benefits/drawbacks to them, are elaborated upon the methodology chapter and the chapters pertaining to each case study.

While I was an enthusiastic teacher, I aimed to be a neutral researcher throughout the study. Importantly, when I was actively facilitating, I was not simultaneously collecting data; I did not believe I could adequately scientifically observe the learning experience while teaching. Therefore, I collected my data at the start and finish of each learning experience. While collecting and analysing data, I aimed to remain as neutral as possible, putting in measures to ensure “objective” interpretation (see section 4.4); I also engaged in a practice of reflexivity to help ensure trustworthiness in the study (Berger, 2015). The limitations of this position will be further discussed in chapter 4.

1.5 Structure of Thesis

Following this introduction, the thesis is organised into seven chapters: (2) Literature Review, (3) Research Study Context, (4) Methodology, (5) Exploratory Case Study: Students, (6) Explanatory Case Study: Students, (7) Exploratory Case Study: Teachers, and (8) Discussion and Conclusions.

Chapter 2, Literature Review, gives a broad overview of English education at the international level. It first describes the review process, establishing the inclusion and exclusion criteria for the literature discussed in this thesis. The chapter conceptualises the subject of English, also reviewing significant literacy theories and their influence on English education. It describes how key concepts (e.g. literacy, new literacies, ICT) are understood and defined in this thesis. It explains that in the field of English education, ICT has changed conceptions of literacy, and that English education is in the process of adjusting. It reviews

relevant studies, aiming to integrate new literacies in English, and it identifies key areas that need further research and understanding (i.e. the problem statements).

Chapter 3, Research Context, describes the local, cultural context (Ireland) in which the research was undertaken. The Irish education system is currently undergoing reforms to the structure of the second-level curriculum and to English education specifically. It explains and situates concepts, such as 21C teaching and learning, 21C skills, and new literacies, in the Irish education sphere. The chapter describes a research programme, Bridge21, working to transform Irish education and to address the challenges related to these reforms. Finally, the chapter provides a rationale for an investigation into adapting the Bridge21 model for teaching new literacies in second-level English and its impact on students' attitudes.

Chapter 4, Research Methodology, clarifies the theoretical understandings of the key phenomena that were under investigation and measured (students' attitudes, i.e. confidence and engagement). It further describes why case study, along with elements of action research, was chosen as the research approach, and it gives an explanation of the research design. This chapter provides a rationale for the mixed methods approach. It explains the development and validation process of the quantitative data collection tool, the (ETAS). Finally, ethical considerations and methodological limitations are addressed.

Chapter 5, Exploratory Case Study: Students, discusses the first phase of the study, which aimed to (1) refine the learning activities and projects (2) develop and refine the data collection materials and analysis procedures, and (3) preliminarily examine how the author's adaptation of the Bridge21 model was impacting students' attitudes toward English. It explains the context of the individual learning interventions; the design of the various learning activities and projects in which students engaged; the data collection, analysis and results; and the conclusions made, which informed the design of the explanatory case study.

Chapter 6, Explanatory Case Study: Students, explains how this case study was designed, aiming to answer the main research questions and evaluate the effectiveness of the Bridge21 model for teaching new literacies. This chapter describes the context of the learning interventions; the design of the various learning activities and projects in which

students engaged; and the data collection, analysis and results. Results are presented and discussed in light of the literature. Conclusions are drawn to help answer the research questions and contextualise the contributions of this study. The limitations are discussed, and future research is suggested.

Chapter 7, Exploratory Case Study: Teachers, explains an additional, exploratory case study, which involved investigating: (1) how teachers adapt, or struggle to adapt, the Bridge21 approach to teaching new literacies in their English teaching in schools; and (2) their beliefs about using the approach in school. The context, participants, data collection and analysis and results are reported. The chapter summarises the themes emerging from the data, discussing how it can inform future research and professional development.

Chapter 8, Discussion and Conclusions, synthesises the findings from the three phases of the research study and contextualises them in light of the literature. It reiterates the limitations of this study and discusses areas where future research is needed. The chapter discusses to what extent the research aims were achieved, and it articulates key contributions. It offers a personal reflection, in which the author describes the impact of the research on her professional practice. Finally, it concludes with a summary the main ideas and findings from the research.

Chapter 2: Literature Review

2.1 Chapter Overview

This chapter provides a broad view of the field of English education, at the international level. It demarcates and justifies what is within and outside the bounds of the investigation; situates the literature in the broader historical and scholarly context; and reports and critically examines the methods and results of relevant studies (Boote, 2005, p. 4). Through this examination, this review demonstrates the current understanding of the phenomena of interest in this study and articulates “what still needs to be learned and accomplished” (Boote, 2005, p. 4).

After first describing the literature review process, the following sections review significant literacy theories and their influence on English education – research, educators, policy and curricula. The chapter conceptualises the subject of English and its continually evolving aims – for one cannot argue that ICT is changing it or that new literacies must be integrated into English without first articulating the subject’s purpose. The review also elucidates the conceptual understandings of key terms (e.g. literacy, new literacies, English, and ICT) and how they are understood in the context of this thesis. This process is essential, as these terms are not “neutral” — their meaning varies depending on the political, cultural and situational context in which they are used (Knobluach, 1990). This chapter demonstrates that, within the field of English education, it is generally accepted that the ways people use ICT have changed the “processes, products, and contexts” of literacy (Grabill & Hicks, 2005, p. 303). Accordingly, English education, internationally, is adjusting for two interwoven reasons: (1) the potential to use new literacies to engage students in the learning process, and (2) the need to teach students *new* literacy skills.

Finally, after reviewing relevant studies conducted with both teachers and students, this literature review ultimately argues that deeper understanding of the impact of using new literacies in the English education context is needed; that an investigation into a practical pedagogical model for teaching new literacies in English would be a useful contribution to the field; and an instrument for measuring the impact of such a pedagogical model on

students' engagement and confidence would also be valuable to researchers and practitioners.

2.2 Literature Review Process

2.2.1 The Literature Search

Gash (as cited in Ridley, 2012) defines a literature search as “a systematic and thorough search of all types of published literature to identify as many items as possible that are relevant to a particular topic” (p. 41). A thorough literature search involves consulting relevant books, journals (print and digital), online databases, field experts, librarians, and the “grey literature” (e.g. conference proceedings, on-going research, professional association websites/documents, and theses) (Ridley, 2012; Petticrew & Roberts, 2008). The literature search began with general guiding questions arising from the researcher's experience, but was ultimately an iterative process – as reading was completed, search terms were modified, and inclusion/exclusion criteria were determined.

To provide a comprehensive review and to reduce potential reviewer bias, elements of a “systemic review” process – a common approach in the field of social sciences – were utilised (Petticrew & Roberts, 2008). The overarching guiding questions were: “In what ways is technology being used in second-level English education and how does it impact students' attitudes in English?” To address these questions, the researcher first identified electronic search engines (e.g. Google Scholar) and databases particularly relevant to the fields of education and English (e.g. ERIC, JSTOR). Per Petticrew and Roberts' (2008) recommendation, a minimum of two databases were searched (p. 102). When performing a database search, it is recommended to develop a synonym list for the key search words, which other authors may have used in naming or tagging their research (Ridley, 2012; Petticrew & Roberts, 2008). It is also recommended to use Boolean logic to narrow the search, employing search operators such as AND, OR, or * (an asterisk replaces characters in a word and yields variations of the search word (e.g. adolescen* would yield adolescent or adolescence) (Ridley, 2012, p. 57). Table 2.1 represents the key search terms utilised, and the synonyms for those terms, as well as the search operators employed.

Table 2.1: Search Terms and Synonyms

Key Word	Synonyms for Searching
English	English Language Arts, ELA, English curricul*
Technology	Technolog*, ICT, ICTs
Secondary School	High school, Second-level, Post-primary
Student	Adolescen*, youth
Literacy	Literac*, 21C literacies, multiliteracies, digital literacy, multimodal
Attitude	Engage*, Motivat*
Confidence	Confiden*, Self-concept, self-efficacy
Affect	Impact, influence, effect*

After using electronic databases to cull articles, books and theses, the common technique, of “snowballing,” whereby one uses the bibliographies of the sources to find other related references, was employed (Ridley, 2012; Petticrew & Roberts, 2008). Likewise, “pearl growing” – searching for sources which cite key studies, editorials or theoretical pieces – was also applied (Petticrew, 2006, p. 98). Additionally, hand-searching techniques were implemented (Petticrew and Roberts, 2008): key journals in the fields of English and literacy education (those publications commonly read by practitioners and consulted/cited by other researchers) were consulted to ensure that the searches in the electronic databases were not missing relevant literature. These publications included: *Journal of Adolescent & Adult Literacy*, *The English Journal*, *English Education*, *Reading Research Quarterly*, and *The Reading Teacher*. Hand searching of the “grey literature” – e.g. the websites of relevant professional associations related to the fields of English/literacy education – was conducted. These associations include the Irish National Organisation for Teachers of English (INOTE); United Kingdom Literacy Association (UKLA); the U.S.A. National Council for Teachers of English (NCTE); and the International Reading Association (IRA). Searching these websites usually led back to previously searched journals, as several of those journals are published by these associations of English teaching professionals. Or, these searches directed the researcher to other relevant documents, such as English policy statements and curricula, which often also led back to the studies published in journals.

2.2.2 Inclusion and Exclusion Criteria

As expected, the search terms (e.g. English, education, literacy and technology) yielded millions of hits, most of which were related to areas outside of the scope of this research,

such as English as a second/additional language, literacy across the curriculum, or primary school education. Thus, as the search continued, more specific key words and search strings were developed, and hand searching was performed. It also became necessary to determine parameters, developing a set of inclusion and exclusion criteria, for both the theoretical literature and the empirical studies to be included in the review.

The theories on topics related to this study (e.g. literacy, engagement) are vast and extend across multiple disciplines within and outside of education. The theories discussed, critiqued and underpinning this research are those most relevant to second-level English educational research and curricula. It was through the iterative literature search process described heretofore (2.2.1) – reviewing policy documents, editorials in influential journals, and empirical studies conducted in English education and their theoretical frameworks –that it became evident which literacy theories are pervasive. This review does not include literacy theories which are more relevant to other fields (e.g. media literacy).

In terms of empirical studies to include, the researcher was interested in the use of new literacies/technology in second-level English education and the impact on students. Therefore, any studies related to the use of ICT in second-level English education (described in section 2.3) and conducted in a space such as a classroom/educational environment, and investigating its impact on students' attitudes, motivation, engagement, confidence, achievements, or any other related areas, were included. However, relatively few empirical research studies (less than 20) meeting those criteria exist. In the search process, the researcher found several studies related to pre-service and in-service second-level English educators and technology, which are also included in this review as they provide a more robust picture of research and contemporary issues in the field. This review does not include, for example, studies related to teaching English as an additional language or primary/tertiary level English education.

To determine the dates for inclusion, a distinction was made between the theoretical literature and the empirical studies, as education today and theories underpinning this research continue to be influenced by the theories purported at the turn of the 20th century (e.g. Dewey, 1902). For empirical studies, Petticrew and Roberts (2008) suggest that

inclusion dates can be determined both logically and/or by the date of the publication of a seminal study or theory (p. 102). Accordingly, studies between 1996-present are included, with the rationale that first, this investigation is interested in the use of technologies that came into widespread use in the late 20th and early 21st centuries. Second, 1996 is the publication date of the “New London Group” of scholars’ highly influential theoretical article, *A Pedagogy of Multiliteracies: Designing Social Future*, which continues to underpin much of the empirical research in this area.

To help clarify the inclusion and exclusion criteria, a modification of the PICOC (Population; Intervention; Comparison; Outcomes; Context) model commonly used in systematic reviews, was utilised (Petticrew and Roberts, 2008, p. 39). Table 2.2 displays the criteria.

Table 2.2: Literature Review Inclusion and Exclusion Criteria

	Included	Excluded
Population	<ul style="list-style-type: none"> • Adolescents, aged 12-18 • Teachers of adolescents, 12-18 (pre-service and in-service) • Males and Females • English speaking 	<ul style="list-style-type: none"> • Students aged younger than 12 and older than 18 • Non-English speaking
Context	<ul style="list-style-type: none"> • Second-level English Education, school/classroom setting • Countries in which English is a dominant language (Ireland, The United Kingdom, United States, South Africa, Australia, New Zealand, Canada) 	<ul style="list-style-type: none"> • English as an additional language • Online Learning • Out-of-school literacy development • Primary and Tertiary education • Countries in which English is not a primary language
Dates	<ul style="list-style-type: none"> • 1996-present (for empirical studies) • 1900-present (for theoretical literature) 	<ul style="list-style-type: none"> • Empirical studies completed prior to 1996
Intervention and Outcomes	<ul style="list-style-type: none"> • Related to technology use in English education • Impact on student attitude, engagement, confidence, or motivation • Impact on student achievement • Teacher or student level 	<ul style="list-style-type: none"> • English as a second/foreign/additional language • Interventions in the primary/third level sectors

Because there are “no hard and fast ‘stopping rules’” to a literature review, the concept of “theoretical saturation” – often utilised in the analysis of qualitative data – was relied upon (Petticrew & Roberts, 2008, p. 100-101). In practice, this means that a search has reached a point of “data saturation, where no further perspective or schools of thought are added by further acquisition of articles” (Petticrew & Roberts, 2008, p. 101). Although this literature review may not cover every possible empirical study or relevant policy document and position paper, the researcher contends that it would a) be impossible to exhaustively cover every possible related piece of literature in the space provided, and b) that the inclusion of such items would not provide any further insight into the state of the field, the types of research studies currently be conducted, or the gaps in the research.

2.3 Second-Level English Education

Defining the second-level school subject of English can be challenging, as the field “resists limitations”: it has “fuzzy boundaries” that make the “curriculum hard to pin down” (Sheridan, 2009, p. 2-3). For clarification within this thesis, English refers to the subject taught within secondary schools in English-speaking countries: it encompasses reading and analysing literature; writing essays, fiction, poetry, etc.; studying grammar and other literacy skills; and developing oral language skills such as debating and delivering speeches, among other things typically taught in an English class. Sheridan (2009) describes the subject: “English is the study of language in action, chiefly in reading and writing, but also in speaking and listening — that is, in the various ways in which we use language to negotiate the problems of life...[it’s] a way of exploring life itself” (p. 2).

In this thesis, *English* does not include learning English as an additional/second/foreign language (ESL). In some countries, such as the United States, the subject is referred to as English language arts (ELA) to distinguish it from ESL; yet this research was conducted in Ireland, and the term English is more utilised and familiar here, so English or English education are used throughout the thesis.

In attempting to define the subject, it is useful to articulate potential viewpoints of the purpose of English education, which are both myriad and debatable. Cox (1991) summarised these into five categories, which have come to be known as the Cox Models for English:

1. A *personal growth* view focuses on the role of English in developing children's imaginative and aesthetic lives.
2. A *cross-curricular* view focuses on English teachers' responsibility to help children with the language demands of different subjects in the school curriculum.
3. An *adult needs* view emphasises preparing children for the language demands of adult life, including the workplace, in a fast-changing world.
4. A *cultural heritage* view emphasises fostering children's appreciation of works of literature that have been widely regarded as amongst the finest in the language.
5. A *cultural analysis* view focuses on helping children towards a critical understanding of the world and cultural environment in which they live.

The majority of English teachers, when asked which of the Cox models for English was of primary importance, replied that a personal growth model deserves the most emphasis (Pike, 2004), arguing this model most values students as individual learners and fosters their aesthetic development.

The researcher draws upon Cox's aims to articulate her beliefs, derived from personal experience, on the purpose of English education and the role of the English teacher. She believes that English education should help foster the growth of individual students by:

- (1) enriching their understanding of culturally significant literary texts; and
- (2) developing the literacy skills students need to participate fully in society.

She argues that these two overarching aims can and should simultaneously be met in English learning experiences. [Therefore, the learning interventions, as described in chapters 5 and 6, were designed with the aims of enriching students' understanding of literature and fostering their literacy skills.]

Of note, the phrase *culturally significant literary texts* is used to indicate those works of literature which have had a strong influence on the development of English language and/or English-speaking culture. They are those works which are often considered a part of the 'canon' – these works have 'stood the test of time.' One reason to teach them is simply that

everyone else has learned them in school; therefore, it can help one understand one's own cultural heritage and/or become a part of the culture.

These works may vary by country, state or city, as certain authors have had more impact in some countries than others, in terms of how many people have read their work or the political, social or media attention they have attracted. Moreover, as new books are continually being written and published, what is significant of course changes, making it challenging for the author to identify the texts that should be included in English curricula. This issue echoes Sheridan's (2009) assertion that English is a "fuzzy" subject (p. 2). Yet, to make this concept more tangible, the author argues significant texts include works and writers as old as *Beowulf*, *The Canterbury Tales*, and Shakespeare, as well as more contemporary writers like W.B. Yeats, Harper Lee, Arthur Miller, and George Orwell. Additionally important are texts which have been translated into English, such as the work of Russian writers Fyodor Dostoyevsky and Leo Tolstoy, whose works have had significant inclusion in English curricula and impact on people of English-speaking cultures.

The researcher purports that it is important for all students to be introduced and to critically examine these canonical works because it helps meet the other aim of English – to develop the literacy skills students need to participate fully in society. As one teacher, in an editorial (also read by the students in the explanatory case study) entitled "Why it's ridiculous not to teach Shakespeare in school" argues: "I often tell my students that one of the main reasons to read a Shakespeare play is simply for the privilege of telling others you've read a Shakespeare play. In certain arenas, being able to carry on even a brief conversation about a plot point from *King Lear* is important and can give one credibility" (Strauss, 2015b). It is important to understand how and why certain literature has impacted one's culture, but also to develop the literacy skills of critically examining why that literature has dominated/comprised the canon. [Students in this study also read an opposing editorial by a teacher entitled: "Teacher: Why I don't want to assign Shakespeare anymore (even though he's in the Common Core)" (Strauss, 2015a).]

Thus, while English is about significant texts, the researcher admittedly cannot fully identify those texts because they change and periodically need to be critically re-assessed and re-

examined. However, she argues that today, those authors and works previously mentioned are *still* significant, and exposure to and critical questioning of these texts can help students develop the literacy skills they need to fully participate in society.

2.4 The Role of Literacy in English Education

In developing this understanding and outlining the purpose of English, it is suggested that the English classroom is a primary and expected location, as compared to other disciplines, for students to develop their literacy skills – and English teachers are held responsible for teaching the constantly evolving literacy skills their students need to prepare them for adulthood. However, like the term *English*, the word *literacy* needs clarification. Keefe and Copeland (2011) highlight that, “it is surprising how often the literature discusses research, conceptual frameworks, and approaches to teaching literacy (often characterized as reading and/or writing) without explicitly defining what is meant by these terms” (p. 92), yet “how literacy is defined affects the classroom instruction, community services, and the literacy opportunities offered to students” (p. 93). What it means to be literate is an ever-evolving concept and a highly debatable and contested topic within the field of English education – one cannot define English without defining literacy, even though this task is challenging and problematic. In conceptualising both English and literacy, curriculum writers, policy-makers, administrators, educators and/or classroom teachers are not only shaping curricula, but also creating or restricting opportunities for their students.

2.4.1 Perspectives of literacy

An influential leader in the field of literacy studies, Knoblauch (1990) says, “Literacy is one of those mischievous concepts, like virtuousness and craftsmanship, that appear to denote capacities but that actually convey value judgments” (p. 74): all definitions of literacy reflect personal and political agendas. Knoblauch (1990) categorises four types of perspectives into which most definitions of literacy fall and outlines underlying assumptions in each:

1. A *Functional* perspective emphasises basic skills, namely reading and writing for daily living and participation in society. The concern is the “efficient transmission of useful messages in a value-neutral medium” (p. 76). However, he argues this view

reinforces the status quo by only allowing “in” outsiders (usually, socio-economically disadvantaged, racial minorities, and/or disabled people), if they adhere to the dominant culture’s view of literacy.

2. A *Cultural Literacy* perspective stresses the importance of literacy for understanding and contextualising one’s heritage. It moves beyond the “technical proficiency” of the functional perspective and values developing “awareness of cultural heritage, a capacity for high-order thinking, [and] even some aesthetic discernment” (p. 77). The presumption, however, is the value of the canonical Western European literary tradition, marginalising those outside of this culture.
3. A *Personal Growth* perspective favours individual, personal development, assuming that “language expresses the power of the individual imagination” (p. 78). The personal growth agenda “speaks compassionately on behalf of the disadvantaged” (p. 79), advocating for the inclusion of texts from marginalised groups and reading materials that are appealing to the learners.

These three perspectives dominate — either singly or in some combination — the ways most educators approach literacy, at the classroom, institutional, and policy-making levels (Knoblauch, 1990). He identifies a fourth perspective, *Critical Literacy*; in this viewpoint, the purpose of literacy is to critically analyse the existing social conditions in which one exists and to recognise the ways reading, writing, and other language practices can objectify and rationalise the conditions which allow those with authority to continue to suppress the voices of those disempowered, thereby maintaining an unequal, oppressive social system (Knoblauch, 1990, p. 79). Because this more radical view of literacy could cause upheaval, it is rarely embraced as an understanding of literacy in school environments.

In English education, a functional view of literacy has historically dominated (Morell, 2008). Others have termed this an *autonomous* view (Street, 1984) — one which conceptualises literacy as exclusively including reading and writing an alpha-numeric text-based language, and as being a neutral, objective entity, capable of existing in and of itself (Morrell, 2008, p. 4; Street, 2003). Scholars such as Knoblauch (1990), Morrell (2008), and Street (2003) have argued that an autonomous view of literacy is insufficient: it excludes people in cultural communities where a text-based language is not dominant, people with extensive needs for

support, and/or members of communities who do not have access to this type of literacy. Moreover, it does not adequately prepare students with the skills they need and it reinforces existing inequities among students. Gee (2000) argues that teaching literacy as a “general and stand-alone thing” to poorer and minority children “is certainly one of the deepest sources of inequality in schools” as it perpetuates the existing inequalities of society by reinforcing a basic level of reading and writing among a traditionally lower-level educated population instead of giving them access to the more sophisticated, multiple literacies required for today’s economy (p. 413). He says these students actually “never learned to read in the sense of being able to actively recruit distinctive oral and written social languages for learning within socioculturally recognizable and meaningful academic Discourses” (Gee, 2000, p. 413). Street (2003) further argues that while those who purport an autonomous view of literacy may believe that teaching basic reading and writing skills to those who are disadvantaged will improve their lives, this approach does not account or allow for examining the very “social and economic conditions that accounted for their ‘illiteracy’ in the first place” (pg. 77).

2.4.2 Socio-cultural Literacy Theory in English Education

Though a functional/autonomous view of literacy has dominated in the classroom, theories which purport a socio-cultural perspective of literacy have been given more attention and are now underpinning much of the literacy research involving adolescents and informing English education (NCTE, 2013). While many theories related to literacy certainly exist, it is beyond the scope of this thesis to present and review all possible literacy theories; instead, the following discussion focuses on the prominent, influential theories in the field of contemporary English education and research, and accordingly, this Ph.D. research.

A sociocultural perspective of literacy recognises that reading and writing (or interpreting and creating) can only be understood in the cultural contexts of which they are a part. In other words, literacy is a socially situated practice: it makes humans part of a community, inviting in certain people and excluding others (Gee, 1996; Knobel & Lankshear, 2006; Street, 1984). A definition that “makes clear that literacy is situated in the context of the individual's own community” (Keefe and Copeland, 2011, p. 93) can be found at least as far back as the mid-20th century. In 1966, UNESCO defined a *functionally* literate person as one,

“who can engage in all those activities in which literacy is required for effective functioning of his (her) group and community and also for enabling him (her) to continue to use reading, writing and calculation for his (her) own and the community's development” (UNESCO, 2008, p. 17). More recently, Street (2003) proposed an “ideological” view of literacy:

Literacy is a social practice, not simply a technical and neutral skill; that it is always embedded in socially constructed epistemological principles. It is about knowledge: the ways in which people address reading and writing are themselves rooted in conceptions of knowledge, identity, and being. It is also always embedded in social practices, such as those of a particular job market or a particular educational context and the effects of learning that particular literacy will be dependent on those particular contexts. (p. 77-78)

This development of a theoretical perspective on the social nature of literacy by Street (1984) and others (e.g. Gee, 1996) has been termed New Literacy Studies (NLS). NLS focuses on literacy as a social practice rather than the acquisition of skills; this involves recognising multiple literacies and questioning dominant and marginalised literacies in terms of societal power relations (Street, 2003, p. 77). Gee (2000) elaborates that the NLS movement “denies that literacy is ever general or self-contained” but rather people utilise the conventions of textual languages — in combination with “other semiotic systems, other people, various objects, tools, settings, and technologies” to create “specific sublanguages” which he calls “social languages” (p. 412-413). Individuals can call upon various social languages “to enact, recognize, and negotiate different socially situated identities and to carry out different socially situated activities” (Gee, 2000, p. 413). Depending on their socioeconomic/ethnic/racial backgrounds, people are taught different social languages, which Gee (1996) calls *Discourses* – ways of using language and behaving that identify us as a part of a socially meaningful group. These Discourses, in turn, give individuals access to different opportunities for personal, economic, or power growth.

Other scholars, such as Barton and Hamilton (2000) who theorise literacy as a social practice have also been influential in the field. They use the term *literacy practices* to indicate the common cultural ways people utilise written language; they are “what people do with literacy...the social processes that connect people with one another, and they include shared cognitions represented in ideologies and social identities” (Barton & Hamilton, 2000,

p. 7). Social norms, they argue, control the circulation of texts and literacy practices, stipulating who produces and accesses them; accordingly, certain powerful communities' literacy practices are often more valued in formal education settings such as secondary schools (Barton & Hamilton, 2000).

2.4.3 ICT and the development of *New Literacies*

The New Literacy Studies' sociocultural perspective of literacy has evolved and broadened its scope since its original development, providing a framework for *new literacies* to be researched, analysed and theorised (Street, 2003). As Leu et al. (2004) argue, significant economic and social forces related to technology are causing changes to conceptions of literacy and literacy practices. These forces include: "economies based increasingly on the effective use of information and communication...the rapid emergence of the Internet as a powerful new technology for information and communication...[and government policy initiatives] to ensure higher levels of literacy achievement including the use of the Internet and other ICTs" (Leu et al., 2004, p. 1575).

To clarify, in this thesis, *technology* and *ICT* are used interchangeably and signify the definition purported by Isaacs (2011):

ICT cover a broad range of technologies. While commonly associated with computers, the term also includes other informational media, such as handheld devices, television, radio and even print. To these information technologies can be added communications technologies, such as telephones and networks. While this definition hardly leaves anything out, the power of the term comes from the convergence of the ever-increasing information processing capabilities of computers and the information exchange capabilities of networks. It is the combined processing and networking power of contemporary ICT that has launched a global socio-economic paradigm shift when other, earlier technologies like radio and television did not. (p. 5)

Today, it is generally accepted that ICT enabled people to communicate in new ways, and these new communication practices have led to *new literacies*. That phrase, however, needs some explanation, for it is also frequently used without clear articulation of the intended

definition. To complicate matters further, several variations of that phrase are often used, which have overlapping meanings, but each also having separate, inconsistent connotations.

The term *new literacies* was first seen in the work of Buckingham (1993); alongside new literacies, several other similar-sounding terms (e.g. new literacy practices, digital literacies, multimodal composition, etc.) have developed. These phrases typically describe the types of communication practices enabled by late 20th and early 21st centuries ICT, such as blogging, online interactive game-playing, video making, and digital remixing of cultural artefacts. These practices are often positioned in the literature as opposing “conventional” or “traditional” literacy — phrases usually intended to convey an autonomous conception of literacy (alpha-numeric text and print-based reading and writing) (Street, 1984).

Knobel and Lankshear (2014) offer an explanation of the difference between conventional and new literacies, as it’s often conceptualised in the literature:

As social practices mediated by digital technologies, new literacies differ fundamentally from conventional print literacies on the basis that their inscriptions are rendered in pixels on screens rather than by impressions on paper, by means of digital code rather than material analogue means (whether printed and illustrated/imaged/diagrammed by hand, typewriter, or press)...Consequently, “new” kinds of texts are seamlessly multimodal rather than involving distinct processes for different modes (text, image, sound). (p. 98)

Leu et al. (2004) distinguish new literacies from conventional literacies by the use of dynamic graphics and icons: as opposed to a printed book, digital texts and pictures can be linked and lead to more information and graphics (i.e. hypertext). They argue decoding the clues and colours of these hyperlinks, which leads to more information and images that needs to be comprehended, is fundamentally different to reading and writing on paper-based platforms. Furthermore, readers of digital texts have a variety of experiences, as they gather and comprehend different information because they choose to click on different links (Leu et al., 2003, p. 1586).

Alongside the New Literacy Studies (NLS) framework, the New London Group (NLG) (1996) theorised a *Multiliteracies* pedagogy for teaching in an era of new literacies, which has strongly influenced research, policy and teaching in the fields of English and literacy education since the late-1990s (e.g. Borsheim, Merritt & Reed, 2008; Chandler-Olcott & Mahar, 2003; Henderson, 2011; Morrell 2008). As Leu et al. (2004) summarise, “Instead of defining literacy as a unitary construct, [the NLG] recognizes the inherent diversity that constructs literacy in a world defined by new technologies of communication and new cultural and linguistic contexts that become more visible with globalization” (p. 1587).

The NLG (1996) argues that there is constant increase in the “multiplicity of communications channels and media” (p. 63) and because “technologies of meaning are changing so rapidly, there cannot be one set of standards or skills that constitute the ends of literacy learning, however taught” (p. 64). They also argue that there is increase in cultural and linguistic diversity in our local and global contexts and negotiating these differences has become a key skill in all areas of our lives. Their concept of *multiliteracies* recognises that “language and other modes of meaning are dynamic representational resources, constantly being remade by their users as they work to achieve their various cultural purposes” (p. 63-64).

The concept of “new” when theorising literacy has not, however, gone without criticism; for example, reading multiple modes, of course, predates the development of recent ICT (e.g. a textbook with graphs and charts would require readers to interpret and synthesise information coming from a variety of modes in addition to textual language). As Leu et al. (2004) argue: “Consider, for example, that ‘decoding’ in a print context involves decoding the alphabetic characters as well as any pictures, charts, maps, and graphs that are included on the page. In this sense, the decoding and interpretation of graphics and other forms of media as literacy practice is certainly not a new development” (p. 1585). Other scholars such as Moje (2009) have also suggested many new literacies simply take place on a different platform. She argues, “It may be the case that so-called old literacies are perfectly useful with new media. Conversely, new literacies may produce skills that support navigations of old media (i.e., print-on-paper media)” (p. 349). Moje (2009) says the terms technologies and literacies are often conflated “because it is often difficult to tell where the medium stops and the practice starts” (p. 349). She distinguishes the two by explaining:

literacies “make use of symbol systems,” while the technologies produce the symbols (Moje, 2009, p. 349). Furthermore, Moje (2009) argues that “new literacies” are only new insofar as scholars have turned their attention to them and/or have begun to consider them as literacy practices — for example, practices such as graffiti writing, tattooing, or spoken word poetry, are not enabled by technology and certainly not “new” (p. 352-353).

For Lankshear and Knobel (2006), however, there is a particular ethos of new literacies, which values the judgment and opinions from groups of people and respects a diversity of opinion — rather than a singular audience — when constructing meaning; this ethos of collaboration distinguishes new literacies from conventional literacy or simply new technologies (Knobel & Lankshear, 2014). New literacies are more participatory, dispersed, and collaborative in nature, as the burgeoning technology facilitates individuals in sharing intelligence and constructing meaning together (Lankshear & Knobel, 2007; Knobel & Lankshear, 2014). Lankshear and Knobel (2006) draw upon Gee’s (1996) notion of Discourses — ways of using language and behaving that identify us as a part of a socially meaningful group — to theorise literacy today as ICT-enhanced and socially situated. They define literacy as “socially recognized ways of generating, communicating, and negotiating meaningful content through the medium of encoded texts within contexts of participating in Discourses (or, as members of Discourses)” (Lankshear & Knobel, 2006, p. 64). Therefore, one’s ability to communicate effectively (or not) within a particular community establishes one as a member or nonmember. Knobel and Lankshear (2014) elaborate on this concept, arguing that “As practices, literacies—all literacies, “new” or conventional—involve bringing technology, knowledge, and skills together within contexts of social purpose” (p. 98). Of note, also influential to some literacy theories underpinning research in English education, is a concept called participatory culture, developed within the context of *media literacies* studies by Henry Jenkins and his colleagues (2006). They suggest that “participatory culture shifts the focus of literacy from one of individual expression to community involvement. The new literacies almost all involve social skills developed through collaboration and networking. These skills build on the foundation of traditional literacy, research skills, technical skills, and critical analysis skills taught in the classroom” (Jenkins, Clinton, Purushotma, Robison, & Weigel, 2006, p. 4). Therefore, for many of these theorists, it is the

emphasis on the collaborative, shared effort in developing understanding and constructing new knowledge together that distinguishes the new literacies from the conventional.

2.5 Definitions of literacy terms in this thesis

Though definitions of literacy are always relative and changing, and “any effort to define literacy for all people in all places and times is doomed to failure” (Keefe and Copeland, 2011, p. 96), it’s important and useful for to have a working definition of literacy, as it shapes one’s practice and research. Moreover, with the current trend to co-opt the term literacy as a synonym for competency (e.g. mathematical literacy, computer literacy, or financial literacy), defining literacy is essential (Adams & Hamm, 2001, p. vii).

In the first place, and in alignment with UNESCO, which established the Experimental World Literacy Program in 1966, and with the Modern Language Association, *literacy* in this research is understood to be a fundamental human right (Keefe & Copeland, p. 92-3). Thus, literacy, and the way in which it is defined, plays a powerful role in one’s social status – and “the acquisition of dominant literacies” (Morrell, 2008, p. 4) provides more access and opportunities for upward social mobility. As Ludwig Wittgenstein (1922) contended, “the limits of my language mean the limits of my world” (p. 74).

Second, the definition of literacy – and understandings of conventional literacy and new literacies – purported in this thesis are strongly influenced by the New Literacy Studies’ sociocultural perspective of literacy (Street, 2003) and the scholarship of researchers and authors working in that space (e.g. Barton & Hamilton, 2008; Knobel & Lankshear, 2014; Leu et al., 2014; Morrell, 2008) [see previous section 2.4]. The definitions presented here also intent to reflect the concept that literacy today is “deictic” – with its meaning continually changing, along with “rapidly changing information and communication technologies, each of which requires new literacies” (Leu et al., 2017, p. 1).

To articulate a working definition of literacy, the author draws upon international and Irish educational policy documents, which also reflect a sociocultural understanding of literacy. For example, the Programme for International Student Assessment (PISA), defines reading

literacy “as understanding, using, reflecting on and engaging with written texts, in order to achieve one’s goals, develop one’s knowledge and potential, and participate in society” (OECD, 2011, p. 40). Similarly, in Ireland, the Department of Education and Skills (DES) purports a definition in *The National Strategy to Improve Literacy and Numeracy among Children and Young People, 2011-2020*; literacy is: “the capacity to read, understand and critically appreciate various forms of communication including spoken language, printed text, broadcast media, and digital media” (p. 8). The context and roles of these documents are described in more detail in subsequent sections (2.6.3 and 3.2.2.1).

Thus, drawing upon these theoretical understandings and definitions purported in influential educational policy documents, in this thesis, **literacy is defined** as the capacity to effectively read (comprehend and critically analyse) and write (create) the various forms of communication required to develop knowledge, achieve goals, and participate effectively in one’s community.

In Knoblauch’s terms, this definition reflects a combination of the first three aims (personal growth, functional, and cultural), as is common in education; in some ways, it is also a rephrasing of the researcher’s beliefs about the purpose of English education (to prepare students with the skills they need to comprehend significant cultural literature and fully engage in their society). It draws upon contemporary understandings of literacy (as articulated in the previously discussed theory, empirical research, and key educational policy documents/curriculum guidelines), which account for the impact of ICT on literacy.

2.5.1 Conventional Literacy and New Literacies

The working definition of literacy in this thesis interprets new literacies as extensions of conventional literacy. This definition aims to capture the significance of interpreting (both new and conventional) literacy as a social practice. Moreover, it emphasises the importance of having the skills both to effectively communicate — whether it’s through oral/written language, gestures, images/video/audio or other semiotics – and to participate fully in one’s community/society-at-large. In alignment with Moje (2009), this interpretation challenges the idea that the proliferation of ICT in people’s pockets has changed the fundamental

nature of literacy. Rather, it envisions ICT as enabling new platforms through which people could communicate, making literacy even more participatory (Lankshear & Knobel, 2006) in that several individuals/groups could more easily collaborate and continually modify a text—written language, image, video, etc.

While new literacies are extensions of conventional literacy in many ways, this thesis draws a distinction between the two, informed by the ways these phrases are commonly used in research, teaching and theory in English education. The term new literacies frequently connotes those evolving literacy practices enabled and skills required by ever-changing ICT, and “conventional literacy” connotes practices associated with and skills required for reading and writing alpha-numeric, textually-based language on printed materials. *Conventional literacy* is singular while *new literacies* is plural, attempting to capture the multiple, dynamic and dietic nature of new literacies (Leu et al., 2017).

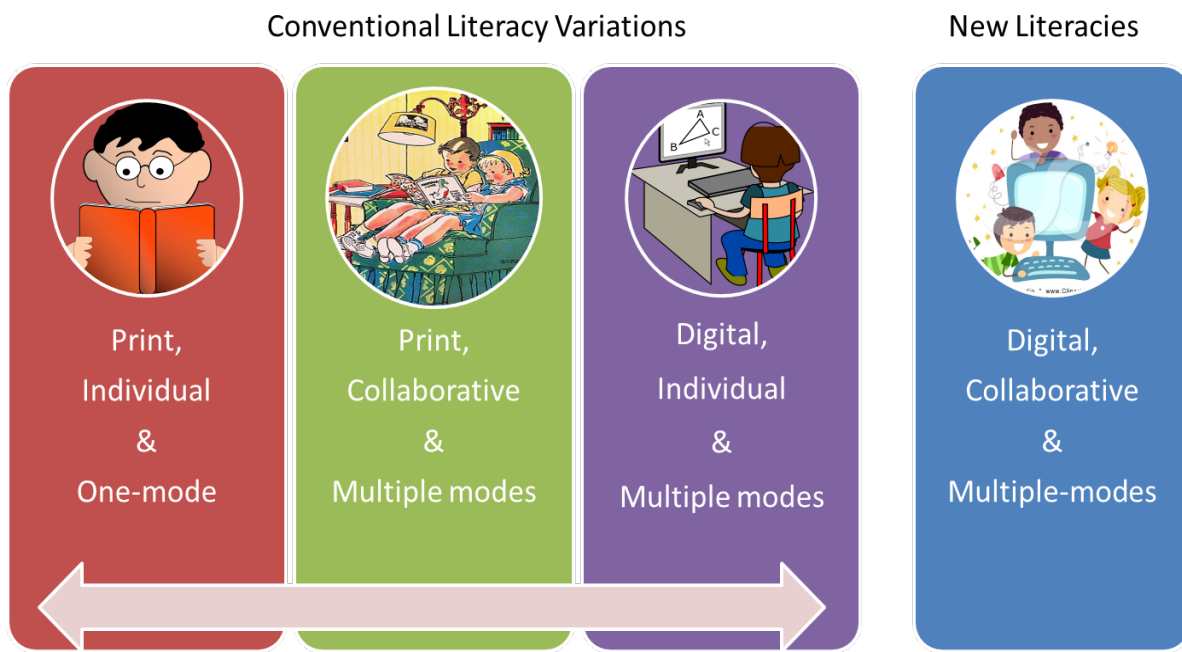
The author contends that new literacies can be distinguished from conventional literacy in that they require all of the following three qualities, used conjointly, to be new literacies:

- Digitally-based,
- Collaborative/participatory, and
- Multiple modes.

If all three qualities are not utilised, then it is conventional literacy. For example, two people (collaborative) may be writing a typical English essay together, using word-processing software (digitally-based). However, because they are only using one mode of communication (alpha-numeric text), then they are engaging in a conventional practice. The software simply replaces the paper and pen. Similarly, a group of students (collaborative) working together to create a diorama (multiple modes) for a project on a novel, yet it is not digitally-based and therefore still a conventional literacy. An example of new literacies is a group of students conducting research online, organising and synthesising their findings into a multi-modal presentation (slideshow, video, etc.) including text, videos, audio and/or images. With new literacies, people can be physically working alongside each other or they can be collaborating virtually, from anywhere in the world. Either way, this conception of new literacies aims to capture the particular social, collaborative ethos of new literacy

practices, as purported by Lankshear and Knobel (2006). The author’s understanding of new literacies is visually depicted in Figure 2.1.

Figure 2.1: Author’s Depiction of Conventional versus New Literacies



In terms of new and conventional literacy *skills*, the author considers there to be a – to borrow Sheridan’s (2009) term – “fuzzy” boundary: many new literacies can be interpreted as extensions of conventional literacies. For example, one would have needed to critically analyse texts prior to the 21st century, yet a *new literacy* skill focuses on analysing texts in an *online digital* environment, which may, for example, necessitate determining the reliability of the information and investigating the “publisher”/creator of the content, as well as analyse the content itself. These skills also consequently require that one knows how to operate the technology (software) tools (which in itself can be considered a new literacy).

Several education organisations already are attempting to define these new literacy skills (usually for the purposes of updating/rewriting curriculum and assessment guidelines), and the author draws upon a prominent, internationally-leading professional association of educators in English studies, literacy, and language arts – the National Council of Teachers of English (NCTE) – to articulate an understanding of new literacy skills. The NCTE (2013)

argues that today's literacy demands have implications for teachers and students of English and "that the continued evolution of curriculum, assessment, and teaching practice itself is necessary." The NCTE (2013) outlines a discrete set of "21st century literacy skills," arguing that "active, successful participants" of today's society must be able to:

- Develop proficiency and fluency with the tools of technology;
- Build intentional cross-cultural connections and relationships with others, so to pose and solve problems collaboratively and strengthen independent thought;
- Design and share information for global communities to meet a variety of purposes;
- Manage, analyze, and synthesize multiple streams of simultaneous information;
- Create, critique, analyze, and evaluate multimedia texts;
- Attend to the ethical responsibilities required by these complex environments.

This list of skills further highlights the ways in which several new literacy skills are extensions of the conventional literacy skills one needed prior to the 21st century – as well as the development and distinction of *new literacies*. For example, the skills of creating, critiquing, analysing and evaluating texts have long been important literacy skills, but the emphasis here is on the application of those skills to *multimedia* texts. [These skills are also similar to skills identified as key 21C skills (Voogt & Roblin, 2012) needed by today's students (section 2.6.3 elaborates on this idea).]

2.6 Integrating New Literacies in English education: The Rationale

Though there is debate about how exactly ICT has changed literacy/literacy practices and the 'criteria' for what constitutes new literacies, it is generally agreed that ICT effects the ways in which people, and adolescents particularly, communicate; and these changes, therefore, impact English education. Researchers and practitioners, as well as policy-makers and curriculum writers, are drawing upon the theoretical literature and studies conducted in out-of-school contexts (Jacobs, 2012), and some preliminary empirical studies, to justify the integration of new literacies into the in-school English classroom environment. As Grabill and Hicks (2005) argue, the New London Group's "conception of literacy as a linguistically, technologically, and socially-situated practice calls for us, as English educators, to rethink traditional literacy practices...entail[ing] new understandings of 'texts,' reading, and writing"

(p. 302). Indeed, given that literacy is an intricate part of English education, the new literacies require teachers to reflect on their practices and adjust as necessary to continue to meet the aims of English education.

In the literature, scholars, researchers, educators, policy-makers and others argue for integrating new literacies in English for a variety of reasons. The author argues that this multiplicity of reasons can be summarised into two main points. First, there is potential to engage students in English through the use of new literacies, by “bridging the literacy divide” between adolescents’ out-of-school and in-school literacy practices. Second, there is a need to prepare students with the (new) literacy skills they need for today’s economy and future success. Consequently, changes to English education curricula, internationally, are underway.

2.6.1 The potential to engage students in English

Several scholars have suggested that there is a disconnect between the ways adolescents are developing literacy skills outside and inside of school (Hutchison & Reinking, 2010; O'Brien & Bauer, 2005). This disconnect can lead to disengagement and/or disinterest in school, as students do not recognise the use for the type of literacy skills they are learning in school English in their actual lives and vice versa (Alvermann, 2008).

In informal settings, some adolescents are participating in new literacies – writing, creating, and interacting, locally and globally, in unconventional ways, such as:

- Reading, writing and creating fan fiction in which they use “characters, settings, and themes within literature as inspiration for their own creative work” (Curwood, 2013, p. 417). Using their favourite literature as a base, they create spin-off stories, poetry, artwork and more, and share these products in online forums (see also Black, 2009; Chandler-Olcott & Mahar, 2003; Thomas, 2007).
- Interactive gaming (playing, writing, providing feedback, etc.) in online spaces (Gee, 2000; Knobel & Lankshear, 2008). Overall, nearly three-quarters (72%) of teens report playing video games online or on their phones (Lenhart, 2015, p. 23).

- Remixing media (i.e. pairing incongruous music, text, videos, and images) to create humorous or political statements for sharing with a wide audience (Knobel & Lankshear, 2008; Shamburg & Craighead, 2009)
- Participating in social network platforms (such as Facebook), in which they manage and maintain relationships through literacy practices (Boyd, 2007). According to a Pew Internet report, facilitated by the increase in access to mobile smart phones, 92% of American teens go online at least once a day, and they 89% use social network sites such as Facebook, Instagram, or Snapchat (Lenhart, 2015, p. 25).
- Blogging, vlogging, or other personal, online journaling. However, in the most recent Pew study related to this topic, the number of teens creating blogs has declined to 14%, as they increase their use of social media platforms and are “exchanging ‘macro-blogging’ for microblogging with status updates” (Lenhart, Purcell, Smith & Zickhur, 2010, p. 2).

According to some scholars, by participating in these types of new literacy practices, adolescents are developing self-identities, building social communities, and preparing themselves for future success (Alvermann, 2008; Egan, FitzGibbon, & Oldham, 2013; Leu et al., 2004). Moreover, some are developing a sense of identity as competent, powerful, and/or literate beings (Bailey, 2009; Chandler-Olcott & Mahar, 2003; Thomas, 2007). Alvermann (2008) summarises and expresses these common ideas, when she argues: “Young people are tirelessly editing and remixing multimodal content they find online to share with others, using new tools to show and tell, and rewriting their social identities in an effort to become who they say they are. In a nutshell, adolescents with access to the Internet are developing the literacies that will serve them well in the years to come” (p. 10).

These sophisticated out-of-school literacy practices, however, tend to differ from how they experience literacy in school: there is a divide “between the rich literate practices used by young people in their homes and the narrow and restricted practices engaged in by schools and teachers” (Henderson & Honan, 2008, p. 86). Moreover, new literacies have not been rewarded nor utilised in formal educational settings; instead, a privileging of canonical texts, conventional literacy practices and print-and-paper-based texts persists (Henderson, 2011; Hundley & Holbrook, 2013). Consequently, when adolescents’ new literacies are not valued,

recognised or considered legitimate in school, students may not see themselves as literate beings or lack confidence in their literacy skills.

González, Moll, and Amanti (as cited in Gainer & Lapp, 2010) argue, “We also see great potential in bridging students’ out-of-school knowledge and interests with school-based literacy goals” (p. 59). Moreover, it is argued that recognising their literacy practices can increase their motivation to participate and ultimately succeed (Hinchman & Sheridan-Thomas, 2014). Integrating students’ out-of-school new literacies into school literacy and learning goals, in other words, can help build students’ confidence and engagement in their literacy activities in the formalised school setting.

This argument is further supported by Curwood (2013), who from her study of online affinity spaces and young adult literature, purports that through “young people’s active participation in online spaces” (p. 417), they learn valuable communication skills and critically engage with texts/literature; consequently, she recommends integrating technology in the teaching of literature. Unsworth (2008) argues a similar point: “There is an opportunity in working with e-literature and online literary resources to bring the complementary expertise and experience of children and teachers together in their shared enjoyment of exploring children’s literature” (p. 70).

Although much of the research into adolescents’ engagement in new literacies “is typically phenomenological and qualitative and conducted by scholars working from a sociocultural perspective who often gather data outside school settings” (Jacobs, 2012, p. 272), these findings have had implications in English education. It is commonly suggested that by using the ICT and new literacies with which adolescents are familiar, educators can increase students’ engagement in English and increase their confidence by validating students’ pre-existing, out-of-school literacies. Furthermore, it is thought that new literacies and the technologies which enable them can provide multiple forms of representation to help engage a wide spectrum of learners in the learning process; moreover, they can offer students a number of ways to express their knowledge (NLG, 1996; Rose & Meyer, 2002). New literacies can provide flexibility in the learning process by providing a wider variety of options and accommodate the needs of a diverse group of students (Rose & Meyer, 2002).

Of note, the author acknowledges that several of these arguments are not unique to English education – they are present across the curriculum. The use of ICT “has come to be seen by education policy-makers as a significant opportunity. They are attracted to the prospect that ICT can improve student achievement, improve access to schooling, increase efficiencies and reduce costs, enhance students’ ability to learn and promote their lifelong learning, and prepare them for a globally competitive workforce” (Isaacs, 2011, p. 4).

2.6.2 The need to develop students’ literacy skills

In English education, however, integrating technology is not only about a potential opportunity, but also meeting the literacy needs of today’s students. Though some adolescents are developing some “sophisticated” new literacies, they are lacking in some of the skills and strategies they need for success in their future civic, private and economic lives (Dwyer, 2016; NLG, 1996). It is argued that, “The world is experiencing a major shift from an economy and society based on mass production to one based on knowledge creation” (Isaacs, 2011, p. 4). In this “age of information,” knowledge is valued more than production and the workplace is organised more “horizontally, with teams within lower levels of the organization empowered to make important decisions related to their functioning” (Leu et al., 2004, p. 1576). Therefore, today’s organisations are seeking a different type of employee – a team-member who can: “quickly identify important problems, locate useful information related to the problems they identify, critically evaluate the information they find, synthesize this information to solve the problems, and then quickly communicate the solutions to others” (Leu et al., 2004, p. 1576). In other words, the rising generation of students needs new literacy skills to participate effectively in today’s organisations – private, social, economic, or employment-related. To capture a similar idea, The NLG (1996) introduced a concept called Design to signify that people “are both inheritors of patterns and conventions of meaning and at the same time active designers of meaning. And as designers of meaning, we are designers of social futures — workplace futures, public futures, and community futures” (p. 65). In such a world, students need to be prepared to become active designers of their own social futures.

Recent studies, however, suggest that adolescents are lacking key skills, strategies, and/or personal dispositions/competencies for thriving in this age of information. Although they spend a significant amount of time using ICT and being online, they are “messing around” – they are not all “sophisticated users of technology and have not realised the potential of the Internet as a site for deep learning and knowledge construction” (Dwyer, 2012, p. 3). The areas in which students struggle are similar to those that Leu et al. (2004) identify as being essential skills: finding and evaluating appropriate information online; critically reading and analysing information online; navigating the overwhelming amount of information available; and synthesising and communicating information (Dwyer, 2012; Leu, et al., 2012; Leu, et al., 2017; Mills, 2010). Mills (2010) argues that “greater emphasis should be placed on expert scaffolding of these literacies in school settings in order to extend students’ repertoires of skills and genres” (p. 35). In addition to developing these skills, they also need to develop strategies, dispositions, and personal competencies for learning in a complex digital environment (Dwyer, 2016; Ito et al., 2013; Spiro, Coulson, Feltovich & Anderson, 2004). As Spiro et al. (2004) argue, authentic learning occurs in domains that are often “ill-structured” and “complex” (as opposed to the linear, unidimensional modes of learning presented in traditional school environments) – and digital, online environments, which are “non-linear, dynamic [and] multimodal” (Dwyer, 2016, p. 385) are particularly unstructured. In this type of environment, where students can easily become distracted, students need guidance in constructing knowledge from the various domains they encounter online, and they need to develop certain strategies/dispositions for interpreting and communicating in these online spaces (Dwyer, 2016; Spiro et al., 2004). For example, they need: flexibility and persistence to engage and build knowledge in non-linear, complex online domains (Spiro et al., 2004); self-regulation and resilience when encountering the often over-whelming amount of information available in digital spaces (Dwyer, 2016); and openness and conscientiousness to participate in the complex learning environments of the 21st century (Ito et al., 2013).

A related concern is that adolescents’ skills vary, based on their access to technology outside of school, and subsequently their differing opportunities to develop new literacies. Their access is related to their family income – leading to a kind of “digital divide” (Curwood, 2013; Henderson, 2011; Lenhart, 2015). For example, in America, 78% of teens whose annual household income is above \$75,000 have a smartphone – as compared to 61% of

teens whose annual household income is \$30,000 or less (Lenhart, 2015, p. 9). Income also impacts access to desktops, laptops, and tablets, with wealthier families more likely to have at least several of these devices (Lenhart, 2015, p. 10).

Because of these differences based on family incomes, it is essential to teach new literacies in schools; otherwise, “the digital divide will continue to widen and not all students will be provided with 21st century skills and experiences” (Curwood, 2013, p. 425). In other words, a “digitally determined...Mathew effect” potentially will be created – one, “where the rich get richer and the poor get poorer, and where those students who have limited access to Internet technology” are the ones not being prepared sufficiently “for life in an information age” (Dwyer, 2012, p. 5). This reflects the concerns of NLS scholars such as Gee (2000) (see section 2.5) who believe an autonomous or functional view/approach to literacy in schools perpetuates the existing inequalities of society by reinforcing a basic level of reading and writing among a traditionally lower-income (and usually lower-level-educated) population instead of giving them access to the more sophisticated, multiple literacies required for today’s economy (p. 413). Because of this divide and variance in skills, educators need to “explicitly teach new literacies” and “fully integrate and embed digital technologies for literacy as essential components of the classroom curriculum” (Dwyer, 2012, p. 5-6). Furthermore, “Since not all students have out-of-school access to the Internet, it is vital that teachers participate in technology-focused professional development and integrate online literacies into the curriculum” (Curwood, 2013, p. 425).

In summary, as new technologies and new literacies continually expand, the structure of our lives is changing and the literacy skills one needs to participate fully in society increase. These changes have consequences for education systems and educators are now responsible for preparing *all* students for this the age of information or knowledge economy (Borsheim et al., 2008; Dede 2010; Isaacs, 2011; Leu et al., 2004; NLG, 1996). English educators have a unique role in this responsibility.

2.6.3 The 21C Teaching and Learning Movement & Curricula Changes

The focus in English education on the new literacy skills students need for today’s society is happening parallel to and within the context of the broader, international educational

community's emphasis on the concept of "21C teaching and learning." It is often argued that educators must prepare young people to be successful in the rapidly changing workplace of the knowledge economy: people need different skills "for work, citizenship and self-actualisation" in the 21st century, as compared to the previous 100 years (Dede, 2010, p. 51). Internationally, the "21st Century Skills" movement – educators' focus on modifying curriculums and standards to emphasise teaching 21C skills – has been on-going for more than a decade (National Education Association [NEA], 2015). Yet, questions remain on how to move education forward and implement the teaching of these skills (NEA, 2015), and no universally recognised standard or set of 21C skills has been defined. For example, The OECD's Centre for Educational Research and Innovation (2010) defined 21C learning outcomes as: knowledge building; problem-solving and innovation; skilled communication; collaboration; self-regulation; and use of technology for learning (p. 121). In the United States, the NEA's most recent publication (2015) is somewhat different and advocates teaching the "Four C's": Critical Thinking and Problem Solving; Collaboration; Communication; and Creativity and Innovation.

Despite some diversity, Voogt and Roblin (2012) identified through their review of international frameworks for 21C competencies, a common set of skills that exist in most standards, which includes problem-solving, creativity, communication, collaboration, and technological fluency. These skills are not subject-specific but cross-curricular, and while their importance is not new to the 21st century (a criticism of some critics, such as Silva (2009)), the emphasis upon acquiring them through curricular integration and the potential of technology to assist in this process, makes them educationally innovative (Dede, 2010; Voogt & Roblin, 2012). Similarly, the 21st Century Literacies outlined by the NCTE (2013) are not all new to this century, but the focus on the role of ICT within them is new and creates new skills one needs.

In response to these affirmations of new skills needed by the rising workforce, educational organisations are making changes to standards and recommendations across their curricula. In the field of English education, leading associations such as the U.S.A.'s National Council of Teachers of English (NCTE), as previously discussed, have outlined a discrete set of new literacy skills (which they call 21st century literacies), which they recommend embedding in

teaching and learning English. These include skills such as effectively using ICT; collaborating and solving problems with others; creating, analysing and/or sharing multimedia text for global audiences; and managing, analysing and synthesising information (NCTE, 2013) (see 2.5 for the complete list).

A similar argument is represented in the policy documents such as the “Common Core” (the closest thing to a national curriculum that exists in the United States). As Drew (2012) explains, in the introduction to the standards for English/literacy, the authors argue that, “To be ready for college, workforce training, and life in a technological society, students need the ability to gather, comprehend, evaluate, synthesize, and report on information and ideas, to conduct original research in order to answer questions or solve problems, and to analyse and create a high volume and extensive range of print and nonprint texts in media forms old and new” (p. 323). Accordingly, the learning objectives written in the Common Core standards reflect this viewpoint.

At a global, international level, the Programme for International Student Assessment (PISA), has also responded to the changes to conceptions of literacy brought on by people’s use of ICT. PISA, a subset of the Organisation for Economic Co-Operation and Development (OECD), aims to “monitor the outcomes of education systems regularly within an internationally agreed framework and it provides a basis for international collaboration in defining and implementing educational policies” (OECD, 2011, p. 3). Accordingly, they create, distribute, analyse and report on assessments of students worldwide, measuring their performances in a variety of subjects. For the 2009 PISA assessment, they updated their reading literacy test to include *digital* reading as well. Interestingly, they define reading literacy “as understanding, using, reflecting on and engaging with written texts, in order to achieve one’s goals, develop one’s knowledge and potential, and participate in society” (p. 40) and argue that it’s “applicable” to both digital and print reading. This type of definition reflects the ideas put forth through sociocultural literacy theories and other major organisations such as UNESCO (section 2.4.2). Therefore, not only are curriculum guidelines changing, but international assessments – which in turn affect policy and educational standards as well as opportunities – are already attempting to measure students’ skills and achievement in some areas of new literacies. [Section 3.2 discusses in more detail the local

context of this research, Ireland, and how the concepts of 21C skills and new literacies have influenced its curricula standards.]

2.7 English teachers' perspectives on ICT/new literacies

With the theory and empirical research conducted in settings out-of-the English-classroom-context suggesting that new literacies can engage students more in English and that adolescents need to learn new literacy skills, curriculum standards are already changing. As such, English teachers are now held responsible for teaching new literacies. This section synthesises the results from the few studies available (<10) dedicated to investigating specifically English teachers' (both pre- and in-service) beliefs regarding new literacies, ICT, and/or other related concepts. Most of these studies were conducted in North America or Australia; they mostly were small scale, using surveys, interviews, case studies, and observation methods to collect data, and they analysed qualitative data through coding and thematic grouping to draw conclusions. Some of these studies also involved facilitating professional development and/or postgraduate level instruction with pre- and in-service teachers. These data are useful in understanding how the theory, research, and policy have been translated (or not) into teaching practices.

2.7.1 Beliefs about the roles of technology and new literacies

Importantly, it is evident from these studies that English teachers generally are open to including technology more in their teaching (Hutchison & Reinking, 2010). According to McGrail (2005) teachers are open to including computers or other technologies in their teaching if they are "convinced" there is a "gain for their students as well as for their own instructional practices" – if they see an *English pedagogical* benefit to integrating it into their practice (p. 5). However, their beliefs about what makes ICT beneficial, and therefore the role of technology in the English classroom, vary.

For example, some teachers believe that the role of technology/new literacies primarily is to support the learning of traditional literary content and conventional literacy skills (Peterson & McClay, 2012). In their study of 65 pre-service teachers, Hundley and Holbrook (2013) found the teachers were resistant to the place of new literacies in English, expressing "beliefs that 'real writing' meant conventional print texts" (p. 506). Instead, they saw

technology as support for developing more “school-based literacies” (p. 505): for example, using a word processor to write an essay. Similarly, in a small-scale case study, Henderson (2011) found that, “the teachers saw the teaching of literacies as separate from computers and other technological devices, even though [the teachers] regarded both the learning of technology and the learning of literacies as important” (p. 160). Moreover, the teachers used the technology to conduct didactic lessons, focused on learning one specific objective (Henderson, 2011, p. 159). Similarly, from their small case study, Flanagan and Shoffner (2013) found teachers valued integrating technologies into their instruction because they saw it as advantageous to their students; however, one teacher “viewed technologies as having a secondary role, choosing to integrate technologies only if they added to her instruction” (p. 242). Moreover, a U.S.-based survey, inclusive of 95 English teachers, revealed that many of these teachers still see computers as separate from teaching and learning the writing process (Graham, Capizzi, Harris, Hebert, & Morphy, 2014).

Other scholars have found a different viewpoint among teachers with whom they’ve worked: technology/new literacies can be used to support “traditional” curricular goals (learning literary content and conventional literacy skills), but in the process students can learn new literacy skills. This viewpoint aligns with the interwoven argument expressed in this thesis (see section 2.6) about the potential of using new literacies to engage students’ in English and the need to teach adolescents new literacy skills. For example, McVee, Bailey, and Shanahan (2008) conducted a case study involving 16 preservice and in-service teachers enrolled in a new literacies master’s course; by participating in creating multimodal poetry projects, teachers developed their own new literacy skills and began to consider how they might use these practices in their own classrooms — or draw upon their students’ new literacies “to help support learning in new ways” (p. 137). Similarly, Miller (2007) conducted a study involving 95 teachers and their students, which focused on digital video (DV) composing in the classroom. She found that teachers began to understand DV composing as a new literacy practice, which can facilitate social and collaborative learning, and the role it can have in the English classroom. This argument has been cycling at least as far back as the year 2000, when in an article designed to share ways in which they used technology in their university-level English-teaching education, Pope and Golub (2000), purported: “English language arts methods classes can infuse technology in a way that does not interfere with

the content pedagogy but supports it in a way that actively involves students and prepares them with the technical and pedagogical skills for creating the new learning-centered classroom” (p. 96). This two-part argument underpins much of the empirical research conducted by practitioners and scholars (section 2.8).

Other teachers – and the researchers with whom they work – express more progressive beliefs about technology and new literacies, arguing that new literacies should be the primary aim of English and advocating an overhaul of the traditional curriculum for a focus on new literacies and the content – the media – created with them. For example, Apperley and Beavis (2011) collaborated with teachers from five schools to create digital-games-based units in their English teaching. They envisioned digital games as “texts,” which they argued could be utilised to develop a range of sophisticated new literacies. From their 3-year ethnographic study, they argue that “the various practices of game design...sustain reflective space for critical literacy” (Apperley & Beavis, 2011, p. 137). Dockter, Haug & Lewis (2010) completed a one-year action research study with students in an urban environment in which they implemented a “digital media curriculum” (rather than canonical literature). Students ultimately produced documentaries, for which they had to: “choose topics for production pieces, develop significant questions to ask, identify their sources, and determine the best way to deliver their messages” (Dockter et al., p. 418). Dockter et al. (2010) argue that the students were more engaged in this curriculum because it “paired digital tools with intellectual challenge, hard work, interactions with community members, and a space for students to represent their identities and demonstrate competence” (p. 418).

From reviewing these (albeit limited) studies, it is clear that English teachers range in their beliefs about how and why new literacies/technology should be integrated into the curriculum. Though some are ready to embrace new literacies, and perhaps overhaul the curriculum, others are more reticent, seeking professional development and “evidence” of benefits. Notably, however, there is a general *openness* to including new literacies in their practices among English teachers, who indicate that they see the relevance and importance of new literacies in their students’ lives.

2.7.2 Barriers to integrating ICT in English

Among available studies, two main themes emerge as barriers to English teachers' meaningful integration of new literacies into their practice: a lack of resources and the need for professional development.

Even the most enthusiastic and well-intentioned English teachers cannot integrate new literacies if they do not have access to ICT resources. Hutchison and Reinking (2010) surveyed 1,441 predominately literacy U.S.A.-based teachers, aiming to clarify which barriers they, as compared to teachers in general, "perceived as inhibiting their integration of ICTs into their instruction" (p. 230). They found that a lack of access to technology was the second most common barrier reported (Hutchison & Reinking, 2010). [The first was lack of time in the class period, which perhaps reflects the perception of technology as a secondary tool (see 2.7.1).] Flanagan and Shoffner (2013) also report that teachers feel limited in their "access to English-specific resources regarding the technologies" and "to the technological hardware/software itself" (p. 257). Of course, these barriers are not unique to English teachers and are commonly cited as a barrier to the adoption of ICT in education in general (Donnelly, McGarr & O'Reilly, 2011; Egan, Fitzgibbon & Oldham, 2013; European Commission, 2013; Somekh, 2008).

The other major barrier to integrating new literacies/ICT in English education is the need for more professional development. Some studies demonstrated that teachers report a "lack of professional development on how to integrate technology...and lack of technical support" (Hutchison & Reinking, 2010, p. 238). They conclude that "in order to increase and improve technology integration," more professional development is needed (p. 240). Flanagan and Shoffner (2013) also found that teachers felt "a lack of support and training" in using ICT in their English teaching (p. 257). In case studies that involved teacher-educators instructing their students (pre- or in-service English teachers), researchers conclude their reports by recommending more training and professional development for the teachers to learn *how* to integrate ICT/new literacies into their practice (Miller, 2007; Flanagan and Shoffner, 2013). Moreover, some teachers need guidance developing their own new literacies; some studies found teachers were not as tech-savvy as they claimed and struggled to fully express

themselves in mediums other than textually-based written communication (Hundley & Holbrook, 2013; Karchmer-Klein, 2012).

2.7.2.1 Addressing the Barriers

A few researchers have reported on their attempts to address these needs by using the TPCK/TPACK (Mishra & Koehler, 2006) – Technological Pedagogical Content Knowledge – theoretical framework to situate their studies, theories, and/or the design of professional development opportunities for teachers. The TPACK framework is based on the work of Shulman’s (1986) concept of pedagogical content knowledge (PCK) (Parr, Bellis & Bulfin, 2013, p. 9) in which he argued that the interplay of a teacher’s pedagogical strategies (PK – pedagogical content) and subject matter content (CK – content knowledge) “allows teachers to both interpret subject matter and make it accessible for learners” (Hutchinson & Woodward, 2014, p. 457). Mishra and Koehler (2006) build on PCK and add in technology as a third knowledge domain; they describe TPACK as the following:

Our model of technology integration in teaching and learning argues that developing good content requires a thoughtful interweaving of all three key sources of knowledge: technology, pedagogy, and content ... Quality teaching requires developing a nuanced understanding of the complex relationships between technology, content, and pedagogy, and using this understanding to develop appropriate, context-specific strategies and representations. Productive technology integration in teaching needs to consider all three issues not in isolation, but rather within the complex relationships in the system defined by the three key elements. (p. 1029)

The TPACK framework, therefore, aims to emphasise the interplay among the necessary types of knowledge (technology, pedagogy, content) “that allow teachers to interpret curricular standards and goals and make that content accessible to learners through their instruction and the integration of digital technology” (Hutchinson & Woodward, 2014, p. 457). Dwyer (2016) builds on the TPACK framework and argues, “we need to build curriculum that reflects three elements – the content we are teaching, the pedagogies we are using, and the appropriate use of digital technologies” (p. 384). The PCK and TPACK frameworks have become increasingly popular in underpinning education ‘reforms,’ teacher-training programmes and professional development opportunities across disciplines

(Parr et al., 2013). In English education, Carlson and Archambault (2013), for example, report on their study, underpinned by the TPACK framework, which involved teaching pre- and in-service teachers about the affordances of the particular software VoiceThread, and how it could be used in teaching poetry. They argued that “After leveraging VoiceThread to design a poetry unit, preservice English teachers expanded their views, which enabled them to recognize the value of integrating technology to teach an already-difficult part of the English curriculum” (p. 137). They concluded the TPACK framework can be a useful guide for helping teachers understand how to blend new technologies with pedagogical strategies for teaching poetry to adolescents.

Hutchinson and Woodward (2014) also used TPACK to address the need for professional development, but took a different approach, theorising a “planning cycle for integrating digital technology into literacy instruction” to help teachers incorporate “digital tools into instruction” and capitalise on the “affordances of using digital tools” (p. 456). The planning cycle aims to help teachers consider the learning objectives and how technology can be used to help support those; it suggests exiting the cycle if the technology does not support the learning goal, reflecting a belief among some English teachers about the role of the technology to support traditional English pedagogical goals. Of note, the planning cycle was designed more for primary school literacy teachers; though it may be useful in some ways in secondary school, it would not necessarily, for example, help guide teachers in meeting new literacies learning objectives and demonstrating how to integrate those into curriculum.

Despite its popularity, the PCK and TPACK models have also received much criticism; there is concern that these frameworks “compartmentalise professional knowledge of English teaching and ICT knowledge into separate ‘packages’...with the presumption that expertise for subject content and pedagogy lies in different communities” (Parr et al., 2013, p. 13-14). It is argued that because the TPACK model divides PK, CK and TK into discrete categories of knowledge, demarcating them before integrating them, TPACK:

fails to appreciate that in the richest processes of teaching and learning, knowledge is engaged with, interpreted and reinterpreted, challenged and built upon; new knowledge is often generated dialogically through teaching and learning...knowledge

which could never be found in reified bodies of thought that supposedly exist outside of schooling. (Parr et al., 2013, p. 15).

Furthermore, it is suggested the PCK and TPACK are being used in era of standards-based education to be able to easily identify, categorise and assess the professional standards for teachers (Parr et al., 2013, p. 15). In other words, knowledge – of content, pedagogy and technology – is treated as a stable construct which teachers can learn and learn to transfer to their students (despite the constantly evolving nature of knowledge and contribution of technology in that process).

While the TPACK framework might be considered flawed in these ways, several initial studies related to the professional development of English teachers have shown that the TPACK theory can be a useful framework for situating one's work with teachers and/or research. While it can be considered reductive and limiting, the developers of TPACK do acknowledge the overlap among the categories they present as discrete and encourage development of those intersections (e.g. technological content knowledge) (Mishra & Koehler, 2006) and the interplay of all three areas. For example, the TPACK framework can help researchers/educators consider how to move beyond simply making technology more available to develop “meaningful integration into curriculum to deepen learning” and to use technology as a “tool for literacy and learning” (Dwyer, 2016, p. 384). As this Ph.D. research involved both developing a pedagogy for integrating new literacies (technology) into English and working with English teachers, the TPACK framework was a useful theory to consider in developing the continuous professional development workshops and viewing the results of the Exploratory Case Study: Teachers (see chapters 7 and 8).

Though TPACK can be considered a valuable theoretical model, it is important to note that it “is not a practical guide for helping teachers plan instruction with digital technology” (Hutchinson and Woodward, 2014, p. 457). TPACK does not provide a practical guide for integrating technology into a subject area, and it is not a model for educating teachers in how to integrate technology (or new literacies) in their practice. Rather, it provides a framework for considering important aspects to include in this process.

2.8 Integrating New Literacies in English: The Empirical Studies

Usually positioned within a similar theoretically-based, dual-pronged argument that there is potential to engage students in English through the use new literacies and a need to teach students (new) literacy skills (sections 2.6 and 2.7.1), some researchers and/or teachers have conducted studies involving their efforts to integrate new literacies or implement a new literacies/“multiliteracies pedagogy” (e.g. Borsheim et al., 2008) in the classroom. Much of this work has supported the rationale for teaching new literacies (section 2.6) and aimed to provide practical examples for other teachers. For example, Gainer and Lapp (2010) make clear: “Our goal in this article is to share instructional examples that help teachers develop the confidence needed to design and support a remixing of literacy instruction that in many cases will involve students taking the instructional lead” (p. 59).

Based on the inclusion criteria outlined (section 2.2.1), the number of relevant empirical studies and published in scholarly journals/sources, is not abundant (less than twenty). The studies were mostly conducted in the U.S.A, and focus on a learning intervention conducted with about 1-3 teachers/facilitators and their respective classrooms. Results are drawn from a variety of research methods and data sources – observation; interviews (1:1, or small focus groups); surveys; and analysis of student products. Though the available research is not extensive, a review of the findings shows that in most cases, the efforts of practitioners and researchers to integrate new literacies in English have had a positive impact on students’ engagement in English; these results help justify teaching new literacies and support many of the ideas purported in the theoretical literature. It is also reported that through these learning interventions, students are developing their literacy skills (conventional and new).

This section reports these studies by first summarising the ways in which practitioners and researchers are using new literacies, describing the types of activities and interventions about which they report. Then, it synthesises their findings, as they relate to the impact on students’ engagement and skill development.

2.8.1 Types of Tasks/Projects

In several of the learning interventions, students complete tasks that encourage them to use the new literacies, technologies, and media content from their own lives to engage with significant literature. Some scholars have dubbed this concept “remix” – by which they aim to signify to “take cultural artifacts and combine and manipulate them into new kinds of creative blends” (Knobel & Lankshear, 2008, p. 22). For example, Shamburg and Craighead (2009) encouraged students to use computer applications to remix contemporary video and audio with the words of Shakespeare’s plays to create new multimedia productions. Gainer and Lapp (2010) also used “remix” in their traditional research projects; their students read the works of Langston Hughes and Zora Neal Hurston and completed a research project on 1920s American literature and racism. This project involved using software applications, such as Comic Life, which allowed students to insert photos and speech bubbles to “create fictitious dialogues between themselves and the author,” insert audio/music, and add reflections to make and demonstrate their understandings of the connections between racism then and now – remixing old and new media (Gainer & Lapp, 2010, p. 60). Along these lines, Kimbell-Lopez, Cummins, and Manning (2014) used programs, such as Audacity, Prezi and Wordle, to support their students in learning how to interpret canonical poetry or to write original poetry.

Similarly, other researchers (e.g. Blase, 2000; Borsheim et al., 2008; Kimbell-Lopez et al., 2014; McWilliams et al., 2013) aimed to harness the power of social media platforms in their English teaching. Their students used forums such as Twitter, web chat rooms, email, and other software applications to connect with their classmates and/or to communicate with students in other schools. They read classic literature such as *Their Eyes Were Watching God* and *The Crucible* and poetry and then posed questions, discussed literature, built websites, invited responses, and offered ideas via email and websites. In several of these studies, students also considered and/or developed guidelines for effective online communication. In these environments, teachers embrace collaborative writing forums such as listservs, chat rooms, instant messaging as platforms for students to “exchange ideas, drafts of writing, and reading reflections. [They] are about sharing and group processes rather than isolation” (Hogue, Nellen, Patterson & Schulze, 2004, p. 70).

Other researchers took an approach to using new literacies, which focused more on personal growth and skills development – and less on engagement with significant literature. For example, Curwood and Cowell (2011) developed an “iPoetry” project over the course of three years project in which students created digital poems, with the aim of learning new literacy skills. Gainer and Lapp (2010) also conducted a learning intervention in which their students read documentary poetry, and then used digital tools to create their own biographical documentary *digital* poems. Similarly, Dockter et al. (2010) implemented a “digital media” curriculum (rather than canonical literature) in which they aimed for students to develop new literacy skills through filming, editing, and producing personally relevant video documentaries.

While most studies published in the English education literature report on the impact of the efforts of teachers/researchers to integrate new literacies, some have focused more on the integration of technology tools – where the technology was essentially used as a substitution for a non-digital tool. For example, Dierking (2015) completed a study in which “reluctant” readers completed their independent reading with e-readers rather than physical books. Similarly, Malin (2010) conducted a learning intervention, which involved her students listening to recording of a short story aloud and answering questions. These types of studies were uncommon: it seems that in English education research, educationalists are interested in developing students new literacy skills and/or the potential to engage them through the new literacies students use in out-of-school settings (in contrast to the technology tools alone).

2.8.2 Findings

2.8.2.1 Engaging Aspects of New literacies

In reviewing the available studies collectively, the author identified several themes regarding the ways educators used new literacies in English that helped make it an engaging experience for students – or not. These studies (e.g. Curwood & Cowell, 2011; Kimbell-Lopez et al., 2014; Gainer & Lapp, 2010; Shamburg & Craighead, 2009) emphasise that the collaborative, social, participatory aspects (Barton & Hamilton, 2000; Gee, 1996) of the new

literacies (rather than the technology tools alone) can make experiences engaging – also supporting the notion purported by Jacobs (2012).

Viewed collectively, these (albeit few) empirical studies can begin to extend understanding about why and how new literacies can be used to engage the students. For example, new literacies *demand* participation (McWilliams et al., 2013), and consequently can create an authentic audience (Blase, 2000; Borsheim et al., 2008; Hogue et al., 2004). For the presence of an internet audience (public users, classmates, or others), students are challenged to write and express themselves more articulately (Hogue et al., 2004); to critically consider how to communicate effectively online and the “power of language” (Blase, 2000, p. 51); and to carefully select subjects of their writing, participate in meaningful discussions about their work with peers and revise meticulously (Putnam, 2001). Moreover, Borsheim et al. (2008) argue that for their students, it was not only the authentic audience created by the internet that made their students’ research projects feel more authentic, but that the technologies they used to complete the projects “scaffold students’ development of these traditional skills and make the purposes and processes more authentic than they were in the past” (p. 88).

Another common theme is that ICT/new literacies can help facilitate a self-reflection process, which is engaging to students. Dockter et al. (2010) argue that the students in their study (who created documentaries) were more engaged in their new digital media-based curriculum because the ICT helped provide a “space for students to represent their identities and demonstrate competence” (p. 418). These students reported that this was the hardest they’d ever worked in school and most intellectually challenged they felt; moreover, it inspired them to think deeply about racial/ethnic identities and how to express their ideas (Dockter et al., 2010). Gainer and Lapp (2010), whose students also created documentary films, argue that these practices have the “potential to expand students’ understandings about race, history, society, and their participation” (Gainer and Lapp, 2010, p. 60). Similarly, it has been argued that new literacies can help students “find” and “use” their own voices – or, in other words take control of their own learning and achieve their own educational goals (Borsheim et al., 2008). Shamburg and Craighead (2009) argue: “When students integrate movies and songs from their lives with Shakespeare's words and worlds,

they get to synthesize and create from rich sources of language, drama, and digital content – discovering, amplifying and extending their voices” (p.74). These studies, therefore, align with the theoretical literature and empirical research conducted in outside-of-the-classroom settings, which suggest that teaching new literacies in the English context can facilitate adolescents in developing new understandings about themselves and their own identities (Boyd, 2007; Chandler-Olcott & Mahar, 2003).

Notably, the two studies previously referenced in which technology was basically used as a substitute for a non-digital tool (Dierking, 2015; Malin, 2010) reported that students had neutral or mixed attitudes about the technology. Dierking (2015) who investigated the use of e-readers as compared to physical books found students enjoyed the convenience, novelty, and privacy the e-readers provide; however, some students admitted their overall attitude toward reading in general remained unchanged. Similarly, Malin (2010) found that her ICT use made the reading process more engaging for *only* the remedial readers in her class; she posits her approach was missing a key element in deepening the understanding of text – participation in discussion.

In viewing these studies collectively, they support the theory that the social and participatory aspects of new literacies are engaging to students (rather than the ICT itself), yet they also extend understanding regarding why new literacies can be engaging to students. Accordingly, presented below is a synthesised list of these reasons:

- *Collaboration*

New literacies involve people working together, both physically and virtually; students respond well to the opportunity to work with their classmates, other members of their school, or people across the world to construct something, and build new knowledge, together.

- *Real audience/presentation*

In addition to providing the opportunity for people to work together to construct or display knowledge, new literacies can provide a *real* audience for students to share their knowledge, which can encourage them to edit and refine their work.

- *Local, personal context*

Though ICT, on the one hand, can enable students on opposite sides of the world to collaborate, new literacies can also facilitate students in creating products that are personally relevant; they can learn English subject content and skills, as well as learn about themselves.

- *Student-led learning*

Integrating new literacies in English can enable students to take control of their learning, and discover new content and develop new skills themselves.

- *Authenticity*

A more authentic learning environment can be created if students use the new literacies with which they are familiar – in the ways in which or for the purposes in which they are used in the “real world.”

- *Reflection*

Finally, a reflection process, allowing students to consider their own learning, skill development and other relevant aspects, can be encouraged.

Notably, several of these elements correspond with those “affordances” – or the “latent possibilit[ies]” (Samekh, 2008) – of the tools of technology, which are often argued can be exploited to engage students in the learning process across many areas of education (Fullan & Langworthy, 2014; Samekh, 2008).

2.8.2.2 Development of Skills and English Content Knowledge

In the available empirical studies, some scholars have argued that through teaching new literacies in English, their students also developed conventional literacy skills, English subject content knowledge, and/or other relevant skills.

For example, McWilliams et al. (2013), who utilised the social media platforms to teach literature in their intervention, discretely administered a standards-orientated conventional literacy test before and after the unit. They observed an improvement in test results that was statistically significant, and argued that “this innovation was helping address school accountability goals” regarding English/literacy skill development (p. 242). Others expand these points, arguing that the new literacies helped encourage, facilitate or even *demand*

critical reading, writing and/or thinking. Hogue et al. (2004) argue new literacies force people to think differently: they immerse “students in a highly dynamic environment that demands critical reading and writing” (p. 73). Gainer and Lapp (2010) similarly concluded from their study that using new literacies in the English classroom has the “potential to expand students’ understandings about race, history, society, and their participation” (p. 60).

ICT/new literacies can be also utilised to help students in the writing process by facilitating revision and peer review/collaboration – putting the onus of the work onto the students and emphasising their role in achieving success (Borsheim et al., 2008). It has been argued that new literacies can enable “students to make their own choices and take ownership of their work, which leads to clear expression of student ‘voice’ in their writing” (Hogue et al., 2004, p. 72). Thus, using new literacies in the classroom can help students demonstrate in creative modes what they’ve learned about the subject content, the technology, and/or themselves.

In terms of new literacy skills themselves, scholars (e.g. Borsheim et al., 2008) have reported growth in the several areas, such as finding and engaging with digital content/information gathered online. Borsheim et al. (2008) argue that from their digitally-based research projects, their students learned “to be savvier users and organizers of online resources” (p. 88). Curwood and Cowell (2011) argue that in their learning intervention involving digital poetry, students did not just learn the “technical” skills, but they also were learning the participatory, collaborative “ethos stuff” of new literacies (p. 115); furthermore, they argue that their “iPoetry” project fostered creativity and led to new understandings of the “production and consumption of poetry” (p. 115).

In summary, and though these studies are limited in size and scope, their initial findings are encouraging, as they demonstrate that integrating/teaching new literacies, if done effectively, can help meet the aims of English education – to foster the growth of individual students by (1) enriching their understanding of culturally significant literary texts; and (2) developing the literacy skills students need to participate fully in society.

2.9 Conclusions: Research Problem Statements

2.9.1 Problem Statement 1: Empirical studies are limited

The theoretical literature and empirical research conducted in out-of-English classroom context settings have suggested the potential benefits of and need to teach new literacies in English; McWilliams et al. (2013) even argue that today integrating new literacies in English does not need much more justification. However, relatively few empirical studies related to the impact of using new literacies specifically in the English education context have been conducted. Many of the available studies were more focused on providing instructional examples for other teachers of how they can include technology and/or new literacies in their curriculums.

The initial available studies, when viewed collectively, support the idea that new literacies can engage students and can provide some insight into the engaging aspects of new literacies (section 2.8.2). However, they have been limited in size and scope (Jacobs, 2012); most studies involved only one-two teachers/researchers and their respective classes of students. Andrews' (2007) argument remains accurate today: "Generally speaking, there is an imbalance in studies...we have a small number of small-scale quantitative studies, and a number of small-scale, but not necessarily, in-depth qualitative studies. More breadth *and* more depth are necessary in research in the field" (p. 132).

These studies are further limited by the methods in which the data was collected, analysed, and/or reported. Data were gathered primarily through qualitative research methods – observation; interviews (1:1, small focus group); surveys; and/or analysis of student products. These methods can make it difficult to "quantifiably" measure any changes, and they can be time-consuming and costly (Cohen et al, 2011). [Part of this problem is related to the lack of data collection instruments, particularly quantitative tools, in the field of second-level English educational research (section 4.4).] Accordingly, most of these studies did not assess for *change* – or 'measure' the impact – on student engagement, confidence, attitude, motivation or other related area in English.

Furthermore, only a few of these studies (e.g. Malin, 2010) investigated any differences in impact based among different students. For example, most of the studies do not measure, compare or report differences in impact between students who already are highly engaged, motivated, successful, or confident in English against students who lack in those areas. These differences are important to consider and measure, as the “Matthew effect” would be an undesirable outcome (Dwyer, 2012; see section 2.6.2).

This lack of English-specific studies, or more in-depth studies, is significant, given the fact that there have already been several changes to curriculum and new requirements of English teachers worldwide. Further and more nuanced research seeking to understand the impact of new literacies pedagogies on students’ attitudes in English education is needed. As noted in the studies investigating teachers’ beliefs (section 2.7.2), this limited amount of empirical evidence can be a barrier to integrating new literacies in English, as some teachers need further understanding of the English pedagogical benefit to students. Deeper understanding of how and why new literacies – and approaches to teaching new literacies – impact different students’ engagement in English education would benefit teachers, as well as researchers, administrators, curriculum writers/policy-makers and other education stakeholders. Moreover, research tools for analysing impact related to these areas would aid this process.

2.9.2 Problem Statement 2: The lack of pedagogical models

As noted in the studies investigating teachers’ beliefs (section 2.7.2), even the teachers who believe in the importance and potential of integrating new literacies report that they are unsure of *how* to teach new literacies effectively – to engage students, meet curricular aims, and/or develop their students’ literacy skills (Curwood & Cowell, 2011; Hundley & Holbrook, 2013). Curwood and Cowell (2011) argue that professional development designed to demonstrate how to integrate technology has focused more “on digital tools and technology skills... consequently neglecting to address the ways in which technology relates to content and pedagogy” (p. 117).

Furthermore, English educators have been advised to “use caution when designing ‘practical’ applications of out-of-school literacies or new literacies, especially given the

potential to co-opt students' pleasure in such literacy practices" (Gainer & Lapp, 2010, p. 59), yet teachers have not been provided with research-based pedagogical strategies for integrating new literacies. The available studies related to teaching new literacies mainly share exemplar lessons, projects and activities which can be completed with particular technologies. The samples can be useful in terms of providing demonstration or inspiration to other teachers; however, they are often contextually specific and could be challenging to replicate in other settings.

Thus, in addition to these exemplars, research-based practical, pedagogical models and strategies for teaching new literacies in English are now needed: teachers are looking for practical "frameworks" (Unsworth, 2008). McWilliams et al. (2013) further elaborate, arguing the challenge with integrating new literacies in English "is in developing pedagogical approaches that can be personally engaging and socially meaningful while still meeting the accountability challenges of a testing system that continues to treat literacy as a set of discrete skills that can be measured without regard to context" (p. 238-9).

As acknowledged, some researchers, recognising this issue, have aimed to address it, grounding their work within a theoretical framework, such as TPACK (Mishra & Koehler, 2006). However, these approaches are limited: as Hutchinson and Woodward (2014) argue, "it is important to note that the TPACK framework is theoretical and is not a practical guide for helping teachers plan instruction with digital technology" (p. 457).

Accordingly, an investigation into the impact of a pedagogical model for teaching new literacies in the English education context – rather than a particular technology or new literacy practice – is needed. Jacobs (2012), who suggests that the collaborative ethos of new literacy practices engages students, argues that "an approach to teaching and learning which recognises this concept can perhaps give educators guidance on structuring teaching in ways which enable adolescents to meaningfully engage in the activities at hand" (p. 271). Thus, investigations into practical, pedagogical models and strategies for teaching new literacies in English are now needed.

2.10 Chapter Summary

This chapter first outlined the literature review process, describing the approach and the inclusion/exclusion criteria. It reviewed the major theories related to the key phenomena under investigation in this study – including English (second-level education), and literacy/new literacies – and articulated working definitions of those terms. It argued that as literacy, and the common understanding of literacy, has changed from the increased and widespread adoption of ICT, English education has already and continues to need to change accordingly. Next, it summarised two main, interwoven arguments commonly present in the theory, empirical research and education policy regarding teaching and learning new literacies in English: (1) the opportunity to use new literacies to engage students in the process of learning English curriculum content and skills, and (2) the need to teach student new literacy skills.

The chapter then progressed to synthesising and presenting the available relevant research in the field, beginning with an overview of the perspectives of English teachers. It demonstrated that teachers vary in their beliefs about the roles of technology/new literacies in English education, yet they generally are open to integrating new literacies for various reasons; however, they need more professional development and guidance in this regard. The chapter also presented the available empirical studies related to the use of new literacies/ICT in the English education context, demonstrating the types of interventions which have been completed and the common findings, which demonstrated increased student engagement and development of key English skills. It synthesised the findings from these studies into a list of aspects of new literacies that can help increase engagement. Finally, it argued that though these initial studies are useful for several reasons, there is still insufficient understanding of how using new literacies in English impacts students' attitudes and different students, which is partly due to the lack of data collection and analysis tools available. Finally, it suggested that the field of English education now needs pedagogical models for teaching and learning new literacies – and a more in-depth understanding of how such models impact *different* students and their attitudes toward English.

Chapter 3: Research Study Context

3.1 Chapter Overview

The literature review, Chapter 2, presented a broad, international view of contemporary English education, identifying opportunities, issues and challenges – related to the proliferation of ICT and its impact on literacy – that many countries are currently experiencing. This chapter presents details about the current educational system in Ireland, the country where the empirical research of this study was conducted.

This chapter first describes the overall structure of Irish secondary school curriculum, and more specifically second-level English, which are both undergoing systemic changes and facing some challenges related to curriculum content and design. Next, this chapter describes Bridge21 – a large-scale, design-based research project aiming to address several issues in the Irish education system through a variety of approaches, including a pedagogical model for 21C teaching and learning. It first provides an overview of the history of the programme and the development of the elements of its practical approach to teaching and learning. Then, it provides a description of the Bridge21 pragmatic activity model for designing learning experiences. It then argues that the social constructivist theoretical underpinnings of the model’s approach and its use of technology align with the “ethos” of new literacies (Knobel & Lankshear, 2014), those engaging elements of new literacies (section 2.8.2), and the principles of technology integration in classrooms, as put forth by the DES (2015a). Finally, it describes other studies, which demonstrated the effectiveness of the model in engaging students and building confidence in key 21C skills. It concludes by summarising the rationale for an investigation into the effectiveness of using the Bridge21 framework for teaching new literacies in the English context.

3.2 Secondary Education in Ireland: A System in Transition

3.2.1 Second-Level Structure

Second level education in Ireland begins when students finish primary school at around age 12. Generally, it is five-to-six years overall and divided into two parts: junior cycle (the first three years) and senior cycle (the second two-three years) (see Figure 3.1). Generally, at the

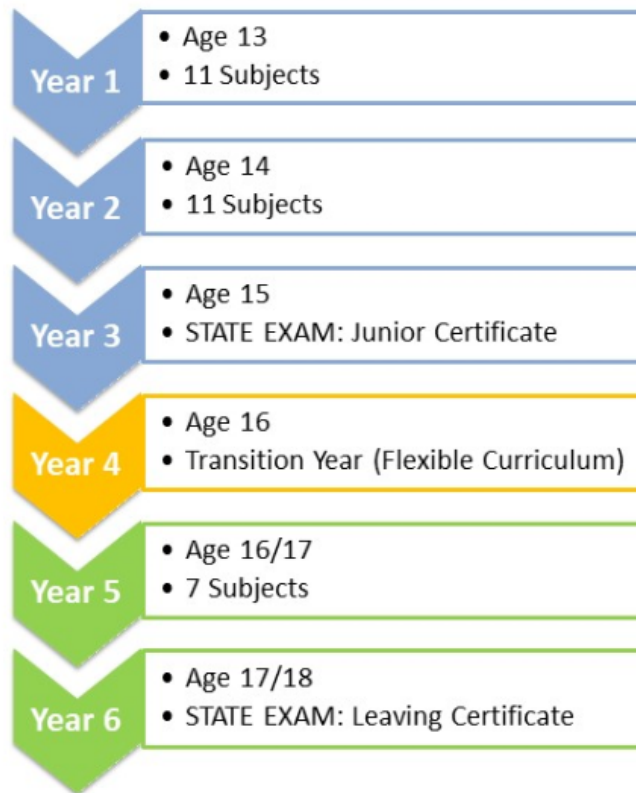
start of Senior Cycle (i.e the 4th year of second-level education), there is an optional Transition Year (TY) programme: “a one-year school programme in which the focus is on personal, social, vocational and educational development, providing opportunities for students to experience diverse educational inputs in a year that is free from formal examinations” (Department of Education and Science, 2004, p. 13). Students may choose to participate in the TY programme (of note, TY is compulsory in some schools, and in some schools, it is not offered). Alternatively, students can continue directly onto the formal two-year academic focused Senior Cycle programme, which is designed to prepare them for the Leaving Certificate examination.

At the end of each cycle, students are required to complete the Junior Certificate and the Senior Cycle (Leaving Certificate) standardised exams, respectively, testing them on their content knowledge of the core subjects in which they participate in school (e.g. English, maths, Irish, history, etc.). The Department of Education and Science (2004) explains, “The long established, traditional Leaving Certificate examination is the terminal examination of post-primary education... Syllabi are available in 34 subjects. All subjects are offered at two levels, ordinary and higher...Students following the established Leaving Certificate Programme are required to take at least five subjects, one of which must be Irish” (p. 13). There are typically three compulsory subjects of the Irish Leaving Certificate programme: English, mathematics, and Irish (though some students are exempt from Irish). These terminal exams are high-stakes in that they are the primary and usually sole determining factor for a student’s acceptance to a third level (university) programme (NCCA, 2017a). Notably, most third-level programmes require students to submit the results of their English examination.

There are two alternatives at the Senior Cycle level: (1) the Leaving Certificate Vocational Programme (LCVP), “which modifies the traditional Leaving Certificate Programme, with a concentration on technical subjects and some additional modules which have a vocational focus” and (2) The Leaving Certificate Applied (LCA) Programme, which “is a person-centred course involving a cross-curricular approach rather than a subject based structure...[that aims to prepare] participants for adult and working life through relevant learning experiences” (Department of Education and Science, 2004, p. 13). The majority of students,

however, enrol in the traditional Leaving Certificate programme (Department of Education and Science, 2004).

Figure 3.1: Irish Secondary School Structure (Tangney, Sullivan, Kearney, & O’Kelly, 2017)



3.2.2 ICT & 21C Skills in Irish Education

In response to the increase of ICT usage in everyday life and society-at-large and the evolving skills needed by 21st century students (see section 2.6.3), Irish educational leaders and policy makers (as others worldwide) are embracing the potential of ICT for educational purposes. In line with the theoretical literature presented in 2.6.2 (see Isaacs, 2011; NLG, 1996; Leu et al., 2004), policy initiatives were launched in Ireland as far back as 1998, in which it was argued that “knowledge and familiarity with new technologies will be an important dimension of employability in the information society” (Ireland’s Department of Education and Science, 1998). Following on, the Schools IT 2000 initiative was implemented, which “encompassed a number of policy initiatives intended to prepare children for a competitive, global, information economy” (Leu, 2004, p. 1580). This initiative included funding for ICT hardware, the establishment of Internet connection in schools, and teacher

training. In more recent years, the Department of Education and Skills (DES) has invested in additional “national ICT infrastructure, specifically in the rollout of 100/Mbit/sec broadband services to all post-primary schools” (DES, 2015, p. 7).

Since 1998, the DES has also implemented additional ICT-related policy initiatives and strategic programmes. The current programme is the *Digital Strategy for Schools 2015-2020*, which “provides a rationale and a Government action plan for integrating ICT into teaching, learning and assessment practices in schools over the next five years” (DES, 2015, p. 5). This document articulates the DES’s vision for ICT integration in Irish schools, which is to: “Realise the potential of digital technologies to enhance teaching, learning and assessment so that Ireland’s young people become engaged thinkers, active learners, knowledge constructors and global citizens to participate fully in society and the economy” (DES, 2015, p. 5). The DES (2015) aims to work with all members of educational communities – students, teachers, parents, administrators, unions, etc. – to achieve these goals and equip their students with the “key skills” and “ICT competencies” they need (p. 12).

The development of the *Digital Strategy for Schools 2015-2020* is happening within the context of greater reforms to second-level Irish education. Aiming to better meet the needs of today’s learners, the DES is currently transforming the Junior Cycle curriculum, moving to a more skills-based approach to teaching and learning and the use of school-based continuous and formative assessment (rather than a summative and externally-evaluated Junior Certificate examination) (DES, 2012, p. vi). The document outlining these changes, *A Framework for Junior Cycle*, first published in 2012 and updated in 2015, emphasises the importance of literacy and numeracy as key skills, arguing that: “Literacy and numeracy proficiency is fundamental to a student’s development right across the curriculum and across the other key skill areas noted below. Teachers of all subjects ... should therefore contribute to improving the ability of students to create and communicate meaning and to use numbers with confidence” (DES, 2012, p. 9). In addition to literacy and numeracy, the *Framework for Junior Cycle*, (DES, 2012, p. 9; DES, 2015b, p. 13) draws upon internationally recognised 21C skills frameworks (section 2.6.3) and identifies other key skills as:

- working with others;
- managing yourself;

- communicating;
- staying well;
- being creative; and
- managing information and thinking.

Each one of these skills has several “elements” and corresponding “learning outcomes” (DES, 2012, p. 9; DES, 2015b, p. 13); for every skill, there is an ICT (or digital, as its referred to in the document) component (see Figure 3.2). For example, managing information and thinking includes “using digital technology to access, manage and share content” and communicating includes “using digital technology to communicate” (DES, 2012, p. 10; DES, 2015b, p. 13). As such, a significant portion of the new Junior Cycle curriculum involves developing students’ understanding that technology both needs to be learned about and can enhance learning.

In addition to this shift to a more skills-focused approach, two new *short* courses focused specifically on developing students’ ICT skills have been added to the Junior Cycle: Digital Media Literacy and Coding (DES, 2015a, p. 23). These courses were developed by the National Council for Curriculum and Assessment (NCCA) – the organisation responsible for curriculum development and assessment. [The NCCA is a 25-member statutory Council (comprised of teachers, school managers, parents, representatives of the DES and State Examinations Commission, etc.) whose role is to advise the Minister for Education and Skills in “matters relating to the curriculum for early childhood education, primary and post-primary schools and the assessment procedures employed in schools and examinations on subjects which are part of the curriculum” (NCCA, 2007, p. 6-7).]

Though most of the major changes to the educational system are currently happening at the Junior Cycle level, the *Digital Strategy for Schools 2015-2020* does emphasise that “Senior Cycle should build on students’ previous experience of digital learning through the curriculum at primary level and in the Junior Cycle” (DES, 2015a, p. 23) and identifies Transition Year as an opportunity for students to engage more with ICT. The DES (2015a) also envisions ICT as being useful in helping students develop the key skills – information processing, being personally effective, communicating, critical and creative thinking and

working with others – that underpin their Senior Cycle learning experience. The DES (2015a) also states in this key document that the “strategy will support the development of new opportunities for learners to undertake in-depth study of ICT in the Senior Cycle” (p. 23). Accordingly, the NCCA is in the process of developing a specification for new Senior Cycle Leaving Certificate course: Computer Science, which aims to be available for the school year 2018-2019 (NCCA, 2017). Of note, however, there have not been any overall changes to the Leaving Certificate terminal examination structure or overall assessment procedure for Senior Cycle. As such, the “pencil and paper” terminal exam still determines students’ progression to third level programmes.

Figure 3.2: Junior Cycle Key Skills (DES, 2012, p. 10)

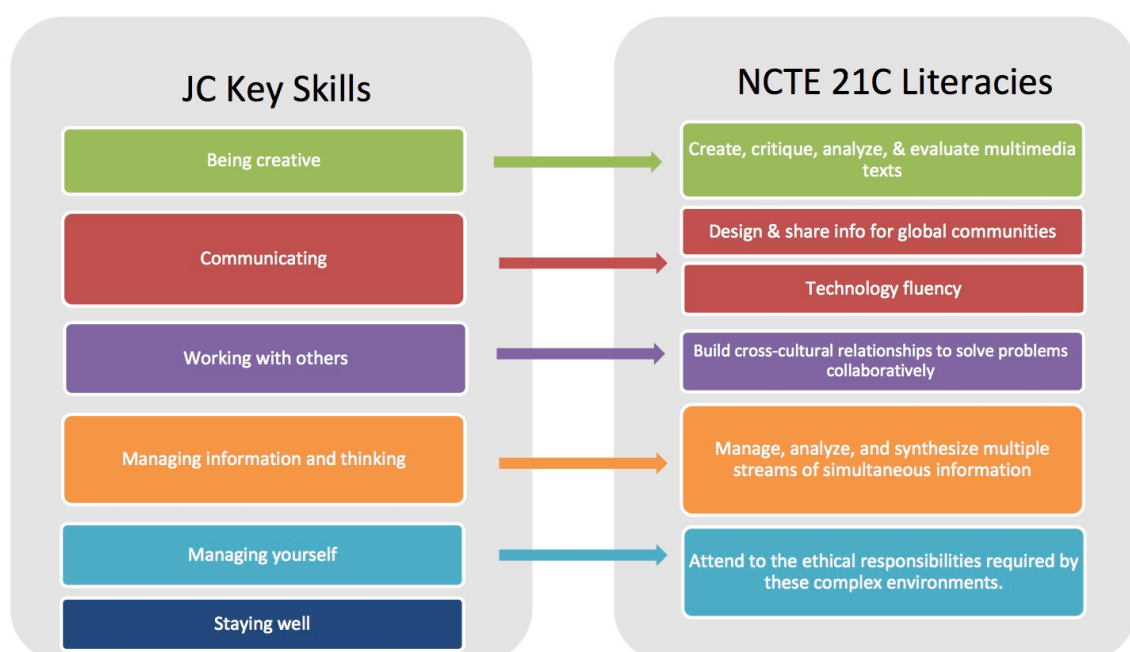
Managing myself	Staying well	Communicating
<ul style="list-style-type: none"> • Knowing myself • Making considered decisions • Setting and achieving personal goals • Being able to reflect on my own learning • Using digital technology to manage myself and my learning 	<ul style="list-style-type: none"> • Being healthy, physical and active • Being social • Being safe • Being spiritual • Being confident • Being positive about learning • Being responsible, safe and ethical in using digital technology 	<ul style="list-style-type: none"> • Listening and expressing myself • Performing and presenting • Discussing and debating • Using language • Using number • Using digital technology to communicate
Being creative	Working with others	Managing information and thinking
<ul style="list-style-type: none"> • Imagining • Exploring options and alternatives • Implementing ideas and taking action • Learning creatively • Stimulating creativity using digital technology 	<ul style="list-style-type: none"> • Developing good relationships and dealing with conflict • Co-operating • Respecting difference • Contributing to making the world a better place • Learning with others • Working with others through digital technology 	<ul style="list-style-type: none"> • Being curious • Gathering, recording, organising and evaluating information and data • Thinking creatively and critically • Reflecting on and evaluating my learning • Using digital technology to access, manage and share content

3.2.2.1 English Education in Ireland: An Evolving System

The influence of the research and theory related to new literacies/technology integration is evident in English education in Ireland. In 2011, the Department of Education and Skills (DES) published *The National Strategy to Improve Literacy and Numeracy among Children and Young People, 2011-2020*, which outlines the government’s beliefs about literacy (and numeracy), their intentions and goals for Irish youth in relation to literacy, and their strategy for attaining their goals. In this document, literacy is defined as “the capacity to read, understand and critically appreciate various forms of communication including spoken language, printed text, broadcast media, and digital media” (p. 8), reflecting the DES’ recognition of the changes to conceptions of literacy and the evolving literacy skills needed by today’s students (sections 2.4 and 2.5).

The Junior Cycle *Framework* emphasises literacy as a key skill in and of itself, yet it also embeds it within the other key skills, such as “using digital technology to communicate” (DES, 2012, p. 10). Moreover, the key skills, as outlined in *A Framework for Junior Cycle* (2012, 2015b) align with the list of new “21C literacies,” articulated by the NCTE (section 2.5). The author contends that these 21C literacies can be viewed as literacy-specific extensions of the key skills (Figure 3.3).

Figure 3.3: Author’s alignment of Key Skills (DES, 2012) and 21C Literacies (NCTE, 2013)



Thus, these overarching educational policy documents and curriculum learning objectives, reflect a contemporary conception of literacy (section 2.4), and it is evident that Irish educational leaders are embracing an approach to literacy development that encompasses an understanding and appreciation of new literacies.

Though the *Framework* emphasises that literacy (and numeracy) are the responsibility of all teachers, it does recognise the importance of English (and Irish and Maths) in developing those skills; accordingly, it requires that students have 240 engagement hours, and recommends daily classes, in those three subjects over the three years of junior cycle – as compared to 200 hours of the other subjects (DES, 2015a, p. 17). Moreover, the new Junior Cycle English curriculum was the first specification to be distributed in 2014, and it includes learning outcomes which encompass new literacy skills. These include, for example: “Write competently in a range of text forms, for example letter, report, multi-modal text, review, blog, using appropriate vocabulary, tone and a variety of styles to achieve a chosen purpose for different audiences” (NCCA, 2014, p. 14) and to “Use a wide range of reading comprehension strategies appropriate to texts, including digital texts: to retrieve information; to link to previous knowledge, follow a process or argument, summarise, link main ideas; to monitor their own understanding; to question, analyse, synthesise and evaluate” (NCCA, 2014, p. 13).

Similar to Junior Cycle, English has a primary and significant role at Senior Cycle (see 3.2.2), as it is a compulsory subject, though there are not currently major changes underway to the Leaving Certificate curriculum. The English Leaving Certificate (LC) programme, as most other second-level English education programmes (section 2.3), is designed to develop students’ literacy skills and knowledge of significant cultural literature (NCCA, 2017a, p.5-6). The LC “course is organised around two general domains: (i) comprehending (ii) composing...[and] within these two domains the students will be actively and creatively engaged in using language” (NCCA, 2017a, p. 4). Furthermore, “these two domains are to be largely encountered in the context of specific areas of language use and through the study of certain texts and resources” (NCCA, 2017a, p. 4).

For the purpose of the LC, language is classified under five general headings, or the “five styles of language”: aesthetic, argument, information, narrative, and persuasion. On the Leaving Certificate examination, students are assessed on their abilities to comprehend these forms in varied contexts and compose original pieces using these styles. The exam also requires students to write essays about works of literature which they studied over the course of the senior cycle programme, including canonical Western literature such as Shakespearean plays, Charles Dickens’ novels, and W.B. Yeats’ poetry (NCCA, 2017a). The LC exam, however, is completed on paper and individually, and therefore does not require the use of new literacies.

3.2.3 Barriers to change

Despite these changes in philosophy and prescribed English curriculum, there remain several barriers to integrating new literacies into English classrooms in Ireland. Consistent with the research conducted at the international level (section 2.7.2), teachers in Ireland (across subjects) report that barriers to integrating 21C skills and technologies in the classroom are: lack of training; level of discomfort with using new technologies; unwillingness to release teacher-centred control of the classroom; and shortage of funding for and/or access to technology in schools (Conneely, Lawlor, & Tangney, 2013; Donnelly, McGarr & O'Reilly, 2011; Egan et al., 2013; McGarr, 2009). Moreover, educators struggle to envision how teaching these skills can be included in tight curricula, which are typically assessed with high-stakes standardised exams that evaluate content knowledge rather than skills (Fullan & Langworthy, 2014). Thus, while teachers may believe in the “real-life” value of teaching new literacy skills or the potential of integrating new literacy practices in their teaching, they do not believe there is space in an exam-focused curriculum to teach them.

The Irish Department of Education and Skills (DES) also highlights the internationally recognised “challenge of meaningful ICT integration...and that schools need guidance and support to achieve it. All too often schools are not clear as to what ICT integration looks like and therefore are unsure how they can achieve it” (DES, 2015, p. 6). According to the *2013 ICT in Schools Census Report*, ICT has replaced older technologies, “such as books or whiteboards,” but that the roles of “the teacher and the learner remains unchanged” (DES, 2015, p. 11). This lack of understanding of how to meaningfully integrate technology aligns

with the findings regarding English teachers' needs for professional development in strategic pedagogies that support teaching and learning new literacies in English (section 2.7.2). As the DES (2015a) argues, "There is a need to ensure that ALL teachers are equipped with the knowledge, skills and confidence to integrate ICT into their practice" (p. 6). Moreover, the Economic and Social Research Institute (ESRI) of Ireland highlights in their report *Teaching and Learning in Second-Level Schools at the Advent of High-Speed Broadband*, "effective leadership is crucial to the smooth and effective integration of ICT within schools" (McCoy, Lyons, Coyne, & Darmod, 2016, p. 140); accordingly, school leaders need support in providing their teachers with the guidance they need to integrate effectively new literacies/technology.

Another barrier to ICT-integration in schools in Ireland has been a political one, as some teachers' unions have refused to accept the *Framework for Junior Cycle* (DES, 2012; DES, 2015b), which as previously explained (section 3.2.2) focuses more on a skills-based, inclusive of many digitally-based skills, approach to teaching and learning. The strongest opponents to the changes proposed in the new Junior Cycle insisted that their "opposition to reform" was based on "protecting education standards" (O'Brien, 2017).

Given these various barriers, new literacies have not been frequently taught and utilised in formal educational settings, and there continues to be a privileging of Victorian-era model of teacher-centred education, printed texts and conventional literacy in English education in Ireland (Conneely et al., 2013; Donnelly, McGarr & O'Reilly, 2011; Egan et al., 2013; McGarr & O'Brien, 2007). As such, many students in Ireland today – including those involved in this study – are not familiar with using new literacies/technology in general in the English classroom context (section 6.2.2).

3.3 The Bridge21 Model of 21C Teaching and Learning

3.3.1 Overview of the Bridge21 Model

Within the context of a transforming contemporary Irish education, the Bridge21 research project is currently working on multiple levels to transform the education system, aiming to equip students (and their teachers) with the 21C skills they need to thrive in the 21st century (Lawlor et al., 2018).

The Bridge21 model grew out of a social outreach programme, which aimed to provide additional, alternative educational experiences to disadvantaged students in Ireland (Lawlor et al., 2018). Since it was founded in 2007 at Trinity College Dublin, the organisation has partnered with schools and other educational institutions to transform and modernise education in Ireland. Today, the name Bridge21 signifies three things: (1) a particular model of team-based, technology-mediated, 21st century teaching and learning; (2) the learning laboratory on Trinity College Dublin's campus, which is designed to support the pedagogical model and is the venue for student and teacher workshops; and (3) an overarching design-based research project aiming to provide a suitable framework for integrating technology and ultimately transform teaching and learning in Irish secondary school classrooms (Tangney et al., 2017). The ethos at all levels of Bridge21 is social constructivist (Vygotsky, 1980), seeking to facilitate the personal growth of students and promoting a collaborative learning environment where students learn with and from one another (Bridge21, 2011). An underlying principle in a social constructivist model is that knowledge is constructed (rather than transmitted) and that learners are responsible for their own learning (Vygotsky, 1980); as such, they should be guided in the learning process, but allowed to make their own connections and build understandings of complex concepts together. Also integral to the Bridge21 approach (Lawlor, 2017) is also the concept of "hard fun," as purported by Papert (1998), who argues that learning is "fun because it's hard...not in spite of it" (p. 88). He continues, "learning is essentially hard; it happens best when one is deeply engaged in hard and challenging activities...[and] the fact is that kids prefer things that are hard, as long as they are also interesting" (Papert, 1998, p. 88). In Bridge21, the combination of challenging but interesting, attainable projects often leads to fun.

The Bridge21 pedagogical model for 21C teaching and learning includes elements such as project-based learning, a changed role for the teacher, and teamwork, which are commonly cited key aspects of 21C teaching and learning approaches (Lawlor et al., 2018). However, their combination and systematic application, particularly in formal education, is distinctive (Lawlor, Marshall & Tangney, 2016). Lawlor et al. (2016, p. 61-62) articulate the key elements of the Bridge21 model:

1. **Teamwork:** building teamwork and team dynamic development

2. **Technology-mediated learning:** promoting collaborative working with technology and utilising technology as a resource for the team
3. **Learning Space:** A team-friendly learning space designed to provide the team with a dedicated area to promote and encourage the integrity of the team
4. **Project-based learning:** challenges are designed to test and develop the team
5. **Reflection:** Facilitating team and individual reflection to help understanding, aid meta-cognition and cement learning
6. **Mastery goal orientation:** promoting an assimilation of skills rather than a normative performance-based approach
7. **Social learning protocols:** providing a social and relaxed context for the learning, underlining trust, respect and personal responsibility
8. **Facilitator/mentor:** the role of the adult is characterised as supporting, guiding and co-learning

Figure 3.4 graphically represents the unique blending of the 8 elements of the Bridge21 pedagogical model, designed to create an environment in which the potential of technology and peer learning can be exploited to enhance learning (Lawlor et al., 2016). Table 3.1 provides more detailed description of each element, as presented in Lawlor et al. (2018).

Figure 3.4: The Bridge21 Model Elements (Lawlor et al., 2018, p.6)

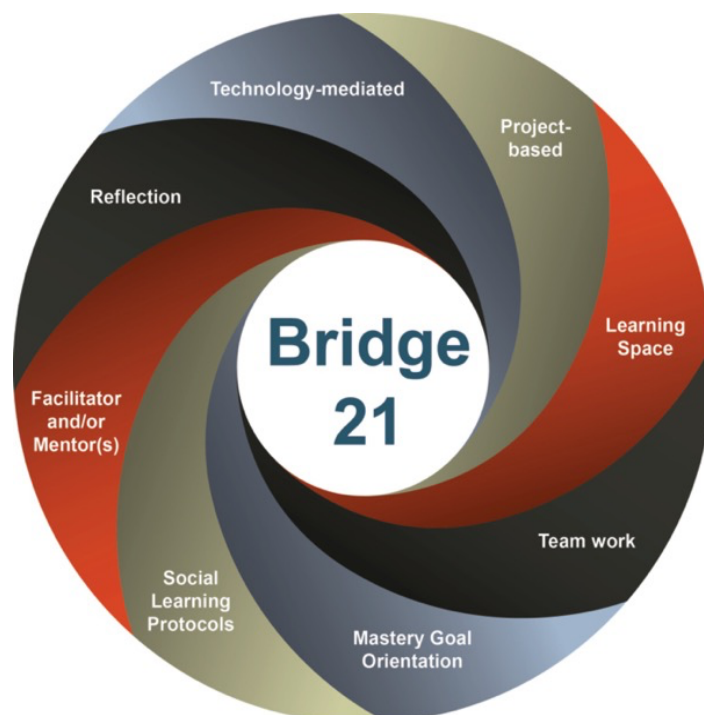


Table 3.1: Elements of the Bridge21 Model (Lawlor et al., 2018, p. 7)

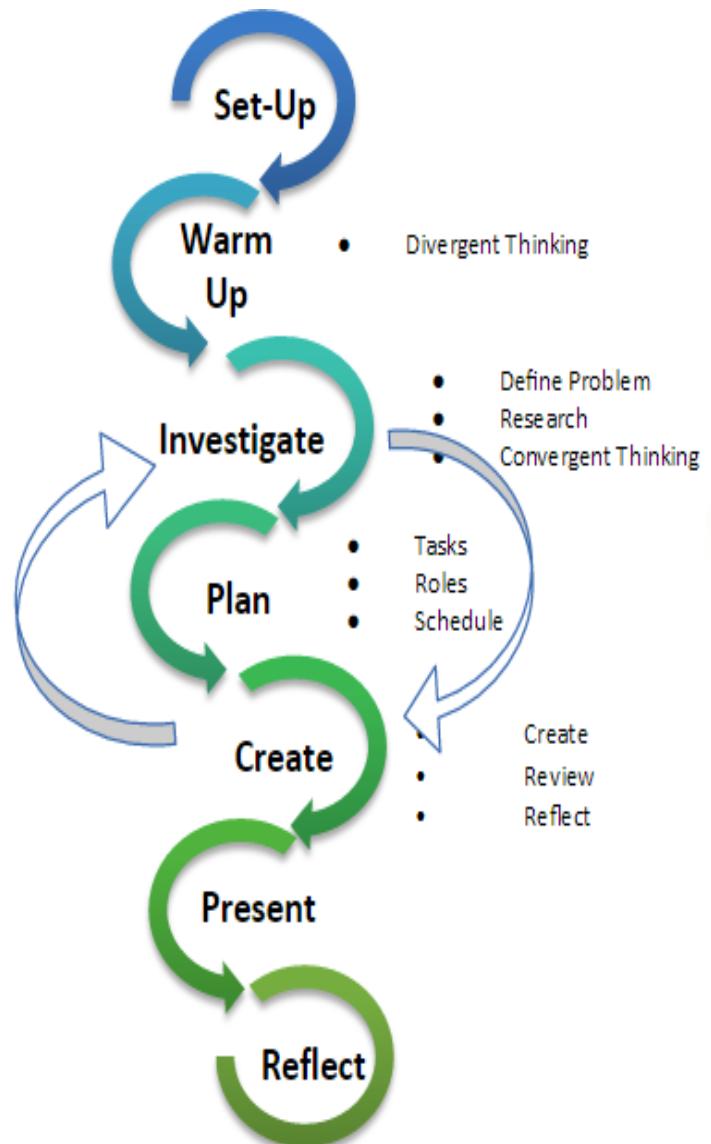
Bridge21 Model Element	Component
Building Teamwork	<ul style="list-style-type: none"> • Structured teams • Team stability • Team development • Team tasks • Team roles • Team leaders
Technology-mediated collaboration	<ul style="list-style-type: none"> • Technology as a tool • Technology and resource sharing in the team
Learning Space	<ul style="list-style-type: none"> • Designed to support the teamwork • Team ownership of the space • Flexible space • Presentation area • Stimulating environment
Project-based learning	<ul style="list-style-type: none"> • Scaffolded • Team oriented • Problem-based learning • SMARTER (Specific, Measurable, Attainable, Relevant, Time-bound, Engaging, Recordable)
Reflection	<ul style="list-style-type: none"> • Team plan, do, review • Individual time
Mastery Goal Orientation	<ul style="list-style-type: none"> • Breaking the performance-ability connection • Valuing effort in the learning • Encourage team and peer affirmation
Social Learning Protocols	<ul style="list-style-type: none"> • Social Informality • Student led approach
Facilitator and/or mentors	<ul style="list-style-type: none"> • Adult acts as a guide and support • Adult is a co-learner

Notably, the Bridge21 “learning model speaks directly to the new and more flexible approach to learning, as envisioned by the NCCA for the reformed Junior Cycle...present[ing] a shift in focus from a narrow view of teaching individual subjects, to a wider goal of teaching key competencies and skills through engagement with curriculum material” (Conneely, et al., 2012, p. 7). Thus, Bridge21 supports the vision regarding key skills put forth by Irish educational leadership in the *Framework for Junior Cycle* and is seeking to practically realise these aims (Conneely, Girvan & Tangney, 2012; DES, 2012, 2015b).

3.3.2 The Practical Bridge21 Activity Model

To help move the Bridge21 pedagogy from a theoretical model for teaching and learning to a practical approach that could be implemented in the classroom, a pragmatic activity model has also been developed that teachers can use for their implementing 21C learning experiences. The activity model design template (Figure 3.5), which was inspired by the design thinking movement that began in the “d.school ” (design) in Stanford University, has been refined and codified by Byrne, Fisher & Tangney (2015).

Figure 3.5: Bridge21 Practical Activity Model (Byrne, Fisher & Tangney (2015))



The activity model involves seven phases (Lawlor, 2017, p. 102-104):

1. **Set-up:** introductions, ice-breaker activities, team-formation
2. **Warm-up:** brainstorming/ divergent thinking activities
3. **Investigate:** involves research/attempts to address a problem within a group, before being shared and discussed in a plenary session
4. **Plan:** the team is presented with a project to complete and begin devising a strategy for completing the project (assigning roles, allocating time, etc.)
5. **Create:** teams work to complete the project, seeking advice or help from the facilitator or mentor(s) but maintaining control and ownership of the task.

6. **Present:** all members of the team are involved in presenting their work to the whole group, explaining how each individual member contributed.
7. **Reflect:** with the use of structured, written questionnaires, students reflect in teams and as individuals on their learning of skills/content.

It is understood that within this activity model, there is usually an iterative process among the middle phases (investigate-plan-create), as the completion of projects often involves re-organising and planning once the create/implement phase is underway (see Figure 3.5).

A typical Bridge21 project, for example, could involve students ultimately creating a 2-3 minute promotional video for a local business (Conneely et al., 2012). Walking through the steps of the activity model, and using elements of the Bridge21 approach, students first are put in teams and participate in ice-breaker and team-building activities. Students select a team name and leader. Then, they are asked to choose a business in their local area, and begin investigation – conducting background research using the internet and any other relevant resources (e.g. they can call the business for more information). After their investigation, they move into the planning phase, deciding how they will complete the project. They storyboard, write a script, etc. (If possible, they can visit the business, make calls, or conduct interviews). Then they create – they capture video footage, photographs, audio clips, and any other materials. Using software, such as Audacity and Windows MovieMaker, they create and edit their promotional videos. Then, they present their projects to the whole group, explaining how they individually contributed. Finally, teams reflect on their successes, challenges, and learning (Conneely et al., 2012).

3.3.3 The Alignment of the Bridge21 and English education theoretical underpinnings

The philosophical underpinnings of the Bridge21 approach not only support the shift in some levels of Irish education to focus on students' developing 21st century key skills, but also align with an ideological socio-cultural perspective of literacy (section 2.4) commonly underpinning contemporary English education. In the Bridge21 model "technology is both integral and ancillary...[the use of ICT] is not in itself the object of the learning but their use is central to the model" (Lawlor et al., 2018, p. 6). The Bridge21 approach recognises that the potential of technology to engage students is only as powerful as the pedagogy in which

the tools are used (Lawlor et al., 2018); similarly, scholars suggest that the social, collaborative aspects of new literacies – rather than the technology itself – are what engage adolescents in the learning process (Barton & Hamilton, 2000; Jacobs, 2012). Moreover, Bridge21 purports that young people “should be trusted to learn from each other” and that they “benefit from the experience of working in mixed ability teams” (Bridge21).

The available empirical studies in English education have supported and extended these perspectives, and the author synthesised their findings into a summary of aspects of new literacies that can help make English more engaging for students (section 2.8). These qualities – including collaboration, presentation for a real audience, local and personal context, student-led learning, and authenticity, and reflection – directly align with the components of the Bridge21 approach and activity model. For example, a particular model of teamwork is central to Bridge21, and other elements such as project-based learning, teacher-as-facilitator and team reflection, revolve around the concept that students learn with and from one another. The teams, which are recommended to be comprised of students with mixed abilities and mixed genders, construct knowledge and learn together: they take accountability of their progress together (Lawlor et al., 2016). These elements complement those collaborative, participatory knowledge-sharing and building aspects of the new literacies, which can make new literacies engaging (Knobel & Lankshear, 2014).

In the Bridge21 model, the teacher also moves into an orchestrating role, assisting student teams in completing their projects and constructing their own knowledge, rather than delivering the content through a didactic, lecture-style approach (Lawlor et al, 2018). Similarly, it is recommended that in teaching new literacies, teachers act as “designers of learning processes and environments, not as bosses dictating what those in their charge should think and do” (NLG, 1996, p. 73); accordingly, the role of the English educator is to create learning processes and experiences to enable students to become active designers of their own social futures. Within the Bridge21 model, which utilises project-based learning, teams are required to investigate, plan and create a product together. Through this process, there is opportunity for students to participate in several new literacies, such as creating, analysing and evaluating multimedia texts, or managing and synthesise multiple streams of information (section 2.5).

Furthermore, the Bridge21 approach suggests that teams present their projects to an audience – and that all members of the team participate in the presentation (Lawlor et al, 2018). This element complements a theme arising from the English education research about the important role that an authentic audience can play in engaging/motivating students (Borsheim et al., 2008; Shamburg & Craighead, 2009). Finally, reflection is the last stage of the Bridge21 activity model, as well as an element of the approach. Several researchers also noted the importance of reflection, as completed with new literacies, in their learning interventions in English (Dockter et al., 2010; Gainer and Lapp, 2010).

3.3.4 Impact of Bridge21

The Bridge21 programme has contributed to the theoretical space of 21st century teaching and learning, but it also has been operating on a practical level since 2007: it has worked with more than 13,000 students in the Bridge21 learning laboratory. The flagship programme of Bridge21 is its “Core TY Programme” for Transition Year (ages 15-17) students, in which students from a mix of several schools come into Bridge21 for a week (4 days, 5 hours/day) of project and team-based learning with technology, which focuses on the development of key 21C skills (see sections 2.6.3 and 3.2.2).

The data collected throughout the development of the programme has indicated that participation in Bridge21 learning experiences “had a direct positive impact on the students’ perceptions around their learning and on their intrinsic motivation to learn” (Lawlor et al., 2016, p 187). Furthermore, the results “highlight the potential of a technology-mediated team-based model of learning to support the development of 21st century skills (such as collaboration, communication, problem-solving and critical thinking)” (Conneely et al., 2012, p. 7). In an analysis of 286 students who participated in the Core TY Programme (over a 2 year period), students reported statistically significant increases in their confidence in key skills, including: communication, collaboration, critical thinking, creativity, using technology for learning, and self-direction (Tangney et al., 2017).

Given these positive results, the Bridge21 programme has continued and expanded, shifting focus to also “adapting the learning model for use in mainstream classrooms to deliver core curriculum content” (Conneely et al., 2012, p. 8). Some researchers have begun

investigating the adaptation of using the model for teaching specific subject curriculum (Conneely et al., 2013), such as physics (Wickham, Girvan & Tangney, 2016), maths (Bray & Tangney, 2016), and language learning (Bauer, Devitt & Tangney, 2015). Bray & Tangney (2016), who adapted the Bridge21 model for maths education, found statistically significant increases in students' engagement and confidence in maths from their pre- to post-intervention surveys.

In parallel to this research and to meet the aim of using the Bridge21 approach in the formal school contexts, Bridge21 is also creating and conducting continuous professional development (CPD) opportunities with teachers (Byrne et al., 2015; Conneely, Girvan, Lawlor & Tangney, 2015). More than 1,500 teachers have been involved in this CPD, which has included introduction to Bridge21 workshops in the Bridge21 lab, in-school "lesson study" CPD cycles, and a Postgraduate Certificate in 21st Teaching and Learning – a venture developed conjointly between the Schools of Education and Computer Science & Statistics at Trinity College Dublin (the Bridge21 approach serves as the core methodology used throughout the course) (Tangney et al., 2017).

Therefore, to reiterate, Bridge21 is a large-scale programme, operating on multiple levels, which to-date has reached thousands of students and teachers in Ireland, creating transformative teaching and learning experiences.

3.4 Summary: Rationale for Investigation and Research Questions

As the literature review (chapter 2) highlighted, there is still insufficient understanding, at the international level, of how and why teaching new literacies impacts students' engagement in English. Moreover, the field of English education now needs practical pedagogical models for integrating new literacies. As this chapter, *Research Context*, has further explained, these issues are also present in the current Irish education system, which is undergoing major reform, particularly at the Junior Cycle. Teachers across disciplines are seeking more understanding of how to effectively implement a 21C teaching and learning pedagogy in their classrooms, and teach their students key 21C skills. Bridge21 is one programme working to address these needs and transform the education system.

Given the alignment of several key aspects of the Bridge21 philosophy with the ethos of new literacies, Bridge21's practical activity model for implementing 21C learning experiences, and the prior success of Bridge21 as a model for 21C teaching and learning in both an out-of-school context and within school subjects in Ireland, it was hypothesised that it could be a suitable framework for facilitating the teaching of new literacies in English. The elements of the pedagogical approach, in combination with the activity model, could help educators realise the potential of new literacies to engage students and to build their confidence in other learning objectives of English – skills and content. Thus, an investigation into the impact of the adaption this model on students' engagement and confidence would first be necessary. Accordingly, the following research questions were developed:

RQ1: How and why does the Bridge21 approach to teaching new literacies impact students' engagement and confidence in English?

RQ2: How and why does the Bridge21 approach to teaching new literacies impact students' attitudes toward learning English with technology?

RQ3: How do teachers adapt or struggle to adapt the Bridge21 approach to teaching new literacies in their classrooms and what do they believe about the approach?

Through investigating these questions, this researcher aimed to determine the 'effectiveness' of the Bridge21 model for teaching new literacies. If successful, this adaptation of Bridge21 model for teaching new literacies in the English education context could provide teachers with a research-based practical pedagogical model for using new literacies in the classroom, and the aims of the research would be addressed:

RA1: Develop a deeper understanding of how and why new literacies – and strategies for teaching new literacies in English – impact students' engagement in English (PS1)

RA2: Create and validate a reliable data collection tool that could be utilised to quantitatively measure the impact of the learning interventions of this research and other similar studies (PS1)

RA3: Develop a research-based, pedagogical approach for effectively teaching new literacies in the second-level English education context (PS2)

RA4: Create activities, lesson plans and materials for teaching new literacies effectively in the English classroom, share these resources with other educators, and investigate teachers' experiences using them in the classroom (PS2)

Chapter 4: Methodological Approach

4.1 Chapter Overview

The purpose of this chapter is to provide the explanation and rationale for the methodological approach that was taken to answer the research questions. The chapter begins by clarifying the theoretical understandings of the key phenomena that were under investigation and measured (students' attitudes, i.e. confidence and engagement), explaining why these particular concepts were measured. Next, it describes how and why a combination of case study methodology and action research methodology was chosen to investigate the research questions, providing definitions and a rationale. Following on, the chapter describes and provides a rationale for the mixed methods approach utilised in collecting, analysing and presenting the quantitative and qualitative data. This chapter also explains how the ethical considerations of the study were addressed. Finally, it expresses the limitations of the chosen methodological approach.

4.2 Key Concepts Measured: Student Attitudes, Confidence and Engagement

4.2.1 Attitudes, an Overview

As explained in previous chapters, this research is concerned with two specific facets of students' attitudes: engagement and confidence, and as they exist in the English educational context. As it's often argued (section 2.6), the use of new literacies has the potential to engage students in English and it's necessary to build students' new literacy skills. Accordingly, a pedagogy/model for teaching new literacies that improves students' engagement and confidence can be considered effective. Moreover, a deeper understanding of how and why these attitudes are influenced would be beneficial to the education community.

The foundations of the conceptual understanding of attitudes within educational research generally come from the field of psychology: according to Myers (2013), attitudes can be defined as, "favorable or unfavorable evaluative reactions toward something—often rooted in beliefs and exhibited in feelings and inclinations to act" (p. 120). Attitudes influence reactions and are thought to have multiple dimensions: "Affect (feeling), Behavior tendency,

and Cognition (thoughts)” (Myers, 2013, p. 120). The term “attitude” is broad in scope, inclusive of various reactions and the ways they are exhibited. Because the term frequently is conflated with words such as engagement, confidence, beliefs, and motivation, this section clarifies their usage in this thesis.

While acknowledging conceptual differences among these constructs exist – the word “attitude” will be utilised at times (e.g., in the title of the thesis) as an “umbrella term” for ease of language and with the intention of capturing the nuances of these concepts. Accordingly, “attitudes” signifies students’ general perceptions/beliefs of their feelings, levels of self-efficacy/confidence, and general outlook toward something. Insofar as confidence is a self-perceived, evaluative measure of one’s competence and ability to complete the task/goal, and engagement (both behavioural and emotional) are self-perceived evaluations of action and interest, the researcher contends they can be considered “attitudes.”

Moreover, *attitudes* highlights the important relationship among the constructs, as conceptualised in the literature influential in this study: emotion and confidence influence behaviour, which influences achievement – and achievement influences enjoyment and confidence and in turn behaviour (e.g., Bandura, 1977; MacLellan, 2014). Of course, attitudes do not *always* predict behaviour, for various influences are involved in informing one’s behaviour (Myers, 2013).

4.2.2 Student Engagement, Conceptualised

The construct of engagement is multi-faceted and can include: feelings about school/classes/teachers, participation in extracurricular activities, and class attendance. For the purposes of this study, engagement is conceptualised as a psychological process inclusive of students’ interest, participation, attention, and effort in task completion, as it occurs within the English classroom/learning space (Finn, Pannozzo, & Voelkl, 1995; Marks, 2000; Newmann, Wehlage, & Lamborn, 1992). Two specific aspects of students’ engagement, behavioural and emotional, were examined in this research because of their cyclical relationship with each other, confidence and achievement (section 4.2.4 explains this concept in more detail).

This Ph.D. research utilises the definitions of behavioural and emotional engagement as conceptualised in Fredricks, Blumenfeld, and Paris' (2004) comprehensive review of the construct of school engagement. Prominent literacy researchers, such as Guthrie and Wigfield (2000), also use these definitions in their studies; moreover, the creators of the Maths and Technology Attitudes Scale (Pierce et al., 2007), upon which the primary data collection instrument of this research, the ETAS, was modelled (see section 4.4), also used Fredricks et al.'s (2004) conceptualisations of behavioural and emotional engagement in the development of their instrument.

Behavioural engagement typically draws on the idea of participation—from positive conduct in school culture and regular attendance, to appropriate behaviour in the classroom. Behavioural engagement relates to participation and involvement in the learning activity and classroom environment – including, “effort, persistence, concentration, attention, asking questions, and contributing to class discussion” (Fredricks et al., 2004, p. 62). The researcher acknowledges the importance of other types of behavioural engagement, such as participation in extracurricular activities and following the rules of the school; however, this research was concerned with the behavioural engagement of students in the school subject English, as it exists in the classroom/space where English is being studied.

Emotional engagement is also a broad construct inclusive of students' feelings about their school, peers, and teachers. In this thesis, emotional engagement encompasses affective reactions to classroom and academic activities, “including interest, boredom, happiness, sadness, and anxiety” (Fredricks et al., 2004, p. 63). A “high” state of emotional engagement could be likened to Csikszentmihalyi 's (1988) well-known concept of flow, which is a state of total involvement, where people are so engrossed in an activity that lose all sense of time and space. Of interest were students' emotional responses or feelings about the subject of English, inclusive of the skills, content, and activities as they exist in the classroom/space where English is studied.

Overlap between these two facets of engagement (behavioural and emotional) exist, yet they are distinct. For example, a student may actively participate in class by contributing to class discussion, asking questions, or assisting peers in collaborative work, but may not like

English. Alternatively, a student may enjoy studying English — reading the literature or writing — but not participate (e.g. appear distracted or not contribute to class discussion) or participate negatively (e.g. exhibit inappropriate behaviour). Thus, as Fredricks et al. (2004) argue, examining these facets of engagement jointly may provide a deeper understanding of the participants and the study than looking at engagement as a singular construct.

Of note, the construct of motivation has been conceptualised similarly to attitudes in some theoretical literature. While it's beyond the scope of this thesis to provide a comprehensive review of motivation theory, the researcher acknowledges the overlapping conceptual ideas among facets of engagement and motivation, in particular as articulated in one highly influential theory in the field of education: Self-Determination Theory (SDT) (Deci and Ryan, 1985). As Ryan and Deci (2000) explain, in SDT they “distinguish between different types of motivation based on the different reasons or goals that give rise to an action. The most basic distinction is between intrinsic motivation, which refers to doing something because it is inherently interesting or enjoyable, and extrinsic motivation, which refers to doing something because it leads to a separable outcome” (p. 55). They argue that intrinsic motivation can “result in high quality learning and creativity” and, as such, it's important to “detail the factors and forces that engender versus undermine it” (p. 55). Extrinsic motivation, on the other hand, has many types and sources, which can either be “impoverished” or “active [and] agentic;” extrinsically motivated tasks can be performed with “resentment, resistance, and disinterest or, alternatively, with an attitude of willingness that reflects an inner acceptance of the value or utility of the task” (Ryan and Deci, 2000, p. 55).

Motivation, like attitudes, is an overarching, multifaceted construct. Accordingly, the researcher chose to examine the more specific, identifiable, and measurable attitudinal constructs of emotional engagement, behavioural engagement, and confidence, as they exist in relation to the English subject. These three attitudinal constructs were chosen for examination because they additionally have a significant cyclical relationship, which is explicated in the section 4.2.4.

4.2.3 Student Confidence, Conceptualised

“Confidence” is often used as though it is a clear, well-defined concept; however, it’s quite malleable and diverse in its meanings. Maclellan (2014), who conducted a literature review of the construct of confidence, argues that generally in education-related literature, self-confidence is “a dimension of every individual’s self-representation which will play out in a range of performance indicators and is associated with the individual’s impression of his/her competence in a specific domain, context or situation” (p. 62).

Here, the word “confidence” signifies one’s perception of one’s capabilities and ability to achieve (which includes overcoming challenges) in a particular area. This understanding is strongly influenced by Bandura’s (1977) theory of self-efficacy for several reasons: its alignment with the author’s personal beliefs about the subjectivist nature of and sources that affect confidence; its alignment with the theoretical literature underpinning this research (section 2.4); its concern with the role of confidence in influencing engagement; and its influence on the field of education and data collection materials utilised in the case studies. In literacy education alone, several scholars have created surveys assessing students’ reading or writing self-confidence, grounding the conception of self-efficacy in Bandura’s work (Boakye, 2015; Bottomley, Henk & Melnick, 1998).

Bandura approaches conceptualising self-efficacy from within a social learning theory perspective — one that suggests learning is a cognitive process that occurs in social contexts and can happen through direct observation of others’ behaviours and the consequences of their actions, as well as direct instruction (Bandura & Walters, 1977). Bandura (1977) theorises self-efficacy as “arising from diverse sources of information conveyed by direct and mediated experience” (p. 203). In his view, “psychological procedures... serve as a means of creating and strengthening expectations of personal efficacy” (Bandura, 1977, p. 193). There are “four principal sources of information” that contribute to one’s expectations of “personal efficacy” (Bandura, 1977, p. 191) (see Table 4.1).

Table 4.1: Bandura’s (1977) Principal Sources that Influence Self-Efficacy

Source of information	Description & Effects
Performance Accomplishments	An especially influential source based on personal mastery experiences: one’s previous perceived successes and failures
Vicarious Experience	Observing others perform tasks (and succeed/fail), and comparing oneself with those people
Verbal Persuasion	Both positive and negative verbal communication from others (i.e., peers, teachers, supervisors, etc.)
Physiological States	Awareness and knowledge of one’s emotional arousal or reaction (i.e., stress or anxiety) to certain inputs

These four inputs work in some combination to form one’s self-efficacy, yet self-efficacy is not a stable or unchanging concept. Bandura (1977) uses the example of public speaking (p. 203): one may have strong, positive self-efficacy for speaking on a subject in front of peers, yet may feel uncomfortable speaking about the same topic in front of teachers.

In this thesis, the term *confidence* extends Bandura’s (1977) self-efficacy to include a fifth source of information – self-concept, which generally represents “self-perceived competence in various domains (thereby including individuals’ knowledge about extant skills and abilities)” (Maclellan, 2014, p. 62). It is this self-perceived knowledge about one’s existing capabilities that individuals draw upon when they evaluate their own confidence (Kröner & Biermann, 2007). For example, after participating in a lecture or activity in which they feel they have learned new English content or skills, students may have positive self-concepts about their abilities, which would positively impact their confidence levels in English. However, if previous performance on tests was poor, their overall confidence towards an upcoming exam would be negatively impacted. They may feel confident about their English abilities, but not confident about their abilities to perform well on a test.

Of note, some scholars argue that the main conceptual difference between self-efficacy and confidence is “in terms of the often remarked domain [e.g., math or English self-efficacy] specificity” of self-efficacy (Stankov, Lee, Luo & Hogan, 2012, p. 749). As Maclellan (2014) describes, “self-efficacy is noted as a situationally-specific manifestation of confidence” (p.

62). The author, however, interprets the two terms, *self-efficacy* and *confidence*, as relatively similar, but distinguishes confidence by the fifth contributing source. This research was interested in students' confidence within a specific domain (English); in all the materials utilised (e.g., questionnaires), the researcher aimed to make clear that confidence in English (as opposed to one's general sense of confidence) was of interest.

Furthermore, this research primarily made use of the term confidence for practical reasons. The word is more colloquial and easily-understandable than self-efficacy, especially for second-level students; the common, everyday conception of confidence and the students' perceptions of their confidence was of interest. Moreover, the instruments on which the data collection materials were based also used "confidence" (see section 4.4), so the word confidence is used throughout this thesis to maintain consistency.

4.2.4 Relationships among Confidence, Engagement and Achievement

Bandura (1977) argues that conceptualising confidence from a social learning theory perspective impacts on how one chooses to examine the role of self-efficacy in behaviour processes. In his view, people's self-efficacy beliefs are greater predictors of their behaviour than their actual capabilities, because these "self-perceptions help determine what individuals do with the knowledge and skills they have" (Pajares, 2003, p. 140). According to Bandura (1977), self-efficacy not only affects choice to initiate behaviour, but also perseverance:

People fear and tend to avoid threatening situations they believe exceed their coping skills, whereas they get involved in activities and behave assuredly when they judge themselves capable of handling situations that would otherwise be intimidating. Not only can perceived self-efficacy have directive influence on choice of activities and settings, but, through expectations of eventual success, it can affect coping efforts once they are initiated. Efficacy expectations determine how much effort people will expend and how long they will persist in the face of obstacles and aversive experiences. The stronger the perceived self-efficacy, the more active the efforts. (p. 193-194)

The notion that confidence affects and predicts behaviour is widespread in educational research, theory, and policy. In Europe, curricular reforms have emphasised the concept of self, “implying confidence in oneself to be a fundamental competency. As such, self-confidence is invoked as an important psychological construct both in understanding human behaviour and in engendering well-being” (Maclellan, 2014, p. 60). Educators are interested in students’ self-confidence due to its impact on behaviour — a facet of engagement — and subsequently students’ health and happiness, present and future.

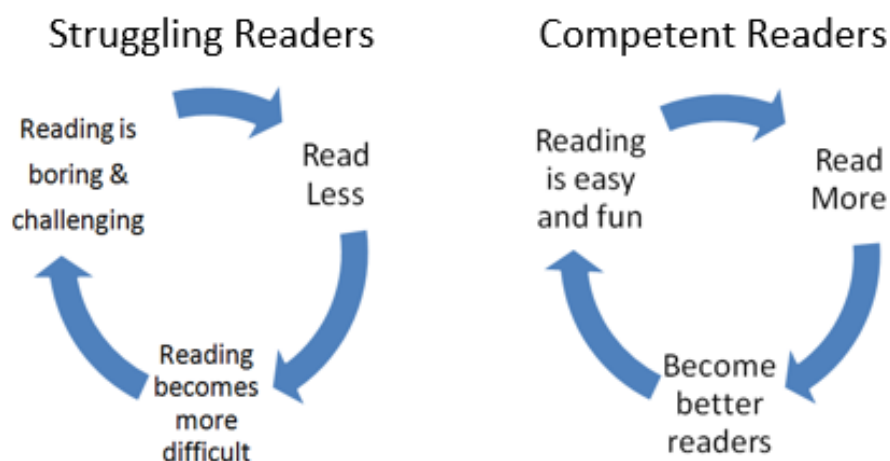
Because of the perceived connection between behaviour and outcomes, engaging students in the learning process is a valuable and desirable aspiration of educators. According to Fredricks et al. (2004), “several studies have demonstrated a positive correlation between behavioural engagement and achievement-related outcomes (e.g., standardised tests, grades) for elementary, middle, and high school students” (p. 70). In Guthrie and Wigfield’s (2000) review of the impact of instruction on engagement and academic performance, they argue the level of student engagement in classroom instruction is the primary factor that affects outcomes. The strength of the correlation varies across studies, however, due to the variety of measures used to assess achievement (Fredricks et al., 2004, p. 70). Despite the variance in measuring student success/achievement/learning, behavioural engagement does positively correlate with outcomes of those measures (Fredricks et al., 2004).

Alongside behaviour, emotional engagement is also thought to influence students’ “willingness to do the work” and subsequently their achievement (Fredricks et al., 2004, p. 60). Less research, however, exists on emotional engagement and achievement — as compared to behavioural engagement and achievement. Available studies, according to Fredricks et al. (2004), do show a “correlation between achievement and a combined measure of emotional and behavioral engagement” (p. 70). Due to the variety of ways both achievement and engagement are measured, the empirical research may not be entirely clear on exactly how or how much student engagement impacts achievement.

In literacy and English education research, it has been argued that effective adolescent literacy instruction must first address self-efficacy and (behavioural) engagement (Alvermann, 2002; Sulkunen, 2013), as students’ self-perceptions of their competencies in

reading and writing affect their behaviour. The cyclical relationships among confidence, behaviour, emotional engagement, and achievement are also noted. For example, those students who read more improve their skills and performance in reading, which improves self-perception of reading competency, leading to more enjoyment in reading and more reading (Curwood, 2013).

Figure 4.1: Author’s depiction of the cyclical relationship among behaviour, confidence and reading competency



While much of the literature emphasises the role that confidence has on predicting behaviour (and outcomes), some argue (e.g. Maclellan, 2014) that enabling students to accurately understand or assess their actual abilities is more critical than building their confidence: if one is either over-confident or under-confident, one’s subsequent actions or inactions can lead to poor outcomes. Accordingly, the teacher should focus more on enabling students to accurately “appraise” their abilities, so they can recognise when they are capable and when they need help (Maclellan, 2014, p. 65). While the importance of realistic appraisals is acknowledged, this study is focused on the impact of using the Bridge21 model on students’ engagement and confidence in English; it was beyond the scope of thesis Ph.D. research to “objectively” measure students’ literacy skills and compare them to students’ beliefs about their abilities.

For many educators or policymakers, the interest in studying, assessing, and/or improving attitudes (confidence and behavioural/emotional engagement) is critical, due to their links to achievement – which are often measured by standardised tests. While the author accepts the value in the power of confidence and engagement to improve achievement as measured

by tests, she also believes improving students' confidence and engagement in English are worthy goals in and of themselves.

Accordingly, the following research questions were developed:

RQ1: How and why does the Bridge21 approach to teaching new literacies impact students' engagement and confidence in English?

RQ2: How and why does the Bridge21 approach to teaching new literacies impact students' attitudes toward learning English with technology?

RQ3: How do teachers adapt or struggle to adapt the Bridge21 approach to teaching new literacies in their classrooms and what do they believe about the approach?

4.3 Research Approach

4.3.1 Methodological Approach

Through the process of investigating these research questions, the research aims could also be addressed. To reiterate, the research aims were to:

RA1: Develop a deeper understanding of how and why new literacies – and strategies for teaching new literacies in English – impact students' engagement in English (PS1)

RA2: Create and validate a reliable data collection tool that could be utilised to quantitatively measure the impact of the learning interventions of this research and other similar studies (PS1)

RA3: Develop a research-based, pedagogical approach for effectively teaching new literacies in the second-level English education context (PS2)

RA4: Create activities, lesson plans and materials for teaching new literacies effectively in the English classroom, share these resources with other educators, and investigate teachers' experiences using them in the classroom (PS2)

Accordingly, several research methodologies were carefully considered. Because this research involved a relatively new area of investigation, with a lack of detailed preliminary data available, only a few approaches, such as case study, (quasi)-experimental design, action research, design-based research, could be considered suitable for this research. Other methodologies commonly used in educational research, such as historical or

documentary research, *ex post facto* research, or survey (Cohen et al., 2011), were not viable options, as they are more suitable for investigating existing phenomenon, and therefore would not help answer the research questions or address the research aims.

Ultimately, a methodological framework that included a combination of case studies, along with some elements of action research, and organised into a research design that included three phases, was determined to be the most suitable approach for both theoretical and practical reasons. The following sections outline how these decisions were made.

4.3.1.1 Case Study or (Quasi-)Experimental Design

Case study was considered one methodology that could be appropriate for the research. Nisbett and Watt (as cited in Cohen et al., 2011) define case study as “a specific instance that is frequently designed to illustrate a more general principle” (p. 72); although a case study can only represent that specific instance, it can lead to analytic generalization, contributing to expanding theory and aiding others in understanding similar instances (Yin, 2009). A case study can be a singular instance or comprised of multiple embedded sub-units (Yin, 2009). Case studies frequently use both quantitative and qualitative methods and should accurately portray facts of the instance, make conclusions based on logical explanations, and offer alternative explanations (Mills, Durepos & Wiebe, 2009). Case studies could be exploratory in nature – having the purpose of refining hypothesis and research questions, which can be useful in relatively new areas of investigation (Mills et al., 2009). Case studies can also be explanatory in nature, aiming to “explain, describe, illustrate and enlighten” and advance theory (Yin, 2009, p. 19-20). They are considered an appropriate means to be used to *establish cause and effects* because they occur in real contexts, and the in-depth nature of this approach can lead to deep understanding (Cohen et al., 2011). Cases may be intrinsically selected – in which case a researcher has interest in understanding the case at hand and the audience is left to make generalisations – or they may be purposefully/analytically selected – where a researcher chooses a particular case because of its relevance to the research questions and the potential for generalisation (Stake, 1995). Case studies, therefore, could enable the researcher to draw conclusions that could contribute to deeper understanding within the field and provide support and guidance for others (i.e. address the research aims).

Similar to case study methodology, another approach that was considered for this research study was experimental (or quasi-experimental) design (Cohen et al., 2011). In this type of research, “investigators deliberately control and manipulate the conditions which determine events in which they are interested, introduce an intervention and measure the difference that it makes” (Cohen et al., 2011, p. 312). This approach aims to clearly establish *causality* by removing all other potential explanations for causes from a study. Experimental design makes use of control groups, where one group is introduced to a change/independent variable and the other is not; the result (the dependent variable) is then measured by comparing the differences between the two groups (Cohen et al., 2011).

Though experimental approaches can be attractive to educational researchers because of their aim and claim to more accurately determine causality through the use of *controls* (Cohen et al., 2011), those approaches were determined to not be suitable for this research precisely because of the need to use controls. In the first case, this research was to be conducted within the currently operating, multi-faceted Bridge21 project, which aims to provide a quality educational experience for *all* students who engage in the programmes (see section 3.3). Involving students for the purpose of serving as *controls* would be antithetical to the aims of Bridge21 and the author, and it could potentially adversely affect the Bridge21 project.

Additionally, the researcher challenges the premise that experimental/quasi-experimental design *more* accurately reveals cause and effect, for as Cohen et al. (2011) argue “casual effect is the difference between what would have happened to a person in an experiment if she had been in the experimental group (receiving the intervention) and if the same person had been in the control group. However, this is impossible to test empirically, as she cannot be in both groups” (p. 313-314). Though there is a proposed “statistical solution” to this issue, it involves “randomization and the measurement of average effects” (Cohen et al., 2011, p. 313-314); accordingly, this solution, due to logistical reasons, would also be beyond the scope of this Ph.D. research. Another method for evaluating impact, commonly used in case studies (Cohen et al., 2011), involves measuring differences in the same participants before and after an intervention; this approach was chosen for this research (section 4.4 elaborates on the research methods). In this way, case studies can emulate an experimental

methodology, yet they test theories in more naturalistic settings, which was considered more appropriate for this research (Yin, 2009).

Also similar to experimental research, case studies that aim to make generalisations use deductive principles (Yin, 2009). For example, a hypothesis is formed and theory is tested; empirical data is analysed to confirm, reject and/or further refine theory and its domain. Particular cases are chosen based on their richness and relevance to the theory; from the facts and evidence of the case study generalisations about the theory are drawn. Given the aims of this research study to test theory in naturalistic setting and to use the findings to provide other educators with practical information to implement changes in their teaching, case study methodology was deemed appropriate for this research.

4.3.1.2 Action Research (AR) or Design-Based Research (DBR)

Both Action Research (AR) and Design-Based Research (DBR) were strongly and carefully considered as methodologies that could be utilised for this research. These two approaches have several over-lapping features and aspects, which could have supported the research undertaken.

Since Lewin (1946) first used the term “Action Research” more than seventy years ago, AR has become a popular practice in the field of education (among other social sciences), but education researchers and theorists have developed varying definitions, emphasising different aspects of the methodology. For example, some scholars highlight the importance of collaboration among practitioners (Kemmis & McTaggart, 1988); others promote self-reflective inquiry (Carr & Kemmis, 1986); and some advocate for the development of theory (Stenhouse, 1979). Cohen et al. (2011) amalgamate a few of these definitions to convey a concise understanding of AR, utilised in this thesis:

Action research is a form of disciplined, rigorous enquiry, in which personal attempt is made to understand, improve and reform practice...a systematic study that combines action and reflection with the intention of improving practice...[It is] designed to bridge the gap between research and practice ...thereby striving to

overcome the perceived persistent failure of research to impact on, or improve, practice...[It] combines diagnosis, action and reflection...focusing on practical issues that have been identified by participants and which are somehow both problematic yet capable of being changed. (344-345)

Cohen et al. (2011, p. 347) draw upon Kemmis and McTaggart (1988), who summarise the key principles of action research. Their list is comprehensive and lengthy, so below are some of the concepts paraphrased, which are particularly relevant to this thesis. Action Research:

- develops through the *self-reflective spiral: planning, acting* (implementing plans), *observing* (systematically), *reflecting*...and then re-planning, further implementations, observing and reflecting;
- *starts small*, working through changes a single person can try, and works towards extensive changes — even critiques of ideas or institutions which might lead to reforms of classroom, school or system-wide policies;
- starts with *small groups*, but gradually includes more and more of those involved and affected by the practices in question; and
- involves people theorising and being inquisitive about their practices, circumstances, action and consequences, and coming to understand the relationships among these in their own lives.

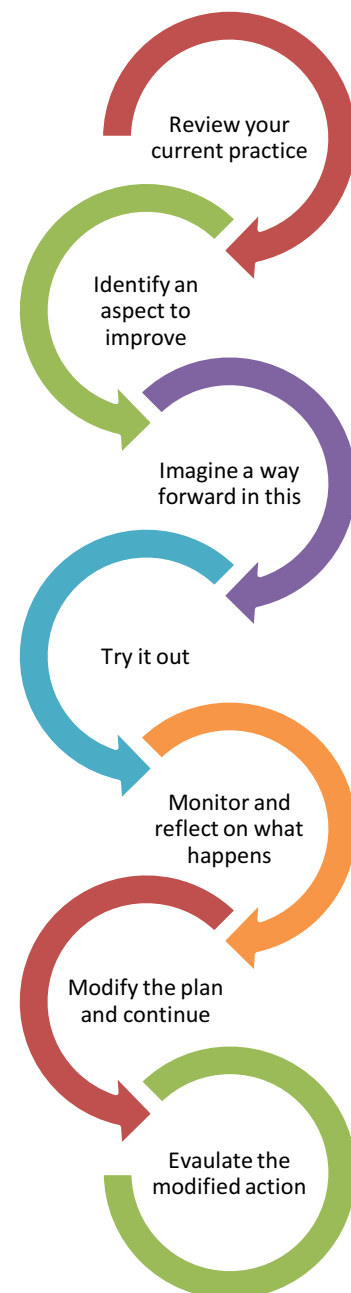
Action research has extensive scope: it could be used by an individual or groups of teachers, teachers from the same or different schools, and/or researchers and teachers working collaboratively (Cohen et al., 2011, p. 344). As McKernan (1988) argues, one of the purposes of action research is to “solve pressing day-today practical problems” and “curriculum research ought to be based on teachers’ work...and researched by teachers” (p. 154). It could also be used to investigate numerous aspects of education, such as “*teaching methods* — replacing a traditional method by a discovery method...[and] *continuing professional development of teachers* [emphasis added] — improving teaching skills, developing new methods of learning, increasing powers of analysis, of heightening self-awareness” (Cohen et al., 2011, p. 344).

These aspects of action research align with aims of the Ph.D. research to adapt the Bridge21 pedagogy for teaching new literacies in the English education context, to evaluate its impact on students' attitudes, and to share the approach/resources with other practitioners and investigate their experiences using them.

Design-Based Research (DBR) is a methodological framework with similar qualities to AR; Anderson and Shattuck (2012) define DBR as “a methodology designed by and for educators that seeks to increase the impact, transfer, and translation of education research into improved practice” (p. 16). Ann Brown is credited with first developing the methodology in 1992, arguing that “effective intervention should be able to migrate from our experimental classroom to average classrooms operated by and for average students and teachers, supported by realistic technological and personal support” (p. 143). DBR has only begun to take prominence in education research in the last 20 years and mostly in the United States; currently, DBR is increasingly becoming a more internationally recognised and utilised approach (Anderson & Shattuck, 2012).

DBR is similar to AR in its practical approach to educational research, involving an iterative process of creating learning interventions. Moreover, it seeks to improve teaching practice and “to advance theoretical agenda, to uncover, explore, and confirm theoretical relationships” (Barab & Squire, 2004, p. 5). DBR emphasises that this process occurs through the collaboration of practitioners and researchers, and an intention to create design principles that transcend the specific learning environment/context, where the research develops (Barab & Squire, 2004). As briefly noted earlier (section 3.3), DBR is currently the main research methodology used

Figure 4.2: Stages of Action Research (McNiff, 2002)



within the Bridge21 research programme, and it was therefore also considered as a viable approach in this research.

Though they are similar approaches to education research in their practicality and aim to influence educational practices, the researcher ultimately determined AR was more suitable for this research. As this research was initiated from the author's experience of teaching in a traditional secondary school environment, it aligned more with the "teacher-as-researcher" movement (Stenhouse, 1975), which relates to the individualistic side of action research (Whitehead, 1985) – as compared to DBR, which relies on collaboration with practitioners. As an individual practitioner, she could take the first steps in an AR cycle (see Figure 4.2), such as the one outlined by McNiff (2002). Lewin (1946) argued that to maintain scientific rigor, AR uses "a spiral of steps, each of which is composed of a circle of planning, action, and fact-finding about the result of the action" (p. 38). This cycle of the Stages of AR (McNiff, 2002) could support the researcher in framing her work. The first few stages include the identification of the issues and development of a hypothesis to address the problems. The next few stages involve investigation and iterations of action, reflection, evaluation, and modification. Thus, the researcher could engage in the cycle by asking herself, "'What do I see as my problem?' 'What do I see as a possible solution?' 'How can I direct the solution?' 'How can I evaluate the outcomes and take subsequent action?'" (Cohen et al., 2011, p. 348).

While she would eventually need to coordinate with members of the Bridge21 research team and occasionally with teachers to "try out" (McNiff, 2002) her proposed possible solutions, she would primarily be responsible for designing and implementing the learning interventions; collecting and analysing the data; and modifying, implementing and evaluating the new plan of action.

Essentially, an AR approach of engaging in a disciplined and rigorous cycle of research [planning, acting (implementing plans), observing (systematically), reflecting, and repeating as necessary] (Lewin, 1946; McNiff, 2002) could support the researcher in meeting the aims of this research (1.1.4).

Indeed the aims of this research also aligned more with AR than DBR. For example, the author aimed to closely examine the Bridge21 approach for teaching and learning new literacies in English and its impact on students – and she aimed to share the results of the research with other educators, so they could implement changes in their classrooms (Cohen et al., 2011). As previously stated, *AR starts small*, working through changes a single person can try, and works towards extensive changes — even critiquing ideas or institutions which might lead to reforms of classroom, school or system-wide policies (Kemmis & McTaggart, 1992). Essentially, the researcher could first iterate through the steps of action research herself – developing the Bridge21 approach for teaching new literacies and broadening her understanding of the theory. Then she could move on to sharing her findings and resources with other educators and begin to make changes on a larger scale. This research process, however, did not include some key goals of DBR. For example, DBR has a focus on the development of practical design principles that can transcend learning environments, which was not an aim of this research (Barab & Squire, 2004).

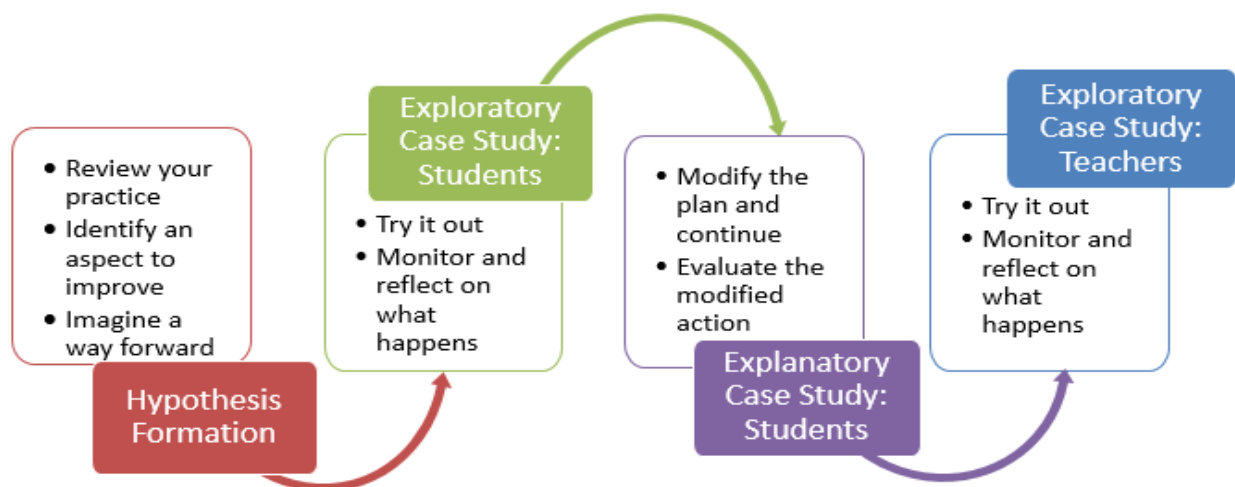
One final note on action research: AR is typically a “political” process because it aims to make changes to a social situation; accordingly, a researcher makes value judgments about society and has an agenda. As explained in section 2.2, the researcher believes that English education should help foster the individual growth of all students through enriching their understanding of culturally significant texts and developing the literacy skills students need to participate fully in society. In order to do this, students must also be engaged in the learning process. In this research process, the researcher made value judgments about what constitutes literacy; she also has a particular ‘agenda’ to ensure that today’s students are equipped with these skills – implying that the current education system is not adequately preparing students with the skills they need. Therefore, she aims to make changes to her own teaching practices, as well as those of others. This position, however, is not akin to the more specific branch of Action Research, called *participatory* action research (PAR) (see Freire, 1972). PAR emphasises social justice and empowering the participants, usually of disadvantaged backgrounds, through their active involvement in the research process and an examination of the institutionalised boundaries that reinforce their disadvantaged status (Cohen et al., 2011). Though the study, based within the Bridge21 context and the schools with which the programme typically collaborates, did involve several students from

‘disadvantaged backgrounds,’ it did not involve the students in a process of critically examining their socio-economic statuses and the ways and means in which institutional boundaries or the curriculum reinforce them.

4.3.1.3 Research Approach Decision: Case Study and Action Research (AR) Elements

Thus, after careful consideration of the possible methodological approaches, and determining that no single methodology perfectly suited an investigation into the research questions or supported an effort to achieve the research aims, it was determined that a methodological framework that included a combination of case studies, along with some elements of action research, was most appropriate. This decision also aligns with the pragmatist paradigm, within which the researcher position herself (1.4.2), which both is practical and supports collecting and analysing data in combinations that are most effective and efficient in answering the research questions (Cohen et al., 2011, p. 23).

Figure 4.3: Author’s depiction of the combination of case studies and an AR Cycle (McNiff, 2002), utilised in this research



4.3.2 Research Design

Given the overarching aims of the research, a design of three phases – each with a case study consisting of multiple embedded units – was utilised. Because this research involved a relatively new area of investigation, with a lack of detailed preliminary data, the first phase of the research involved an exploratory case study with students (Figure 4.4). It was used to

refine hypotheses and research questions – which is a typical initial step of an overall research design in these circumstances (Mills et al., 2009). The Exploratory Case Study: Students aimed to: (1) refine the learning activities and projects; (2) develop and refine the data collection materials and analysis procedures; and (3) preliminarily examine how the author’s adaptation of the Bridge21 model was impacting students’ attitudes toward English.

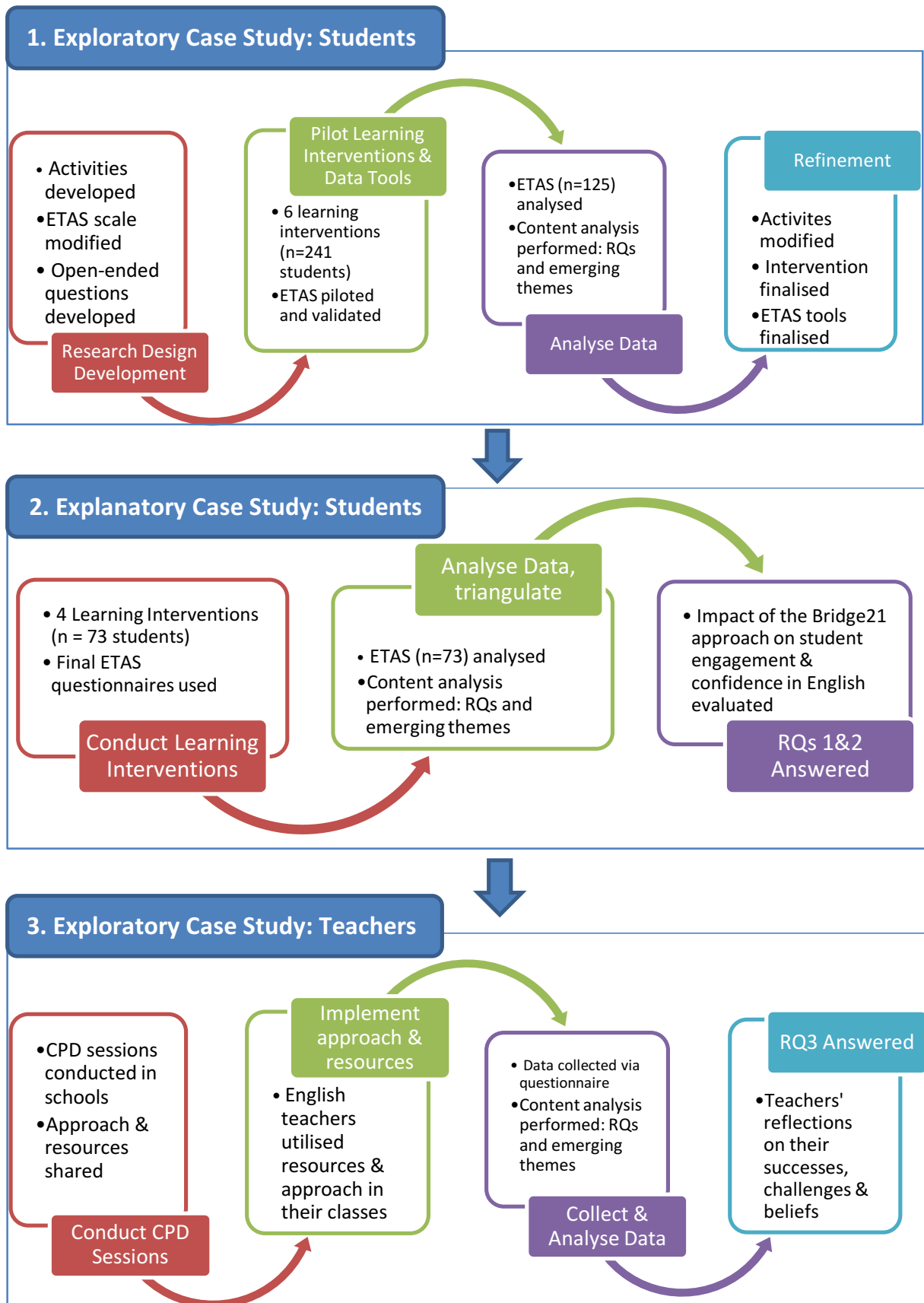
The Exploratory Case Study: Students consisted of several sub-units (Yin, 2009), or pilot learning interventions, which were utilised to refine the design of the activities and data collection instruments. (The Exploratory Case Study: Students occurred in the “try it out” and “monitor and reflect on what happens” stages in McNiff’s (2002) cycle.) The location and participants of these studies were determined opportunistically – through pre-existing relationships between members of the Bridge21 team and interested English teachers. Because the sub-units varied somewhat in context and data collection, and analysis procedures were being developed, the researcher used a variety of instruments, which would be typical in this approach (Cohen et al., 2011; Yin, 2009). In total, the Exploratory Case Study: Students contained 6 learning interventions, which took place in 2 different locations. The data gathered from these 6 embedded units were pooled, so that the various students and their schools formed one large main unit of analysis, one case study, exploratory in nature (Yin, 2013). The results of the Exploratory Case Study: Students provided important insights regarding activity design, data collection tools, and the research questions themselves. These findings were then integrated into the design of the learning interventions and research methods to be used in an explanatory case study with students (Figure 4.4). [Chapter 5 describes the details of the Exploratory Case Study: Students.]

After meeting the aims of the Exploratory Case Study: Students, the second phase of the research – the Explanatory Case Study: Students – was conducted. This case study aimed to answer the main research questions related to students and thereby evaluate the effectiveness of the Bridge21 model for teaching new literacies. Explanatory case studies are typically used to describe phenomena, explain cause and effect, and/or advance theory (Mills et al., 2009). Aiming to examine and explain how and why conditions are achieved, greater depth of understanding about phenomena under investigation is achieved (Yin,

2014). The Explanatory Case Study: Students also involved sub-units: 4 identically-designed learning interventions, conducted with 4 different groups of students (total n=73 students). With the aid of a refined learning intervention, data collection materials and data analysis procedures, the explanatory case study was used to look more closely at individual students or groups of students to determine the impact of the Bridge21 model on their attitudes – i.e. answer the first two research questions. As in the Exploratory Case Study: Students, the data gathered from these 4 embedded units were pooled, so that the various students and their schools formed one large main unit of analysis (Yin, 2013), and participants were viewed and analysed collectively. However, the Explanatory Case Study: Students involved more detailed analysis of the individual student participants, categorising and analysing impact on students based on their pre-existing attitudes in English. [The detailed descriptions of the learning activities, context, and results from the Explanatory Case Study: Students are described in Chapter 6.]

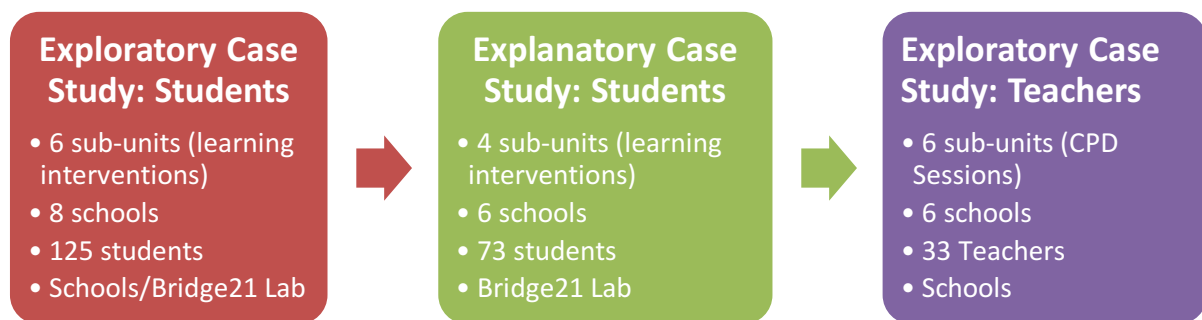
After analysing the data and reviewing what was learned from the first two main case studies with the students in terms of development of the approach, the use of the resources in teaching English, and the impact on the students (answering RQs 1 and 2), the research study was moved into the third phase. This phase – the Exploratory Case Study: Teachers – focused on moving the research from the development of the individual teacher/researcher to the development of other educators by sharing the findings with teachers, helping them to implement the approach and resources in their own classrooms, and collecting and analysing data based on their experiences of and beliefs about using the Bridge21 approach for teaching new literacies in English. The Exploratory Case Study: Teachers included conducting continuous professional development sessions in six schools (six embedded units) with a total of 33 teachers; some of whom subsequently integrated and reported on their experience of integrating what they learned in the CPD into their teaching. This investigation was exploratory in nature and preliminary data was collected and analysed to begin to address RQ3; however, it was an important aspect of the PhD study in that through this process, the researcher's aims of helping other teachers improve their practice in order to continue to meet the needs of today's students has begun to be met.

Figure 4.4: Progression of the Phases of the Research and Case Studies



The three-phase case study design also served the purpose of limiting the temporal frame of the research. As Cohen et al. (2011) suggest, action research has the potential to endlessly cycle, as one can repeat the work/the cycle until satisfaction with the particular aspect (p. 353). Through the use of three contained case studies and evaluable aims (McNiff, 2002), the author could evaluate the results of the interventions, make changes, and then evaluate the results of the modified approach. The first two phases helped answer the research questions related to students, and the third phase helped answer the research question related to teachers.

Figure 4.5: Case Studies, in numbers



4.4 Research Methods

4.4.1 Overview: Mixed Methods

To investigate the research questions and to meet the research aims, a number of research methods were considered. For reasons outlined below, a mixed methods approach, where data was drawn from multiple types of sources, was taken to investigate the impact of the Bridge21 approach to teaching new literacies on students’ attitudes in English. First, an approach using mixed methods is consistent with a pragmatist paradigm (see section 1.3.2), as it “integrates, both numeric and narrative approaches and data, quantitative and qualitative methods as necessary and relevant, to meet the needs of the research rather than the allegiances or preferences of the researcher, and in order to answer research questions fully” (Cohen et al., 2011, p. 23). Using mixed methods is also consistent with case study methodology, which accepts that there are many variables at play in any case and usually requires multiple tools and sources for data collection (Cohen et al., 2011). This

approach is more specifically considered, what Teddlie and Tashakokori (as cited in Cohen et al., 2011) describe as “parallel mixed designs” as “both qualitative and quantitative approaches run simultaneously but independently in addressing research questions” (p. 25). In this approach, multiple sources of data are “mutually illuminating” (Bryman, as cited in Cohen et al., 2011, p. 24), and through multiple sources of evidence converging in a triangulating fashion, the rigor of the case studies could be established (Yin, 2013). Ultimately, two types of data collection instruments (one quantitative and one qualitative) were utilised in conjunction for the case studies involving students, and each was analysed using a relevant corresponding approach. Essentially, the quantitative data collection tool, the ETAS scale, aimed to provide a numerically quantifiable picture of students’ changes in confidence and engagement, and the qualitative tool could confirm/reject those changes, and elucidate any other potentially significant findings. For the Exploratory Case Study: Teachers, a qualitative questionnaire was developed and analysed accordingly.

4.4.2 Quantitative Data

4.4.2.1 Rationale for the development of a quantitative scale

As the literature review highlighted, data on the impact of learning interventions involving new literacies/ICT in English is typically gathered primarily through qualitative research methods; moreover, much of the data collection and analysis does not assess for *change* in student engagement, confidence, or attitude. Generally, there is a lack of quantitative tools in the field of second-level English educational research. To the researcher’s knowledge, there were no available quantitative questionnaires related to use of technology in general English education at the time this research was conducted. Available surveys relate to specific skills such as reading or writing, or they focus on primary school-aged children (Bottomley et al., 1998; Henk & Melnick, 1995; McKenna et al., 2012). It was thought that a quick-to-administer, valid quantitative tool that measures the effects of learning interventions involving ICT on students’ attitudes in English would be valuable in this research, as well as to other studies, researchers and educators.

Accordingly, to quantitatively measure the impact of the Bridge21 approach to teaching new literacies in English on student engagement and confidence in English, a pre- and post-test instrument called the English and Technology Attitudes Scale (ETAS) (Appendix A) was

created and validated (Kearney, Gallagher & Tangney, 2018). It is a 19-item likert-style scale with five subscales (3-4 items/subscale), measuring the following constructs:

- Emotional Engagement: how students *feel* about English
- Behavioural Engagement: how students behave in English
- English Confidence: perceptions of their ability to do well in the subject and to overcome any challenges that may arise
- Technology Confidence: perceptions of their competence in using the tools of technology (one aspect of new literacy skills; see 2.5)
- Attitude to learning English with Technology: attitudes about using technology in the learning process in English

4.4.2.2 Development of the ETAS Scale

The ETAS is an adaptation of the *Mathematics and Technology Attitudes Scale* (Pierce, et al., 2007), which was taken as a suitable starting point because of its concern with similar concepts: student engagement and confidence in a particular subject, confidence in technology, and attitude toward learning the subject with technology. MTAS, a validated tool, was designed to be used as a pre- and post-test, measuring the impact of technology-mediated learning experiences on students' attitudes toward math and technology. Using Likert scales on 20 items, it measures five theoretical concepts (which they call subscales): math engagement (behavioural and emotional); math confidence; confidence with technology; attitude toward learning math with technology.

The development and validation of ETAS occurred in multiple phases, beginning with a theoretical conceptualisation of the 5 key constructs being measured (see section 4.2 for a detailed description of these concepts). In some cases, only minor modifications to the language in the MTAS items were needed. For example, an item in the emotional engagement subscale on the MTAS is, "Learning mathematics is enjoyable." This item was changed to "Learning English is enjoyable." Other items, however, were more complex and not as easily adaptable. For example, the MTAS math confidence subscale includes "I have a mathematical mind," which does not have the same linguistic understanding within the English discipline. Upon discussion and reflection, the item was modified to "My mind is suited to English," aiming to capture the item's essence and the commonly-used language of

the study's location. The first iteration of ETAS included five subscales and a total of 22 individual items (4-6 items per subscale) (Appendix B.1).

4.4.2.3 Piloting the ETAS Scale

The initial scale was piloted over the course of three months with five different cohorts of adolescents (total n=158). These participants were students in secondary schools in Ireland, coming from multiple socio-economic, racial and ethnic backgrounds; they were also primarily participants in the pilot learning interventions in the exploratory case study, as Chapter 5 further explains. After each group completed the scale, an exploratory factor analysis was performed, using SPSS software, to evaluate the effectiveness of the scale as a whole and of each individual item. The factor analysis – a common test in the field of education and social research (Carey, Brigman, Webb, Villares, & Harrington, 2014; Pishghadam & Khosropanah, 2011) – revealed a few items were problematic. For example, the behavioural engagement item, “If I can’t do a problem, I keep trying different ideas,” loaded poorly and did not correlate with other behavioural engagement items. It was thought this item was problematic because in English, one is not given “problems” to “do.” After multiple iterations, the final version, “If I don’t know how to answer a question, I try to find out,” was deemed suitable and the factor analysis confirmed its usability. Moreover, the items added to the subscale “Attitude toward learning English with Technology” construct proved unsuitable, loading poorly and not correlating appropriately, so the decision to discard them was made. This iterative process of question refinement, sample testing, and factor analysis lasted several months until a 20-component scale was developed and agreed upon by researchers.

4.4.2.4 Validating the ETAS Scale

An online survey tool was used to disseminate the modified ETAS to 15 Irish secondary schools. The sample included both single sex and co-educational schools; students of diverse socio-economic, ethnic and racial backgrounds; and students with varied access to technology in school and at home. Completion of the scale was voluntary; however, an incentive of a €50 prize voucher was used to improve responses. The scale was open for six months; in that time, 453 responses were collected, and 419 of those were deemed valid.

SPSS software was used to perform an exploratory factor analysis on the data. As per accepted guidelines (López, Valenzuela, Nussbaum, & Tsai, 2015), the following parameters are reported: number of factors extracted, total variance explained by extracted factors, Kaiser-Meyer-Olkin index, sample size, and ratio of number of participants to the number of variables factored. The ETAS had 20 components; 419 responses satisfied the 10:1 cases to indicator ratio commonly cited in the literature needed to perform factor analysis (Kline, 2013). However, in exploring the results of the factor analysis, it was found that the item: “I concentrate hard in English” was crossloading across multiple factors and was removed. The factor analysis was rerun with 19 factors. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.873, indicating that the data was appropriate for factor analysis; a score between 0.8 and 1.0 is adequate, with .8-.9 being considered “meritorious” (Cerny & Kaiser, 1977). Bartlett’s test of Sphericity was highly significant ($p < 0.001$) (significance at the $p < 0.05$ threshold) also indicating the appropriateness of factor analysis (Cerny & Kaiser, 1977). Using a Varimax rotation, a total of five factors were identified as having an Eigenvalue greater than 1. According to the Guttman-Keiser rule, factors with an Eigenvalue larger than 1 should be retained (Guttman, 1954; Kaiser, 1960). In addition, factors that account for 70-80% should be retained and all factors before the breakpoint of the Scree plot below should be retained (Cattell & Vogelmann, 1977). These five factors explained 70.4% of the variance, with the first factor, Attitude Toward Learning English with Technology, explaining 32.2% of the variance (see Appendix B.2: Description of factor variance).

All of the factor loadings were above 0.6, which according to Kaiser (1974) is acceptable for inclusion (Appendix B.3: Final ETAS Items and Factor Loadings). Kaiser (1974) recommends values greater than 0.5 as being acceptable: between 0.5 and 0.7 are mediocre, between 0.7 and 0.8 are good, and between 0.8 and 0.9 are superb. Of the 19 items, 9 items were between 0.8 and 0.9, or superb; 7 items were between 0.7 and 0.8, or good; and 3 items were between 0.6 and 0.7, or mediocre. Finally, to evaluate the internal consistency of the variables, reliability analysis of the questionnaire was performed. Alpha values (Appendix B.4) indicated an acceptable degree of internal consistency in each subscale: according to Nunnally (1978), a Cronbach’s α value above .5 indicates an acceptable level of reliability.

Through these processes, the researcher, in collaboration with others, developed and validated a quantitative scale that other researchers and practitioners could feasibly use to measure the impact of their learning interventions related to new literacies/technology in English (Kearney et al., 2018). Therefore, it contributed to the field by adding an instrument which could be used to investigate key areas of interest.

4.4.2.5 Collecting and Analysing the ETAS Quantitative Data

At the start of each learning intervention, the ETAS was administered to students individually. They were directed to reflect on their general experience of English class in school as they complete the scale. At the end of the learning intervention, students completed the ETAS again, but this time reflecting on their experience during the intervention. In other words, the same ETAS scale was distributed twice, before and after, with a variation in the directions.

To determine whether students have high, moderate or low attitudes, scores for each ETAS subscale can be calculated by finding an average. For each individual item a “strongly disagree” response is 1, “disagree” is 2, “unsure” is 3, “agree” is 4, and “strongly agree” is 5. As consistent with the MTAS interpretations of the scores and the language used to describe them, an average score of 4.1-5.0 in a subscale² indicates a high or “very positive attitude,” 3.1-4.0 is a “moderately high” attitude, and 3.0 and below reflects a “neutral or negative attitude” (Pierce et al., 2007, p. 294).

To analyse the ETAS data, the Shapiro-Wilk test was first conducted to determine “normality” – if the data significantly deviate from the standard distribution (Laerd Statistics, 2013). Next, two tests were performed to assess for changes in attitudes reported in each of the subscales and the statistical significance of these changes: a parametric test

² Of note, the MTAS uses totals (a score out of 20 for each subscale) rather than averages. The rationale for using averages in the ETAS, was that one subscale, Behavioural Engagement, has only three items, which would total to 15, while all other scales total to 20. So for consistency of interpretation and to enable comparison across the scale, the authors recommend using averages.

(paired-samples *t*-test) and nonparametric test (Wilcoxon Signed-Rank test). Chapters 5 and 6 explain in more detail and justify the choices for these tests; they also provide the results.

Figure 4.6: The Final ETAS Quantitative Scale

	Statement	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	When the teacher asks a question I try to think of the answer. [BE]					
2	If I make mistakes, I work until I have corrected them. [BE]					
3	If I don't know how to answer a question, I try to find out. [BE]					
4	I am good at using computers. [TC]					
5	I am good at using devices like games consoles, tablets, smart phones, etc. [TC]					
6	I am good at solving technical issues. [TC]					
7	I can master any computer programs or apps needed for school. [TC]					
8	My mind is suited to English. [EC]					
9	I can get good results in English. [EC]					
10	I know I can handle challenging work in English. [EC]					
11	I am confident in English. [EC]					
12	I am interested to learn new things in English. [EC]					
13	Learning English is rewarding. [EE]					
14	Learning English is enjoyable. [EE]					
15	I get a sense of satisfaction when I able to answer an English question. [EE]					
16	I like using technology tools for English. [ET]					
17	Using technology tools in English is worthwhile. [ET]					
18	English is more interesting when using technology tools. [ET]					
19	Using technology tools in English helps me learn better. [ET]					

4.4.3 Qualitative Data

4.4.3.1 Questionnaires

Along with the quantitative ETAS scale, student participants were asked to complete questionnaires containing several open-ended questions related to the research questions about engagement and confidence in English and learning English with technology. The participants completed both parts of the ETAS (the scale and open-ended questions) as one whole instrument, which will be referred to as the “ETAS Questionnaire” throughout this thesis. Thus, care was taken to sequence the questions appropriately, as “early questions may set the tone or mindset of the respondent to later questions” and it is recommended to “commence the questionnaire with non-threatening questions that respondents can readily answer” (Cohen et al., 2011, p. 397-398). Commonly, questionnaires are designed to move from (a) unthreatening factual questions (e.g. sex, age, occupation) to (b) “closed questions (e.g. dichotomous, multiple choice, rating scales...) about given statements” to (c) more open-ended questions that require opinion and attitudes, which might include more personal information (Cohen et al., 2011, p. 398).

The final version of the pre-intervention ETAS Questionnaire (Appendix A) began with 6-7 questions about participants’ demographic information (e.g. name, school, and age). From there, students completed closed questions, rating how they feel from strongly disagree to strongly agree on the 19-items (the ETAS quantitative scale). In the exploratory case study, there were no open-ended questions on the pre-intervention ETAS Questionnaire; for the explanatory case study, several open-ended questions were added to the pre-intervention ETAS Questionnaire, based on the results from the exploratory case study (see sections 5.4 and 6.4).

The post-learning intervention ETAS Questionnaire began with just one demographic question – the participant’s name, for the purpose of pairing the pre- and post- tests – then moved directly to the same 19 items of the quantitative ETAS scale. Finally, they completed several open-ended questions related to the key phenomena under investigation (engagement, confidence, attitudes). The open questions aimed to “enable participants to write a free account in their own terms, to explain and qualify their responses and avoid the

limitations of pre-set categories of response” (Cohen et al., 2011, p. 382). In designing the open questions, care was taken to avoid the “pitfalls” of question writing, as described by Cohen et al. (2011, p. 396-397) and paraphrased below. These pitfalls include:

- leading questions (those which suggest there is only one answer);
- using overly, unnecessarily sophisticated or complex language;
- too many open-ended questions, and thus a too-demanding questionnaire;
- using negatives and double negatives; and
- ambiguity in the questions.

The original open-ended questions were developed using the theoretical underpinnings of the phenomena being measured (see section 4.2) and based on the standard Bridge21 reflection form, used at the end of a Bridge21 learning intervention, which seeks similar information from students about their experiences and attitudes (Lawlor et al., 2016). It was hoped that the open questions would elicit responses that provide more insight to the results of the ETAS quantitative scale – i.e. triangulate (or not) the quantitative data. The researcher was not only interested in a reported change in confidence or engagement, but why the learning experience had that impact. To that end, 5 open-ended questions were developed for the Exploratory Case Study: Students (section 5.4).

As expected, when conducting research in an area where little empirical research has been completed and tools are scarce (Mills et al., 2009), the questions were modified over the course of the first phase of the research; some questions were eliciting responses that were not providing information directly relevant to the research questions at hand. Sections 5.4 and 6.4 discuss the evolution of the ETAS Questionnaire in detail and explain the modifications made to the tool before being used in the Explanatory Case Study: Students (also see Appendix A: The Final ETAS Questionnaire).

For the Exploratory Study: Teachers, a qualitative questionnaire was also developed and utilised to investigate the experiences and beliefs of teachers using the approach and resources in their classrooms and their beliefs. This questionnaire, entitled the “English Teachers Follow Up Survey,” was modelled upon other questionnaires utilised in similar contexts, which have been developed and refined over the course of several years (Byrne,

Fisher & Tangney, 2015; Roche, O’Sullivan & Tangney, 2015). [Section 7.4.2 elaborates on the development of the questionnaire utilised in this case study]. Given the research question related to teachers (RQ3) and the research aims (particularly, RA4), participants were asked about their experiences (successes, challenges, etc.) of trying to implement the Bridge21 approach and about their beliefs related to the effectiveness of using Bridge21 in their English classes. Teachers mostly completed this questionnaire online, after using the approach and resources in their classrooms. Sections 7.4 and 7.5 elaborate on the data analysis and results.

4.4.3.2 Additional Data and Artefacts Collected (but not utilised)

1. Semi-structured group interviews

In some of the learning interventions with students, there was an opportunity for the researcher to conduct brief interviews with a few of the student teams. It was thought that these interviews might fill in any outstanding gaps from the written questionnaire and/or further corroborate evidence (Yin, 2013).

The researcher aimed to collect specific information about participants’ experiences, but also allow for any additional potentially important information to emerge; accordingly, the interviews conducted were semi-structured (Cohen et al., 2011). In this type of interview the key areas and topics to be covered are decided before the interview, but the sequence and phrasing of questions can vary slightly over the course of the interview to allow for a more conversational and informal tone – and for a respondent to have the “freedom to give her own answer as fully as she chooses rather than being constrained in some way by the nature of the question” (Cohen et al., 2011, p. 419). Though this approach poses some challenges with comparing data, as the questions may vary slightly, the researcher considered a more conversational approach essential in the context of the case studies and the participants (adolescents) involved. She took care with sequencing and framing of questions to put the interviewees at ease. For example, she used simple, straightforward language and began the interviews with “less threatening, non-controversial” questions before moving on to more personal opinion-seeking questions (Cohen et al., 2011, p. 423).

The interviews varied slightly depending on the context of the learning intervention, but generally included questions such as:

- How did your team get on today?
- How did this experience compare to your typical English class?
- What did you like/not like?

These interviews generally lasted 3-5 minutes. As the research progressed, the researcher listened, transcribed, and reviewed the interviews in light of the other data collected. Through analysis of this data, it was clear that this additional information did not contribute new or different ideas than the data collected from the written ETAS Questionnaire. Therefore, to more clearly communicate and present the data collected and analysed, as well as the key results of this research, it was determined not to include this data in this thesis.

2. Observations

Throughout the learning interventions, the researcher observed the students, making notes on student-student interactions, facilitator-perceived levels of engagement and confidence, individual/team progress in completing tasks, and any challenges with the design of the learning experience. Though observation can be a useful qualitative research method, the researcher purports that due to her integral role as facilitator within the learning experience she could not participate in a systematic observation method (Yin, 2013). Therefore, her notes were not used for evidence or analysis in addressing the research questions. However, her observational notes related to overall learning intervention design and individual activities were utilised in making modifications to the learning interventions from the exploratory to the explanatory case study. These included notes on apparent student interest/engagement in a topic or activity, time allotted for task completion, modification to task directions, etc.

3. Team reflections

As previously explained (section 3.3), teams typically complete a team reflection questionnaire, as a final step of the Bridge21 activity model. It was decided that the reflection questionnaires would not be analysed because the questions were more focused

on the achievements and challenges the students faced as a team while completing a particular task and were completed conjointly as a whole team; they were the standard set of questions students complete at the end of any Bridge21 activity (see Chapter 3.3). Thus, they did not directly address the research questions and cannot be matched with individually completed ETAS Questionnaires.

4. Student work: products and projects

The researcher collected additional artefacts that could have been analysed: the products that projects participants created throughout the learning interventions. However, these were not considered for data analysis because they cannot be analysed for changes in an individual student's (or team's) attitudes.

4.4.3.4 Qualitative Data Analysis

Qualitative data analysis involves interpreting, synthesising, and communicating the data – “making sense of data in terms of the participants’ definitions of the situation, noting patterns, themes, categories and regularities” (Cohen et al., 2011, p. 537). A challenge in qualitative data analysis is its subjective nature; a researcher always has a bias, background, or agenda which leads to a certain interpretation of the data (e.g. over-emphasising some aspects of the data and ignoring others) (Berger, 2015; Cohen et al., 2011). Moreover, “Data obtained are all couched in ‘social events,’ so reporting involves a *double hermeneutic* process ... by which the researcher *interprets* the data from participants who have already interpreted their world, and then *relates* them to the audience in his/her own words” (Cohen et al., 2011, p. 540).

To address these inherent challenges in analysing data and interpreting the interpretations of others, it is recommended (Whyte, 1993) to be as clear and honest as possible about the researcher’s aims, roles within the research and theoretical influences (see Chapters 1 and 2, and section 4.6). Clarity about choices and processes also allows others to “use the same assumptions and methods to verify or challenge conclusions” (Cohen et al., 2011, p. 541).

Qualitative content analysis, the approach used in this research, is only one of “numerous research methods used to analyse text data. Other methods include ethnography, grounded theory, phenomenology, and historical research. Research using qualitative content analysis focuses on the characteristics of language as communication with attention to the content or contextual meaning of the text” (Hsieh and Shannon, 2005, p. 1278). Qualitative content analysis is a “research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns,” and it aims to offer insight and understanding of the phenomenon under investigation (Hsieh and Shannon, 2005, p. 1278). Content analysis “defines a strict and systematic set of procedures for the rigorous analysis, examination and verification of the contents of written data;” it is a process for making replicable and valid inferences from the text (Cohen et al., 2011, p. 563). It is not simply counting words, but rather “examining language intensely for the purpose of classifying large amounts of text into an efficient number of categories that represent similar meanings” (Hsieh and Shannon, 2005, p. 1278).

Content analysis was chosen because it is a suitable approach for interpreting data collected from open-ended questionnaires; it can be used for synthesising information, outlining themes, and describing patterns (Cohen et al., 2011). This approach is consistent with the use of mixed research methods and the pragmatist paradigm underpinning the research undertaken in this Ph.D. research (Cohen et al., 2011).

Within qualitative content analysis, there are also a number of approaches which can be taken to analysing, coding and presenting data – and there is inconsistency in the terminology used in the literature to describe these various approaches (Cohen et al., 2011). In their review of content analysis, Hsieh and Shannon (2005) argue that there are three major approaches, differentiated primarily by the processes for developing codes/categories:

(1) Conventional

When theory/research is limited in the phenomena under investigation, this approach is commonly used. Instead of using preconceived labels in coding the data, codes and categories are derived from the data itself. Through immersion in the data, new insights emerge. This process is akin to open coding (Cohen et

al., 2011) or inductive category development (Hseih and Shannon, 2005, p. 1279; Mayring, 2004).

(2) Directed

This approach is more structured than conventional content analysis. It's utilised when theory and research about the phenomena under investigation exists, but need validation, conceptual extension, or further exploration and description (Hseih and Shannon, 2005, p. 1279). In contrast to conventional content analysis, codes are determined a priori from the existing theory and research; this process is referred to deductive category development (Mayring, 2004).

(3) Summative

“Fundamentally different” from the other two, a summative approach focuses on key words and their usage, aiming to identifying patterns that would lead to “an interpretation of the contextual meaning of specific terms or content” (Hseih and Shannon, 2005, p. 1286). It is typically used in analysing, for example, word usage in manuscripts, journals or text books. Usually, it begins by searching for words identified by the researcher(s), subsequently looking for euphemisms of those words, and ultimately drawing conclusions based on the usage.

This list of approaches to content analysis, however, is not exhaustive (see Cohen, 2011, pgs. 563-569); moreover, within any of these approaches there are multiple ways to approach the coding, categorising, summarising and presenting data.

In this research, elements of both directed content analysis and conventional content analysis were used, given the research questions and aims. Ezzy's (2002) approach to qualitative content analysis, which widely is utilised and cited by educational researchers, was employed. The following procedure (Ezzy, 2002, p. 83) was conducted:

- Start with a sample of texts (the units)
- Define the units of analysis (e.g. words, sentences)
- Define the categories (i.e. nodes) to be used for analysis
- Review the texts in order to code them and place them into categories
- Count and log the occurrences of words, codes, and categories

After the final step of counting the occurrences of words, codes, and categories, statistical analysis can be applied to help interpret the results (Cohen et al., 2011, p. 564). Weber (as cited in Cohen et al., 2011) also advocates using statistical techniques and quantitative methods in content analysis, as the “highest content-analytic studies use both quantitative and qualitative analysis of texts” p. 564). To help complete this process, this researcher utilised the data analysis software, Nvivo, and its matrix coding query feature, which can help a researcher identify relationships between codes/categories. Sections 5.4, 6.4 and 7.4 explain in more detail how Nvivo was utilised.

As Cohen et al. (2011) summarise, analysing qualitative data is an iterative process that “put simply...involves coding, categorizing (creating meaningful categories into which the units of analysis – words, phrases, sentences, etc. – can be placed), comparing (categories and making links between them), and concluding – drawing theoretical conclusions from the text” (p. 564).

The subsequent chapters (5, 6 and 7) provide further description of the development of the codes/categories and the coding processes utilised in analysing data collected during each phase of the research. For example, the coding development process in phase 1 (Exploratory Case Study: Students) was utilised to refine and modify codes to create a coding schema, which then was used to analyse the data the of the Explanatory Case Study: Students (there were some additional minor modifications to reflect the different subject content studied in the learning interventions). Following on, the researcher utilised the same process to develop a coding schema for the third phase of the research – the Explanatory Case Study: Teachers. Using both qualitative and quantitative measures, the researcher provides interpretations of the data collected from the questionnaires to answer the research questions and present additional significant themes arising.

4.5 Ethical Considerations

Because these case studies involved people, particular attention was given to ethical considerations, and a research approach that adheres to the ethics standards required by the School of Computer Science and Statistics, Trinity College Dublin, was devised. Approval for the overarching Bridge21 project had previously been granted by the School of

Computer Science and Statistics Ethics Committee, and was in place at the start of this Ph.D. research. Further ethical approval was sought for this particular project, outlining its individual purpose, scope, methods and instruments to be used.

The case studies necessitated informed consent from all participants: students and teachers. Because the student participants were under 18 years of age, information was provided to and consent was also required of parents/guardians. Furthermore, consent was obtained from the Board of Managements and the school principals from each school. There were options for all participants to refuse to take part or to withdraw from the study at any time, without penalty, and confidentiality was strictly respected (see Appendix C for sample student participant information consent forms). In addition to the consent forms, the researcher distributing the survey verbally reminded participants that their participation was voluntary and that they could withdraw at any time without penalty. All information collected was anonymised and stored in accordance with the Data Protection Act at Trinity College Dublin.

4.6 Methodological Considerations and Limitations

This section presents some general considerations and limitations of the research design and research methods used throughout this Ph.D. research. The researcher will continue in a reflexive practice, considering how her role within the study may have potentially impacted various aspects of the research (Berger, 2015). Chapters 5, 6 and 7, which report on the three phases of the research and the corresponding case studies, will discuss the more specific considerations and limitations of each of those studies, which relate to things such as the individual context, participants, and questionnaires.

4.6.1 Research Design

To examine the impact of the Bridge21 approach on students' attitudes, as well as teachers' experiences using the Bridge21 approach in their classes, this research utilised case study methodology, where the researcher purposefully selected a particular case because of its relevance to the research questions and the potential for generalisation (Stake, 1995).

While case studies are useful for closely examining a specific instance and can potentially be used to generalise or to illustrate a concept (Cohen et al., 2011; Yin, 2009), they ultimately can only demonstrate the findings from that particular case study, and cannot provide concrete evidence for how the learning intervention might impact on the participants in another context. Despite this limitation, case study results can help researchers and practitioners generalise and make predictions about the impact in a similar context (which the researcher elaborates upon in the conclusions chapter – 8), and was therefore deemed a useful and appropriate approach.

The case studies helped provide evaluable end points to a greater action research cycle in which the researcher (a teacher) was engaged. In this type of action research, where the teacher becomes a researcher, it is possible that “through systematic analysis of a specific aspect of teaching or learning, teachers can begin to articulate those principles more clearly and so present them for critical self-scrutiny and for examination by colleagues” (Nixon, 1987, p. 20). Yet, it is critical that the role of the teacher/researcher is carefully considered and examined throughout this process, given that the position can affect the research and its outcomes (Berger, 2015, p. 220). For example, the researcher had a central role in designing and conducting the learning interventions – creating the lesson plans, activities, and materials – and then implementing them with students. Though this was a necessary process, given that this research was an investigation into the researcher’s adaptation of a pedagogy for teaching new literacies in English, her biases in terms of content (e.g. Shakespearean works) and beliefs about literacy (e.g. social nature of literacy) were reflected in the design of the learning interventions themselves.

A researcher can also have positions of “insider” and “outsider” within the research, which have both benefits and drawbacks (Berger, 2015). When a researcher shares the experience of a study’s participants, she is an insider, whereas when she has not had personal experience with what is being studied, she is an outsider; it’s also possible for a researcher to move from outsider to insider within a study (Berger, 2015). Being an “insider” can have the benefits, for example, of making the participants feel more comfortable and willing to share with the researcher, thereby enabling the researcher to understand the complexities and nuances of a situation (Berger, 2015). However, a researcher may also tend to compare

experiences and filter what they hear from participants through the lens of their own experience (Berger, 2015, p. 224). The “outsider,” on the other hand, may offer a fresh or new perspective and questions related to a topic with which they are unfamiliar; yet, the outsider might face challenges in developing questions, using appropriate language, and establishing relationships when researching an issue/experience that she has not had herself (Berger, 2015).

Within the case studies conducted with students (the exploratory and explanatory), the researcher had the roles of both an “insider” and an “outsider” in several ways. Because the researcher had first-hand experience teaching English in a variety of contexts, she was an insider in some ways. She has a shared experience of students of being a student of second-level English (in the past 15 years), as well as a teacher of second-level English over the past 5 years, which means that she has a reasonable understanding of modern-day English education, from the perspective of both a student and a teacher; she knows what it can be like to be in an English classroom. She also, in conducting the learning interventions, was clear to students about her professional background and research intentions and aims, thus sharing with them the general goal of hoping to improve their educational experiences in English – positioning herself as a student advocate in some ways. She was also a member of the Bridge21 programme, which has a reputation of creating valuable, engaging experiences for students, which likely positioned her favourably as well.

However, the researcher was also an “outsider” to the students in that she did not share the *same* experience: she was not a student in an English class in Ireland at any point. Additionally, she is older than students (by about 15 years) and she acted in an authoritative role throughout the learning intervention, as she was the facilitator/teacher at different points; however, she was not their regular classroom teacher nor a teacher in their school. Moreover, she is not from Ireland originally – though several of the students involved in the study also were not from Ireland. This insider-outsider position could have impacted upon the student-participants’ experiences during the learning interventions themselves. Students were perhaps more comfortable, honest or open during the activities than they would have been otherwise because they may have been more willing to take risks or participate on the ‘journey’ along with researcher, interpreting her as an educator seeking

to help them in contrast to a teacher evaluating them. Alternatively, some students may have been more reticent around an outsider – a ‘foreign teacher.’ However, the researcher herself, and her personal characteristics and beliefs, likely impacted upon how the students chose to participate, in turn affecting their experiences and reactions to the learning interventions.

In terms of the case study with teachers, the researcher similarly had experiences of being both an insider and outsider. As the teachers involved in the study, she taught second-level English education for several years, and though she taught in a different country, she taught much of the same curriculum content and skills and can empathise with many of the same challenges teachers in Ireland experience. She also has been working with English teachers in Ireland for a number of years. This shared experience enabled the researcher to create materials that she believed would be useful to other teachers and conduct a CPD session that she also believed would be valuable. She was, however, an outsider in that she herself was not a currently practicing teacher in any of the schools with which she worked nor in Ireland. The tension created between the insider and outsider positions (Berger, 2015) was beneficial in the CPD sessions where the researcher could express an empathetic point of view because of her shared experience teaching, as well as a different perspective on a current situation because of the diversity in her experience. Teachers could also be open and honest with the researcher because she was not an authority in the school system requesting certain changes be made to their teaching/curriculum, but rather another educator trying to offer help. As in the student case studies, their behaviour and participation in the CPD workshops themselves were certainly influenced by the researcher’s personal characters and relative position; and their behaviour would shape their feelings and thoughts about the CPD itself.

4.6.2 Research Methods

These positions of “insider” and “outsider” within the research design also have an impact on the research methods, particularly qualitative – the development of the research tools, the data collection, analysing and reporting. Accordingly, the researcher used reflexivity throughout the research process, “as a means to monitor the tension between involvement

and detachment of the researcher and the researched as a means to enhance the rigor of the study and its ethics” (Berger, 2015, p. 221). She also used a variety of strategies to address the issues related to her positionality and add trustworthiness and credibility to the case studies (Berger, 2015).

As explained in section 4.4, the researcher developed the questionnaires used to collect qualitative data from both students and teacher participants. Though these questionnaires were modelled from other pre-existing questionnaires utilised in similar studies, the researcher’s personal characteristics and experiences could have impacted the way she phrased the questions and the questions she asked – of course she had a particular interest in the research questions developed for the study and shaped the questions on the data collection tools accordingly. To help balance this potential bias and to bring some objectivity to the case studies with students, she used the strategy of triangulation (Berger, 2015). As explained in section 4.4.2, she developed and validated the quantitative ETAS, based on the previously validated MTAS scale. Furthermore, she chose a written questionnaire, where students had the option to be anonymous (and use a pseudonym), to attempt to limit the impact of her positionality. In a privately completely anonymous questionnaire, a participant can more freely express their opinion than in the context, for example, of an interview conducted by the researcher/facilitator whom the participants may not want to offend or where the researcher could potentially shy away from certain questions based on their experiences or interests (Berger, 2015).

The data collected from the ETAS Questionnaire could also have been affected by the researcher’s positionality. These tools relied on the use of self-reported data, which has limitations because participants may respond with a certain audience in mind and shapes their feedback accordingly and because individuals cannot objectively measure themselves. Self-reported feedback following interventions, however, is a common method for gathering data in the fields of educational and/or social research; it is one way, albeit imperfect, of assessing the impact, influence or effectiveness of an intervention (Cohen et al., 2011, p. 375). Moreover, this research aimed to measure concepts such as participants’ emotional engagement and self-confidence and beliefs; only the subject of study can know and assess how emotionally engaged and confident s/he feels or what they believe. Accordingly, the

researcher accepts the inherent yet unavoidable limitations of the necessity for people to self-report.

The choice to use self-reported feedback and other research methods, as the researcher has already articulated, coincide with and support her ontological and epistemological views (see section 1.3.2) and the social constructivist framework underpinning this research on several levels (see section 3.3). She takes a predominately subjectivist view of the social world and truth, emphasising the individual's role in creating his/her own reality. Therefore, self-reported data about one's engagement and confidence can and must be taken as truth because these are subjective and internal concepts. While one may lie or overstate (consciously or subconsciously) these concepts, there's no way for someone external to know that, so the option is to take participants' reported words as truths.

Furthermore, in terms analysing and reporting the data collected from the student case studies, the researcher analysed and presented the results, which her positionality may also have affected. As explained in 4.4, she used strategies such as coding schemas to try to bring a level of objectivity to the research. She also utilised the case studies with teachers, in which they reflect upon their impressions of their students' experiences in their classroom, to assist in bringing trustworthiness to the study. The teachers' perceptions of their students' engagement and confidence could support or contest the researcher's evaluation of the case studies with students.

Though a researcher's positionality affects all stages of the research process, it can often be beneficial in it, especially if s/he engages in reflexivity. The insider/outsider position of the researcher in this Ph.D. research, perhaps to led to more open, honest and willing participation of the students and teachers alike. The particular limitations of each case study are discussed in the relevant chapters.

4.7 Chapter Summary

This chapter began by clarifying the understandings of the key phenomena that were under investigation and measured in the case studies (students' attitudes, i.e. confidence and

engagement). It explained the researcher's understanding that these concepts are multifaceted, but also purported definitions utilised in this study. Thus, confidence is considered a self-perceived, evaluative measure of one's competence and ability to complete the task/goal; emotional engagement refers to students' feelings about the subject of English, inclusive of the skills, content, and activities as they exist in the classroom/space where English is studied; and behavioural engagement relates to participation and involvement in the learning activity and English classroom environment. It also explained that in this thesis, the word *attitudes* is used as an umbrella term and signifies students' general perceptions of their own feelings, participation, and levels of self-efficacy. Furthermore, this chapter highlighted the cyclical relationship among attitudes and achievement in educational contexts.

Following on, the chapter also provided conceptual understandings of the primary research approaches considered for investigating the research questions and addressing the research aims. It describes how and why a combination of case study and action research was used as the methodological approach. It described the research design, which consisted of three phases: Exploratory Case Study: Students, the Explanatory Case Study: Students, and the Exploratory Case Study: Teachers.

The chapter also described and provided a rationale for the mixed methods approach utilised in collecting quantitative and qualitative data. It explained that there is a lack of available quantitative tools in this area, and that a key aspect (and subsequent contribution) of this research was the development and validation of the ETAS tool. The chapter briefly described the data analysis process, but also explained that the subsequent chapters will explain in more detail the analysis of the quantitative data in the exploratory case study and the explanatory case study, as one impacted upon the other. Finally, the chapter explained how the ethical considerations of the study were addressed and the limitations of the chosen methodology.

Chapter 5: Exploratory Case Study: Students

5.1 Chapter Overview

This chapter explains in more detail: the context of the individual learning interventions that collectively formed the Exploratory Case Study: Students; the design of the various learning activities and projects in which students engaged; the data collection, analysis and results; and the conclusions made from this exploratory case study, which informed the design of the next phase – the Explanatory Case Study: Students. As explained in section 4.3, an exploratory case study can be used to pilot the learning intervention activities and research methods (i.e. the data collection tools and analysis procedures). Using what is learned from an exploratory case study, a researcher can make necessary modifications before implementing an explanatory case study, which investigates the main research questions. Thus, the Exploratory Case Study: Students had some of its own unique aims, or success criteria (McNiff, 2001):

1. To refine the learning activities and projects.

This aim included: making any necessary logistical changes to things like timing; adding necessary materials or scaffolds to the learning process; and/or testing that the technology utilised was functioning and appropriate for the projects.

2. To evaluate the data collection materials and analysis procedures.

The purpose here is to ensure that the questionnaires (a) were providing enough relevant data to help answer the research questions, (b) contained appropriately phrased questions so that the participants are clear about what is being asked of them, and (c) were as “objective” as possible (see section 4.4).

3. To preliminarily investigate how the Bridge21 approach is impacting students’ attitudes toward English.

A research aim was to develop a research-based pedagogical approach for effectively teaching new literacies in English. Therefore, if the exploratory case study (with the understanding that some of the activities or aspects of the learning intervention need modification) were to suggest improvements in student engagement and confidence, that would be a reason to continue the investigation to an explanatory case study.

5.2 Case Study Context

5.2.1 Logistics

In total, the Exploratory Case Study: Students included 6 different 1-day (approximately 5 hrs/day) learning interventions, which were implemented between November 2014 and January 2016. As explained in section 3.3, Bridge21 is a large-scale design-based research project; many students, schools, teachers, and administrators across Ireland (as well as some abroad) have connected with Bridge21 in the last ten years. As such, several of the learning interventions in the Exploratory Case Study: Students were *opportunistic* – some teachers had expressed interest in utilising the Bridge21 model in their English teaching and volunteered their classes to take part in the study. The researcher collaborated with administrators in the Bridge21 group to coordinate the logistics of the learning interventions – participants, locations, times, etc. For example, some members of the Bridge21 research team had pre-existing relationships with English teachers at a school in County Cork. Therefore, some of the learning interventions took place in Cork at a location near their school: Fota House, a Regency-style country house, which now serves as a museum to the public. The other interventions were conducted in the purpose-designed Bridge21 learning laboratory in Trinity College Dublin. A key aspect of this space is that it offers a setting for researchers to the trial, modify, and refine technology-mediated teaching and learning experiences (Lawlor et al., 2016). Therefore, it was a suitable and appropriate location for conducting the learning interventions that were a part of this exploratory case study. In these interventions, participants were gathered by a Bridge21 administrator, who emailed English teachers from various Bridge21 partner schools in Dublin, offering their students an opportunity to participate in the experience; teachers nominated their students to attend the learning interventions. These student participants also, for the purpose of creating their projects, briefly visited the National Gallery of Ireland, a short 100-metre-walk from the Bridge21 learning space (section 5.3 further explains this visit).

5.2.2 Participants

In total, n=241 students from 8 different schools participated in the 6 learning interventions that comprised the Exploratory Case Study: Students. There were 61 transition year students and 180 5th year students, so they ranged in age from 15-17. Of the 8 schools

involved (see Appendix D for a list of schools), 6 are located in County Dublin area and 2 are in County Cork. This sample includes both single sex and co-educational schools: 2 all-male schools, 4 all-female, and 2 co-educational schools. Most (6) of these schools were established by Christian Brothers or Sisters, and their Catholic ethos continues to underpin their educational frameworks. 1 school was founded in the Protestant tradition, and 1 school has both Platonian philosophy and Christian theology underpinning its ethos.

The students in this sample also differ from each other in terms of average family income, cultural/ethnic backgrounds, and rates of progression to third level education. For example, one of these schools is private, of a certain philosophical ethos, and located in a wealthy area of Dublin; most students from this school would progress (or be expected by their family and community to progress) to third level education. Another school is located in a working-class area of Dublin, has little access to resources including technology, and has a population of students that typically would not progress to third level. The other schools are somewhere in among this spectrum. Typical progression of the students to college among these schools also varies. In 2017, 1 school had 50-59% of graduates progress to college; 1 school had 60-69% of graduates progress to college; and 2 schools had 70-70% of graduates progress to college; and 4 schools had more than 90% of graduates progress to college (Irish Times, 2017).

In summary, this was a diverse group of student participants, including students of different socio-economic, racial, and ethnic backgrounds; accordingly, participants had varied access to technology in school and at home. It should be clarified, however, that while it is probable some students had learning and/or physical disabilities, at no point were those students identified to the researcher by themselves or their teachers. Furthermore, while it appeared that some students were English Language Learners, no data was collected on that point in the exploratory case study, and the researcher can estimate a small percentage of students were English Language Learners.

Of note, a large number of participants (180/241) came from one school, which is a female-only school; therefore, there was a majority of female participants in Exploratory Case Study: Students (224/241). These imbalances are not ideal; however, as previously stated,

these interventions were conducted within opportunistic, realistic settings: partnerships with currently practising teachers. As such, the researcher could not control, for example, the fact that these voluntary participants came from single-sex schools.

In terms of the teachers, their participation varied: some attended and took an observatory role, some more actively engaged and participated in the process, and some did not attend (there was no expectation for teachers to participate, yet they were always invited).

5.3 Design of the Learning Interventions and Tasks

5.3.1 Learning Objectives

The learning interventions designed for use in the Exploratory Case Study: Students were all structured around three key concepts: conventional literacy, new literacies, and culturally significant texts. In other words, the learning objectives of the activities all centred on meeting the aims of English education (see section 2.3).

Learning Objective 1: Conventional Literacy

As explained in section 3.2, the Irish leaving certificate English curriculum classifies language into “Five Styles”: aesthetic, argument, information, narrative, and persuasion. Thus, the conventional literacy learning objectives were for students to develop their abilities to comprehend these forms in varied contexts and compose original pieces, using these styles. This was also a key objective for several of the teachers who were involved in the Exploratory Case Study: Students – as they were teaching students in senior cycle, and they were preparing the students for the leaving certificate exam, the teachers were concerned that the activities were curricular-focused. Therefore, each of the activities was structured around one or more of the styles of language.

Learning Objective 2: New Literacies

The second learning objective was to develop new literacy skills (NCTE, 2013); these include:

- Develop proficiency and fluency with the tools of technology;

- Build intentional cross-cultural connections and relationships with others, so to pose and solve problems collaboratively and strengthen independent thought;
- Design and share information for global communities to meet a variety of purposes;
- Manage, analyze, and synthesize multiple streams of simultaneous information;
- Create, critique, analyze, and evaluate multimedia texts; and
- Attend to the ethical responsibilities required by these complex environments.

As previously argued (section 2.5), new literacies can be considered extensions of conventional literacy – in this case, the styles of language. Therefore, each project required students to engage in new literacies, with the aim of also developing at least one conventional skill. For example, the “language of information” involves reading and writing alpha-numeric textually-based language that is factually based; it can include newspaper articles, reports, historical documents, and biographies. The new literacies extend the language of information, as one now also needs to learn to: “Manage, analyze, and synthesize multiple streams of simultaneous information” (NCTE, 2013). Therefore, the project centred around the language of information is designed to help students develop the conventional and new literacy aspects of that style of language (see section 5.3.2 for project descriptions).

Learning Objective 3: Significant Cultural Texts

In the Exploratory Case Study: Students learning interventions, the overarching content covered – the significant cultural texts – was mostly chosen by the teachers who volunteered their students to participate, though the author also chose some related texts to include. For those studies which took place in Fota House, the content focused on the Regency House – its history (the building itself, the people who lived there, the day-to-day operations of maintaining a mansion house, and its role in the community), as well as its contemporary role (the house as a museum and the cost to the people/government of renovating and maintaining this house today). This house is a significant part of the heritage of the local community. The texts chosen for study were both primary sources (e.g. personal memoirs and functional documents) and secondary sources (opinion pieces in the newspapers about the cost to the Irish government of maintaining Regency-era mansion

houses). They were authentic examples of how the various styles of the languages are used in real-life situations.

For those studies that took place in Bridge21, the researcher generally had more influence in the choice of texts, yet she similarly utilised the local context to help determine the significant cultural literature of focus. The National Gallery of Ireland had recently (prior to the study) asked famous writers around the country to compose poetry, short stories, and narratives (fictional or biographical) inspired by works held in its collection; this endeavour resulted in the publication of *Lines of Vision: Irish Writers on Art* (McLean, 2014). These collections – the works of literature created by prominent Irish writers and the paintings held in high esteem in Irish culture – served as the significant cultural text. Like the written works related to Fota, this publication contained authentic examples of the various styles of language. Also like Fota, there was a culturally significant physical location (The National Gallery of Ireland and its contents) to which the literature being studied referred and to where students, as part of the learning activity, visited.

5.3.2 Project Descriptions

To help meet the learning objectives, three projects were developed for students to complete within the learning interventions (Table 5.1 provides an overview of the tasks). Of note, these tasks slightly varied due to the context of the study; as already acknowledged these studies were opportunistic, so the resources, access to technology, and amount of time available, for example, were not always the same. For example, one group of students had enough time to complete two or three projects, while others only had enough time to complete one project. In other cases, it meant that some students used computers to complete a task, while others used iPad tablets.

The design of these projects modifies and extends the types of projects that have long been a part of English education – e.g. storytelling; developing persuasive language skills through the analysis and creation of advertisement; and researching and debating. These similarities are intentional: as new literacies are considered extensions of conventional literacies, it was thought that developing and enhancing tasks that are already frequently used to develop

those conventional skills was a logical starting point. The design of the projects was also influenced by the types projects that scholars working to integrate new literacies in English education utilise and recommend (section 2.8.1). The author previously argued (2.8.1) that in viewing these studies collectively, the aspects of new literacies that can be engaging to students emerges; this includes collaboration, real audience/presentation, local, personal context, student-led learning, authenticity and reflection. Thus, these projects were designed to facilitate those elements of using new literacies that can make the process engaging for students. Finally, the projects were also influenced by the types of activities usually completed in the Core TY Bridge21 Programme, such as using technology to produce commercials/movies.

Though having several influences, these learning interventions and the projects completed by students were unique in their combined focus on new literacies, conventional literacy, and significant literature (curriculum content), as well as the use of the Bridge21 approach and activity model to complete them. This particular combination sets them apart from the ways these types of tasks have typically been utilised in English classrooms, and the way the Bridge21 model has been used in the Bridge21 laboratory.

Another key component to the design of the activities was to create projects that can be completed with technology that is commonly accessible (mobile devices, computers, digital cameras) and on diverse types of technology – making them easily adaptable in a variety of educational situations. In other words, whether a school has Apple iPads or Windows desktop computers, the projects could be completed. The projects also, as recommended in the Bridge21 approach, all only required one-to-two digital devices per team, encouraging more collaboration and peer-teaching of technology skills, as well as lowering a commonly cited barrier to integrating ICT: lack of access to resources (see section 2.7).

Table 5.1: Exploratory Case Study: Students – Learning Activities

Project	Digital Storytelling	Radio/Social Media Advertisements	Research & Debate
Conventional Literacy	Language of Narration and Aesthetic Language	Languages of Information & Persuasion	Languages of Information, Persuasion & Argument
New Literacy	Create, critique, analyse, and evaluate multimedia texts; Develop proficiency and fluency with the tools of technology; Solve problems collaboratively and strengthen independent thought	Manage, analyse, and synthesize multiple streams of simultaneous information; Design and share information for global communities to meet a variety of purposes; create multimedia texts	Manage, analyse, and synthesize multiple streams of simultaneous information; share information for global communities; Solve problems collaboratively and strengthen independent thought
Significant Text	The lives and stories of the people who lived in Fota House, OR the art and texts of the National Gallery	Factual information (historical and contemporary) about Fota House, OR the art and texts of the National Gallery	Factual Information on maintaining Fota House; opinion pieces related to the government funding these museums
Technology	Ipads: Shadowpuppet Edu Laptop/Desktop Computers: Windows Moviemaker	Ipads: Voice Recorder Computers: Audacity	Laptops/computers Ipads

5.3.2.1 Digital Storytelling

In this activity, students use art or images as inspiration to storyboard, script, and write short digital narratives. In their teams, they work to tell the “story” (creative or historically accurate) behind the images. In this process, they focus on identifying and using narrative and aesthetic language (conventional literacy skills), developing an understanding of how aesthetic language is used to enhance stories. The primary new literacy skills being developed are to create, critique, analyse, and evaluate multimedia texts, and in the process, they are also developing their technology fluency and ability to solve problems and complete tasks collaboratively. Though the significant cultural literature can be whatever the English teacher chooses, in these studies, it was the literature, artwork, and collection of historical photos related to either the National Gallery of Ireland or Fota House, two important Irish cultural institutions. This task can be completed on computers (e.g. with

Windows Moviemaker, Animoto, or iMovie) or mobile devices (e.g. with the ShadowPuppet Edu application) – essentially, any application that allows one to combine images and texts and record them as a story. There is a whole body of literature on the use of digital storytelling as a significant literacy practice (Benmayor, 2008; Sadik, 2008), which supports the use of digital storytelling for communicating personal stories. However, in this research, digital storytelling was considered one activity that can facilitate students’ development of both conventional and new literacy skills, as well as engagement with significant cultural texts. Figure 5.1 is a screen shot of one of the digital stories students created, based on works of art they found in the National Gallery. This narrative was created through a dialogue, putting a modern spin on the language; it told a sweet love story, contained appropriate music, and was humorous.

Figure 5.1: “Messaging in the Past”: Student-produced digital narrative



5.3.2.2 Radio/Social Media Advertisements

For this project, students create advertisements in which they persuade the audience to visit a particular cultural/heritage site (e.g. the National Gallery of Ireland or Fota House). If they choose, they can entice the audience with an event being held at one of the locations (e.g. the unveiling of a painting or a gala). In their teams, they first “investigate” the heritage site or work of art, gathering important information from internet resources to be included in the advertisements. In this process; they are focusing on the conventional literacy skills of the language of information combined with the new literacy skills of managing, analysing, and synthesising multiple streams of simultaneous information; they are also investigating

these significant cultural texts (of course, a teacher can insert whatever significant text is relevant and warrants research). After gathering the factual information, students are tasked with synthesising and presenting that information in the form of a persuasive radio advertisement – requiring them to use the languages of both persuasion and information. They also must consider how other aural modes or communication, like music and sound effects, can contribute to making an advertisement more appealing and interesting. This project can be completed on computers (e.g. with Audacity) or mobile devices (e.g. with a number of voice recording applications): essentially any application that allows one to combine voice and other sounds (music, effects, etc.). Through this project, they are also developing their new literacy skills of creating multimedia texts, technology fluency, and working collaboratively.

5.3.2.3 Research & Debate

This project requires participants to research a controversial topic related to a significant cultural text and synthesise an argument. In their teams, they first investigate a given topic (and a chosen or given side to that topic) online. In this way, they can practice developing the new literacy skills of managing, analysing, and synthesising multiple streams of simultaneous information. The conventional literacy skills of focus are the languages of information and argument, but they also find, evaluate and use information online to support their argument. Once students have formed their argument, they participate in a structured debate with specific time limits on argument presentation, rebuttals, and closing arguments – and with requirements that different students partake in each aspect of the debate. In the exploratory case studies, one question debated, for example, was “Should the Irish government pay to maintain heritage houses like Fota?” Through this project they are also developing the new literacy skill of sharing information for an audience to meet a variety of purposes. [Of note, depending on the logistics of the individual intervention, students were either given materials pre-selected by facilitators and/or found their own supporting evidence online.]

5.3.3 Learning Intervention: Using the Bridge21 Model

Each of the six learning interventions took place over the course of one school day and lasted about 4-5 hours. Depending on the group, location, and available resources, the tasks and warm-up activities which they completed differed slightly, but in each intervention, the elements of the Bridge21 teaching and learning approach (section 3.3) were utilised:

- project-based (see section 5.3.2);
- skills-development orientation (see section 5.3.1);
- technology-mediated (see section 5.3.2);
- facilitator and/or mentors (the number varied based on individual intervention, but on average, there was a 1 facilitator/mentor: 5 student ratio);
- team work (students were organised into teams of 4-5 by the facilitator);
- social learning protocols (generally, a more informal approach was taken where, for example, participants called mentors and facilitators by first name);
- learning space (though learning space varied, furniture, resources, and technology were always organised to facilitate teamwork); and
- reflection (occurred as the final step of the activity model – see following section).

Moreover, the Bridge21 activity model (see Appendix E for details) was utilised with each intervention:

- Set-up:
Students participate in ice-breakers (e.g. “Human Bingo”—see Appendix E.2) and are organised into teams. They determine their team leader and golden rules/principles for working together.
- Warm-up:
Next, students engage in a divergent thinking activity, with a question such as “How many things can you do with this painting?” They brainstorm with their teams for two minutes to come up with as many answers as possible. They share their answers and discuss the benefits of working in teams.

- Investigate:

In this adaption for English, this step involves a little more direct instruction than the typical Bridge21 experience would. First, the facilitator leads the whole group of students in a review or introduction to the “Styles of Language” with the aid of some presentation slides. Next, students work in their teams to identify the styles of language in excerpts (see Appendix E.1 slides) related to the literary content. The facilitator checks in with each group to ensure understanding before moving on.

From here, students engage in another warm-up activity, designed to prepare them for the main task. This step varied based on intervention. For example, groups created memes with images from the National Gallery; some used the Mematic application on the tablet, while others did this on paper. Others completed different warm-ups involving, for example, creating metaphors/similes or other figurative language based on their surrounding physical context.

Finally, in this stage, the main project is explained. A hand-out with written directions detailing specific expectations of the project is provided, and students are introduced to the technology available to use: 1-2 devices per team.

- Planning:

Students begin brainstorming for their project, figuring out what needs to be done to complete the project and deciding how they want to divide the individual tasks. Depending on the project, this phase often involves some online research to get facts about their subject(s), storyboarding, and script-writing.

- Create:

In this phase, students begin to put their plans into action. They collect more facts, take photos, and record video as necessary, and then compose and edit their projects.

- Present:
All members of each team stand up, introduce themselves, and present their project to the whole group. In the presentations, they answer questions about their individual contributions, team challenges and achievement, and how well they met the goals of the day. They may also answer some questions about their projects in regard, for example, to the inspiration for their creations.
- Reflect:
Finally, at the end of the session, teams complete a written reflection, answering questions such as:
 - How well did you work together?
 - What were some of your challenges and how did you handle them?
 - How well did you use the styles of language?

Appendix E contains a sample lesson plan, showing the structure of the day and how the key content was communicated to students, as well as some activity materials, which were utilised in the learning interventions.

5.4 Data Collection and Analysis

5.4.1 Quantitative Data

As explained in section 4.3, the quantitative ETAS tool was developed and validated as a part of this research; as such, the instrument was not finalised for the first few learning interventions (in those instances, it was used primarily to help gather information about the tool itself). The ETAS was finalised by the third (of six) learning interventions in the exploratory case study and was utilised as a pre- and post-intervention measure in the final four learning interventions. A total of 125 usable pre- and post- tests were collected during the exploratory case study (some additional questionnaires were collected, but were incomplete or illegible, and needed to be discarded). At the start of the learning interventions, students were asked to complete the pre-test, answering the questions based on their experience of English in general (see Appendix A). At the conclusion of the learning interventions, students were asked to complete the post-test, the same set of items, based

on their experience of learning English in the Bridge21 model. To reiterate, the ETAS contains 5 subscales, measuring 5 concepts: Behavioural Engagement in English (BE), Technology Confidence (TC), English Confidence (EC), Emotional Engagement in English (EE), and Attitude toward Learning English with Technology (ET). An average score is calculated for each subscale, for each participant; then their pre- and post- learning intervention scores are compared for changes, using statistical software.

To analyse the quantitative data, first, some tests were conducted to determine *normality* – if the data adhere to the standard normal distribution (Laerd Statistics, 2013). The results of these tests indicate which statistical test is appropriate to use in analysing data for significant changes in the group. Given the sample size (n=125), the Shapiro-Wilk test of normality is most appropriate to use (Laerd Statistics, 2013). The Shapiro-Wilk test revealed that the data was not normally distributed. Table 5.2 shows that every subscale has a significance level of <0.05, indicating that the data significantly deviate from the standard distribution (Laerd Statistics, 2013).

Table 5.2: Shapiro-Wilk Test of Normality

	Statistic	df	Sig.
BE Pre	.943	125	.000
BE post	.949	125	.000
TC Pre	.955	125	.000
TC post	.946	125	.000
EC Pre	.977	125	.034
EC post	.965	125	.003
EE Pre	.970	125	.008
EE post	.954	125	.000
ET pre	.969	125	.006
ET post	.919	125	.000

Though the data were not normally distributed, skewness and kurtosis of the data for each subscale were also accounted for in determining the normality of the data — and they were within acceptable standards of -/+ 2.0 to prove normal univariate distribution (George & Mallery, 2010) (see Table 5.3). Given these differing results about the normality of the data,

two statistical tests were performed – a parametric test and nonparametric test – to check for significant changes in the group.

Table 5.3: Skewness and Kurtosis of the data in each subscale

	Skewness	Kurtosis
BE Pre	-0.528	1.566
BE Post	-0.272	0.389
TC Pre	-0.592	0.173
TC Post	-0.717	0.312
EC Pre	-.152	0.217
EC Post	0.313	-0.335
EE pre	-0.288	-0.464
EE post	0.483	-0.108
ET pre	-0.410	0.307
ET post	-0.832	0.580

Reported in the results section (5.5) are the results of the parametric paired samples *t*-test, as this is a more robust test, and appropriate to use for this situation (De Winter & Dodou, 2010; Pallant, 2007). [The non-parametric Wilcoxon Signed-Rank test was conducted as an additional measure to assess significance, and confirmed the statistical significance demonstrated in the paired samples *t*-test and the effect sizes. Results of the test can be found in Appendix F.]

5.4.2 Qualitative Data

5.4.2.1 Qualitative Data Collection

As explained in section 4.4.3, the purpose of the post-intervention ETAS open-ended questions was to triangulate the data – to get a qualitative perspective on the research questions: the impact of the model on students’ engagement and confidence in English and their attitudes toward learning English with technology (see Appendix A.2—Final Post-Intervention ETAS Questionnaire to see the final version of the instrument). The following four questions were developed with that purpose:

1. How did you feel about the activities today?
2. What are 3 things you learned today?

3. Did you feel involved in the activities today?
4. How did you find using the technology for learning English?

These questions were developed using the theoretical underpinnings of the phenomena being measured (see section 4.2), other questionnaires (Lawlor et al., 2016), and with the guidance of Cohen et al. (2011) on avoiding pitfalls (see section 4.4). For example, the first question was designed to elicit more information about students' emotional engagement, and as such asked how they *felt* about the activities. The second question, asking about what students learned, aimed to provide insight into any changes in confidence, interpreting students' self-concept and self-perceived competence as a core component of confidence; additionally, it could provide insight to the "effectiveness" of the learning intervention and whether or not students believe they have learned what the instructors were aiming to teach the students. The third question aimed to gather more information about students' behavioural engagement by asking about their *involvement*. Finally, the last question tried to ask, in a straightforward and non-biased manner, what they thought about using the technology in English. Generally, the questions aimed to be: (1) open, to avoid biasing responses; (2) brief, to avoid questionnaire fatigue; and (3) phrased in student-friendly language, to avoid confusion (Cohen et al., 2011). Yet, one of the purposes of the exploratory case study also was to allow for the opportunity to trial questions and refine them as necessary prior to the explanatory case study.

In addition to the questions designed to provide a more complete picture, confirming (or not), any data from the quantitative ETAS, some additional questions were included with the purpose of gathering information that would help the researcher modify the activity design (logistically or otherwise) for subsequent interventions. These questions were: "Would you change anything for next time?" or "Was there anything too challenging or not challenging enough about the experience today? Please explain."

The post-intervention open questions were distributed at the end of the intervention, along with the ETAS quantitative scale – the open-ended questions on the back of the same piece of paper. Participants were instructed to complete the entire ETAS Questionnaire based on their experiences that day, as part of the learning intervention. However, not all questions

were completed by all students, as the questions varied slightly in each learning intervention as the content and context changed.

5.4.2.2 Qualitative Data Analysis

To approach the content analysis of the qualitative data, Ezzy's (2002, p. 83) guide, to reiterate from section 4.4.3.4, was followed:

- Start with a sample of texts (the units)
- Define the units of analysis (e.g. words, sentences)
- Define the categories (i.e. nodes) to be used for analysis
- Review the texts in order to code them and place them into categories
- Count and log the occurrences of words, codes, and categories

The questionnaires collected from the six learning interventions were all transcribed by the researcher; the data was organised by participant and question in an Excel spreadsheet (see sample in Appendix H.2) in order to perform the analysis. [In the process of transcribing, the data was read and re-read multiple times, a key step in qualitative data analysis (Cohen et al., 2011).]

After compiling the sample of text, the units of analysis were determined: a coding unit, the smallest element of material that can be analysed (Cohen et al., 2011, p. 565), was a single word, as the qualitative data was collected by questionnaires and a respondent could reply to a question with a single word. The word needed to be considered within the context of which it was used, but it alone was a unit. On the other hand, the largest unit of analysis, the *contextual unit* (Cohen et al., 2011, p. 565), was a few sentences.

Next, the researcher constructed the codes and nodes/categories. This process used elements of both directed content analysis and conventional content analysis. Given that the first purpose of this content analysis was driven by specific research questions, which were refined by pre-existing theory and prior research, a "deductive" (or structured), approach was taken whereby some categories and codes were predetermined (Hsieh & Shannon, 2005). These pre-determined codes related to the key concepts under investigation (namely confidence, engagement and English) and the "operational definitions" (Hsieh & Shannon, 2005, 1281) of these terms in the case study and data

analysis were derived from the theory (see Chapters 2 and 4). The researcher also developed a set of key words that would indicate the participants' expressions of these concepts to assist in the coding process and create consistency. Through the process of reading and rereading the data, the list of key words was modified and extended. Table 5.4 presents the initial set of codes, definitions, and key words, based on the research questions and theory.

Table 5.4: Pre-determined Codes for Content Analysis (Exploratory Case Study)

Node	Code	Description	Key Words
Engagement	Emotional engagement (Positive)	Positive feelings about content/activities/experience	Feel/felt...fun, enjoy, good, great, Interesting, liked, appreciate, respect
	Emotional engagement (Negative)	Negative feelings about content/activities/experience	Feel/felt... Boring, did not like
	Behavioural engagement (Positive)	Positive notions of one's participation in English	Participate, engage, involved, active
	Behavioural engagement (Negative)	Negative notions of one's participation in English	Boring, lazy, did not participate, others did work
Confidence	Confidence (positive)	Positive notions of one's confidence in English	More confident/confidence; learned
	Confidence (negative)	Negative notions of one's confidence in English	Less confident, unsure, do not understand
English subject content	English	The school subject of English as a whole	English subject/class
	Literary Content	Depended on learning intervention (e.g. Shakespeare's Macbeth or Yeats' poetry)	Read, comprehend, interpret, understand, learn about, and/or analyse text/literary figure/event
English skills	(New) Literacy skills (NCTE, 2013)	Create, critique, analyse, and evaluate multimedia texts; using ICT tools proficiently; manage, analyse, and synthesize multiple streams of simultaneous information	Present, share, create, read, write, communicate, speak in front of others, answer questions
	Styles of language (conventional literacy)	Understanding/using the styles of language	Styles of language, aesthetic, argument information, narrative, persuasion

Because the open-questions were also designed to provide more insight to the results of the quantitative portion of ETAS, and because the researcher was interested in identifying any additional emerging themes not directly sought through the research questions, a more “inductive” (or conventional) approach to developing codes was also used. In this situation, additional codes are “derived directly and inductively from the raw data... allowing the categories and names for categories to ‘flow from the data’ instead” (Moretti et al., 2011, p. 420). This process aims to allow the voice of the subjects to emerge, as well as concepts and themes not initially determined by the researchers. Hammersley and Atkinson (1983) suggest reading and re-reading the data to become familiar with it and note any patterns, themes, or interesting features or contradictions arising before deciding which codes to use in the analysis. And Weber (as cited in Cohen et al., 2011) suggests that in order to ensure reliability and to test the coding and categorisation, one should code small samples of the text and make modifications to the coding system where necessary (p. 567). Therefore, in coding text, these recommendations were implemented:

1. Read and re-read texts to become familiar with the data and note any apparent themes or inconsistencies.
2. Make additional codes and categories to account for these themes arising.
3. Revise the list of codes and categories.
4. Code a sample of the text to ensure reliability of the coding before completing the final round of coding.

Put more simply, an iterative process of developing and refining codes was undertaken to account for the majority of the text – so that almost every word was coded. This, however, was not akin to a grounded theory approach or constant comparison (Cohen et al., 2011) where the aim is to continue to modify the coding schema until every single coding unit is subsumed in the coding schema; in this case, only a few words/phrases overall did not seem to fit any of the categories, but were considered insignificant to the overall message of the respondent and the researcher felt reasonably confident that the essence of the participant’s ideas were coded and accounted for within the coding schema. Indeed, shortly after the first round of coding began, the necessity to look at an individual student’s responses holistically (rather than solely question by question) became clear. For example, a student’s response to question 2 often referred to something she said in question 1; by

looking at a student's responses collectively, the researcher aimed to ensure that an individual's perspective did not become fragmented – a key concern in qualitative data analysis (Cohen et al., 2011). This approach also resulted in a more realistic picture of the results; instead of reporting the number of times a particular idea was conveyed, the number of students who conveyed that idea were reported; in other words, if a student reported that the technology made the experience engaging and fun in two places on the questionnaire, that idea was only reported as once: one student.

Through the initial reading of the text and first attempt at coding, it also became clear that the original list of codes needed refinement. For example, behavioural and emotional engagement were only split into positive and negative, but several students reported mixed feelings on this topic, so a new code reflected this response, "mixed," was added. Table 5.5 displays the final list of codes which were developed for the exploratory case study. [See Appendix G for an earlier version of codes.]

After finalising the list of codes, the final round of coding – "marking the text with codes (labels) that describe that text" for the purposes of "examining, comparing, conceptualising and categorizing the data" (Cohen et al., 2011, p. 561) – all of the data from the exploratory study began. The researcher utilised the data analysis software package Nvivo to assist in this process, as programs like these "enable the researcher to use codes, memos, hypertext systems, selective retrieval, co-occurring codes, and to perform quantitative counts of qualitative data types" (Cohen et al., 2011, p. 543). Though some researchers suggest computer-assisted qualitative data analysis software can distance the researcher from the data, removing the human element and emphasising the computer analysis, many argue that these software packages can aid in adding validity, reliability, and/or trustworthiness to the study – and that the speed and functionality of these programs are not only benefits but that they can provide further insights to the data (Cohen et al., 2011, p. 543-545). Appendix H provides an example of the data from the exploratory case study and the codes that were ascribed to the text. After coding the data, Ezzy's (2002) final steps of counting and logging the occurrences of words, codes, and categories and performing statistical measures were taken to synthesise the results. The matrix coding function also facilitated the demonstration of relationships between codes.

The following section 5.5 presents the results, as they relate to the research questions and their influence on the design of the learning interventions/activities and data collection materials to be utilised in the explanatory case study.

Table 5.5: Final List of Codes for Exploratory Case Study

Node	Code	Description	Key Words
Emotional Engagement	Emotional engagement (Positive)	Positive feelings about content/activities/experience	Feel/felt...fun, enjoy, good, great, Interesting, liked, appreciate, respect
	Emotional engagement (Negative)	Negative feelings about content/activities/experience	Feel/felt... Boring, did not like
	Emotional engagement (Mix)	Mix of positive and negative feelings	Mix of positive and negative responses
Behavioural Engagement	Behavioural engagement (Positive)	Positive notions of one's participation in English	participate, engage, involved, active
	Behavioural engagement (Negative)	Negative notions of one's participation in English	Boring, lazy, did not participate, others did work
	Behavioural engagement (Mix)	A mix of positive and negative responses about one's participation	Mix of positive and negative responses
Confidence	Confidence (positive)	Positive notions of one's confidence in English	More confident/confidence;
	Confidence (negative)	Negative notions of one's confidence in English	Less confident, unsure, do not understand
	Confidence (Neutral)	No change in confidence, or a mix of pos & neg	Same, no different
Beliefs about learning	Learned	Student belief in learning a new concept or developing a skill	Learned, obtained, helped, understand, developed, made easier
English subject content	English subject	The school subject of English as a whole	English subject/class
	Literary Content	Depended on learning intervention (e.g. Shakespeare's Macbeth or Yeats' poetry)	understand, learn about, text/literary figure/event
English (literacy) skills	New literacies	New literacies skills and practices	make/edit films, digital stories, presentations, using ICT tools such as Ipads, applications, moviemaker, videos, cameras

	Styles of language (conventional literacy)	<i>How to</i> : understand/use the styles of language	Styles of language, aesthetic, argument information, narrative, persuasion
	Other conventional literacy skills	Engaging in literacy practices and developing literacy skills, <i>non-digital</i>	Read, comprehend, interpret, understand a text; Present, share, create, read, write, communicate, speak in front of others, answer questions
Technology	Learning with technology (positive)	Using technology to support English learning	Helps learning, makes it easier, makes it more fun
	Learning with technology (negative)	Using technology to support English learning	Makes learning harder, more difficult, distracting, frustrating,
Working with others	Collaboration	Students completing tasks and project together in collaborative groups	Teamwork, groups, working together
	Social aspect	Meeting new people and making friends through working together	New people, friends
Learning about Learning	Learning process	Discovery of a new way to learn, that there are multiple ways to learn something	New, different way, model, or method of learning, environment
	Self-discovery	Discovery of a personal interest, trait, preference, learning style, etc.	Realised/liked/learned...I like/enjoy/learn...
Novelty	Novelty	The novelty of the experience: new people, place, content, style of learning	New/different: people, style of learning, Shakespeare, Bridge21 experience
Valuable	Valuable	Belief that the experience was valuable and worthwhile	Worthwhile, valuable, helpful, beneficial, useful, use in the future, educational
	Not valuable	Belief that the experience was not valuable nor worthwhile	<i>Not</i> : valuable, helpful, beneficial, useful; waste of time
Fun/ Enjoyable	Fun	Expressions of fun and enjoyment related to experience, activities, tasks, etc.	Fun, enjoy, entertaining,
Task Feedback	Task	Comments related to the tasks or activities themselves – both positive and negative	Activity, task, exercises

5.5 Results

To reiterate, the Exploratory Case Study: Students aimed to (1) refine the learning activities and projects (2) develop and refine the data collection materials and analysis procedures, and (3) preliminarily examine how the author's adaptation of the Bridge21 model was impacting students' attitudes toward English.

This section (5.5) first presents the results from the data analysis by what they revealed in regard to the research questions (the impact on students' attitudes), and the following section (5.6) provides a thematic summary and discussion of these results. From the process of analysing the data, seeking to preliminarily answer the research questions, the researcher was able to determine the usefulness of the tools themselves and their ability to provide relevant, valuable feedback to the research questions. Though the ETAS Questionnaire provided some important and significant insights to the research questions, it was also revealed through the open-ended questions that this could be tweaked to gather more useful information (see section 5.7.1) [The quantitative portion of the ETAS was completed and validated for the learning interventions presented here]. Finally, the data analysis process also provided some useful feedback regarding the logistics of the learning interventions, activities and projects themselves (see sections 5.6.1 and 5.7.2).

Results of the ETAS quantitative and qualitative questionnaire are presented together. [To see the results from the ETAS quantitative data, presented as one whole table, see Appendix I.] Of note, according the paired samples *t*-test, there was an increase in means in every subscale of the ETAS, and all increases were significant at the <0.05 confidence interval, indicating the changes did not occur by random chance (Sullivan & Feinn, 2012). Another important measure reported throughout the results is the effect size of the change, which indicates the "magnitude of the difference" (Sullivan & Feinn, 2012, p. 279). Cohen's classification of effect sizes as small ($d = 0.2$), medium ($d = 0.5$), and large ($d = 0.8$) are widely used standards that provide a guide for reporting; however, they "should also be informed by context" as they don't take into account variables such as "the accuracy of the assessment instrument and the diversity of the study population" (Sullivan & Feinn, 2012, p. 280-281). Effect size can be calculated by dividing the standardised difference between the two means (pre- and post-test), by the standard deviation ($d = \text{mean difference}/\text{standard}$

deviation) (Sullivan & Feinn, 2012, p. 280). Though the increases reported here had small effect sizes (0.2 – 0.4), this is a typical effect size in educational interventions (Hill , Bloom, Black & Lipsey, 2008).

5.5.1 Engagement in English

5.5.1.1 Behavioural Engagement

According to the quantitative ETAS (n=125), there was a significant positive change in behavioural engagement, with a small effect size (see Table 5.6).

Table 5.6: Behavioural Engagement, Pre-Post Intervention (Exploratory Case Study). N=125.

Pre-test Mean	Post-test Mean	Change	P-value (sig)	Effect Size
3.84	3.97	+0.13	0.001	0.31

The ETAS questionnaire also contained one open-ended question directly related to this concept, which intended to elicit further relevant information: “Did you feel involved in the activities today?” In total, 99 students provided a response to this question, with 97 replying positively and 2 students replying negatively, which corresponds with the positive changes present in the quantitative portion of the tool. This question also provided some further insight to the reasons behind the positive response regarding students’ behaviour. Of the 97 students who replied positively, 71 provided more details. Collaboration was the most commonly given reason for feeling involved; 39 students (more than half of those providing reasons) specifically said that working in groups/teams and with other people made them feel involved. For example, the students said things such as “I felt actively involved because I was part of a team and we all listened to each other” and “I felt group work helped us take part”. Second to collaboration, the most common reason participants (n=22) felt involved was that the experience was interactive/active. For example, one student said, “The activities were very interactive and enjoyable, so you wanted to get involved,” and another said, “I liked how we were busy, did a lot of work.” These two reasons for positive behavioural engagement often seemed to occur concurrently; as one participant explained: “I felt actively involved. We worked in small groups and everybody had something to do.” Following collaboration and interactive/active activities, the third most commonly reported

reason (n=7 students) for feeling involved was that they found the experience enjoyable, fun, and/or interesting. Finally, 2 students explained they felt actively involved because they were working with their friends, and 1 student specifically said the model of learning made her feel involved. Two students reported negative behavioural engagement, explaining that they do not like group work because they end up doing all the work themselves.

5.5.1.2 Emotional Engagement

According to the quantitative ETAS (n=125), there was a significant positive change in emotional engagement, with a small effect size (Table 5.7)

Table 5.7: Emotional Engagement, Pre-Post Intervention (Exploratory Case Study). N=125.

Pre-test Mean	Post-test Mean	Change	P-value (sig)	Effect Size
3.67	3.86	+0.19	<0.001	0.29

The open-ended question directly related to this concept was: “How did you *feel* about the activities today?” In total, 125 students responded to this question, with 117 reporting positive feelings, 5 reporting negative feelings, and 3 reporting a mix. These results correlate with the positive change in mean demonstrated in the quantitative ETAS.

Notably, many students (n=78 of 125 responses, or 62%) specifically used words such as enjoy, fun, or interesting to describe the activities or some aspect of the experience. Several students responded with a simple one-word answer to the question of how they felt: “fun” or “enjoyable.” Often, respondents elaborated, offering additional reasons for their beliefs that something was fun (e.g. “The activities were enjoyable because we learned a lot in a fun way.”). Other participants replied by saying something such as: “It was a different way to learn rather than sitting in class with a book in front of you.” In this case, they provide a positive response to this question (the student learned, it was different, etc.), but do not use explicitly positive words. Table 5.8 displays the most commonly reported *reasons* for a positive response to this question. The other most commonly reported reasons for positive feelings were that they learned something and that they collaborated with their peers.

Table 5.8: Reported Reasons for Positive Feelings about the Activities* (n=125)

	Number of students	Percentage of students reporting reasons
Fun/enjoyable	78	62.4%
Learning (skills/content)	13	10.4%
New literacies	13	10.4%
Collaboration	11	8.8%
Novelty	8	6.4%
Positive BE	8	6.4%

* Some participants offered multiple reasons for a positive experience; accordingly, these numbers total to 131, representing the number of reasons rather than participants (125)

Of the five students who reported negative feelings, their responses were a mix of feeling bored by the activities or subject content, believing that they were not beneficial or helpful in their learning experience. Finally, the three participants who had mixed responses, found some aspects interesting and fun (e.g. using the technology) and other aspects boring (e.g. the subject content).

5.5.2 Confidence in English

According to the quantitative ETAS (n=125), there was a significant positive change in confidence in English, with a small effect size (see Table 5.9)

Table 5.9: Confidence, Pre-Post Intervention (Exploratory Case Study). N=125.

Pre-test Mean	Post-test Mean	Change	P-value (sig)	Effect Size
3.37	3.51	+0.14	0.002	0.31

The questionnaire asked students “What are three things you learned today?” which related to this concept of confidence insofar as self-concept and growth in self-perceived competence impact confidence (see section 4.2). 110 students replied to this question, some offering 1 thing they learned and others offering multiple (3-5 things). Table 5.10 displays the most common things they reported learning. In a case where a student said two or more of the same categories of things (e.g. I learned the language of narration and language of information), that response was coded and counted once as *style of language*. For further descriptions of each code, see section 5.4.2.2.

Table 5.10: Reported Learning (Exploratory Case Study) (n=125)

	Number of students	Percentage of students reporting learning
Styles of language	66	52.8%
Literary Content	64	51.2%
The Learning Process	35	28.0%
New literacies	30	24.0%
Other conventional literacy skills	21	16.8%
Collaboration	10	8.0%

5.5.2.1 Growth in Technology Confidence

Related to students' growth in English confidence, the quantitative ETAS demonstrated a significant positive change in technology confidence, with a small effect size (Table 6.18).

Table 5.11: Technology Confidence, Pre-Post Intervention (Exploratory Case Study). N=125.

Pre-test Mean	Post-test Mean	Change	P-value (sig)	Effect Size
3.61	3.72	+0.11	0.004	0.26 (small)

This result aligns with the fact that a number of students reported, in the open-ended questions, learning “new literacies” (which includes skills such as editing videos and using digital storytelling applications; see the list of code descriptions in section 5.4.2.2). Of note, the concept of technology confidence (TC), as its conceived in the quantitative ETAS, relates more to perceptions of competency in functionally/technically using ICT – which is only one aspect of new literacies (see 2.5). Yet, in order to partake in the new literacies, students also had to operate the ICT applications or hardware itself. Accordingly, in developing new literacies, some students also developed more technical skills, and vice versa.

5.5.3 Attitudes toward learning English with Technology

According to the quantitative ETAS (n=125), there was a significant positive change in attitude toward learning English with technology, with a small effect size (see Table 5.11)

Table 5.12: Attitude toward learning English with technology, Pre-Post Intervention (Exploratory Case Study). N=125.

Pre-test Mean	Post-test Mean	Change	P-value (sig)	Effect Size
3.39	3.66	+0.27	<0.001	0.40

The open-ended question directly related to this concept was: “How did you find using the technology for learning English?” In total, 111 students provided a response to this question, with 85 replying positively, 14 students replying negatively, and 12 students replying with a mixed response.

Of those who responded positively (n=85/110), the majority (n=47) replied with a brief reason: it was “fun” or made it “more enjoyable.” Several students (n=20) elaborated, saying that the technology “helped” in their learning of English; for example, one student said she found the technology “interesting, fun, easier to learn with” and another student said that using the technology was “worthwhile and helpful.” Several also students (n=12) reported an increased understanding of how technology could be used in learning: “I found using the technology great as it shows that there is more than one way to learn English.” Finally, a few students (n=5) reported that the *novelty* of using technology in English (formal education) made it fun: “I loved it as it was a new way to learn and extremely helpful.”

While most students reported positive feedback about using the technology, some (n=14) expressed some negative feelings. For most of these students, they provided only brief responses saying something like “I prefer not to use technology” or “I don’t like technology,” without elaborating why. A few students provided reasons: (n=3) thought it was hard or confusing; (n=2) said they found it boring; and (n=2) thought it was “pointless” or not “helpful” for the leaving certificate preparation.

Finally, some (n=12) reported mixed feelings about the experience of using technology. It seems that for most of these students, they enjoyed using the technology but would not necessarily want to use it in every English lesson (e.g.: “I liked it, but for long term I would have a mixture”). Other students expressed that while they liked using the technology, they

did not believe it was beneficial or useful in preparing them for the leaving certificate exam (e.g.: “I found it enjoyable, but we won't actually be using it for LC”).

5.6 Thematic Summary & Discussion

In some ways, the most significant result from the quantitative and qualitative data collected during the exploratory case study was simply that the Bridge21 approach to teaching new literacies in English generally had a positive impact on student engagement and confidence in English and attitude toward learning English with technology English: this gave reason to continue in the research cycle. The quantitative ETAS demonstrated statistically significant positive increases after participation in a one-day learning intervention in the specific areas of interest relevant to the research questions: emotional engagement in English; behavioural engagement in English; English confidence; and attitude toward learning English with technology. The qualitative data analysis supported and extended understanding related to these results. Though the data analysis demonstrated that the ETAS qualitative instrument could use modifications to provide more depth in understanding and addressing these problems (see 5.7.1), the results from the analysis of the available data provided some useful insight to the reasons behind the reported positive changes, and therefore some preliminary answers to the research questions. The following sections recap, summarise and contextualise the results (section 5.5) in terms of their significance in this study and contributions to understanding within the field. This section also demonstrates cyclical relationships among students’ behavioural engagement, emotional engagement, and confidence – aligning with the theoretical literature discussed in section 4.2.

5.6.1 The Social Constructivist Approach

5.6.1.1 The Significance of Collaboration

Across the questionnaire, collaboration was frequently reported (without directly being questioned about it) as contributing to students’ positive engagement – working together made the experience more fun, helpful, and beneficial to their learning. These results are in line with the socio-cultural perspective of literacy central to the New Literacies theoretical framework (Gee, 1996; Lankshear and Knobel, 2006; Street, 1984, 2003) underpinning this

research (see section 2.4), and the social constructivist approach (Vygotsky, 1980) underpinning the Bridge21 approach (Lawlor et al., 2018). As these literacy scholars contend, and this exploratory case study also highlights, the collaborative, participatory ethos of the new literacies enabled by technology make them particularly engaging (Knobel & Lankshear, 2014). Indeed, in response to open-ended questions about their behavioural and emotional engagement, participants most frequently specifically reported collaboration (n=50) as contributing to their positive engagement. Their sense of confidence was also positively impacted by working collaboratively: being able to share ideas, work together, ask questions of peers made them feel more confident in their work, skills, and/or knowledge.

While it was a minority of students, some (n=2) explicitly said that the requirement to work in teams had a different effect for them: because they perceived their team members as “doing nothing,” this led to negative attitudes.

5.6.1.2 Project-Based Approach

Through analysis of the data, it was clear that it was not simply the fact that students were working together in teams that led to the positive engagement and confidence, but also the projects which they were required to complete. Collaboration and project-based learning appeared to correlate; for example: “I felt actively involved. We worked in small groups and everybody had something to do.” When they were working on a task in groups and the task required that all team members participated in order to complete it within the allotted time, they felt more active and purposeful in their learning – and they enjoyed it more. This result aligns and supports the social constructivist theory (Vygotsky, 1980) which underpins the Bridge21 teaching and learning model (section 3.3), utilised in these interventions: through working collaboratively to complete a project, students felt more engaged and confident in the learning process—they learned with and from each other.

Additionally, this result suggests that for many of the students, the projects were designed appropriately. In fact, n=24 students directly commented on the tasks. N=17 students said that the time allotted was appropriate and there was enough to do for everyone to have to take an active role in completing the task, but not so much that they could not finish it. They expressed interest in the activities themselves, enjoyed working together in groups, and

appreciated the variety of the tasks. They like being kept “busy” and “active.” Some students (n=7) had criticism in regard to time: e.g.: we felt “short of time in some and a bit rushed.” Generally, it seemed they wanted enough time to complete the tasks *to their own high standards*: “I would love to have a little bit more time to create the ads and videos, to make them of an even higher quality.”

5.6.1.3 Value in the approach and projects

The notion that students were disappointed when they felt that they didn’t have enough time to complete projects to their own expectations speaks to another overarching theme in the feedback: participants generally found the experience valuable. Across the questionnaire, students (n=31) expressed that they found the experience “worthwhile,” “helpful,” “beneficial” or “valuable.” Often, this belief was expressed when students were explaining why they enjoyed the experience, participated, and/or felt involved (e.g.: “I found it an interesting way of learning and I thought it was very worthwhile”). Students perceived the experience as worthwhile, or not, in relation to either their personal development or to the extent which it helped them develop skills they need for school. When they believed they developed a deeper understanding of the styles of languages, methods of learning, or new technologies, their engagement also increased because they considered it beneficial to their lives and success in school.

Some students, however, viewed worthiness through the lens of preparing for the Leaving Certificate exam – a real and significant part of their lives. For example, while they acknowledged learning new technologies (and new literacies) and teamwork skills are important for their lives outside of school, they did not consider developing these skills a good use of their time because on the exam, they must work individually and hand-write. Their sense of value in education seemed intricately tied to test preparation.

5.6.2 The Learning Process

5.6.2.1 Intended Learning Outcomes

As explained in section 5.3.1, the learning interventions had multiple learning objectives: to develop students’ conventional literacy skills (styles of language), develop their new literacy skills, and enrich their understanding of culturally significant texts. The questionnaire did

not ask students to comment directly on each one of those learning objectives, but in the question “What are 3 things you learned today?” the most commonly reported things were related to those intended learning objectives: the literacy skills and the literary content. Moreover, many of them felt that the technology aided their learning or was helpful in the learning process. This is a significant result, given that research has revealed that a need of English teachers (and a potential barrier to teaching new literacies) is to understand how the new literacies/technology impact students’ engagement/confidence/attitudes, and the effects it can have on their learning (see section 2.7).

5.6.2.2 Learning about learning

Many students (n=47) also reported learning about the learning process, making either “discoveries” of new possible methods/styles for learning or realisations about themselves as learners. For example, several students (n=38) commented that they learned that there are multiple ways of learning English; as one participant said: “English does not have to be learned out of a book.” Other students (n=9) provided more self-reflective feedback, commenting, for example, that they discovered that they actually liked English and/or the content studied. Some also noted that they learned they were “good” at a particular English skill, such as debating. Comments such as these reflect the link between confidence and engagement in the theoretical literature (Bandura, 1977) – believing one has an aptitude for something can make the experience more enjoyable, and vice versa.

Two other ‘discoveries’ about learning that students frequently mentioned, and directly relevant to this research, were related to the use of teamwork and technology in the learning process. Several students expressed that they discovered that learning *can* happen when they work together in groups – and they learned more about how to work in a team. Moreover, they are seeing the value in learning to work with other people to complete projects, envisioning it as an important life skill. Given that new literacy skills revolve around the participation of multiple people, collaborating to create something and build deeper understanding (see section 2.5), this realisation about the importance of working together and improving one’s ability to work with others is a significant outcome of the learning interventions. Students expressed similar feedback in relation to the idea of learning (in general, and specifically English) with technology. Several students expressed both that they

now have a better understanding of how technology can help them in learning English or be used as a resource for learning (see 5.5.3). Given that several scholars have highlighted adolescents' lack of understanding that technology can be used as a resource for learning (Dwyer, 2012; Mills, 2010), this finding – which suggests that this Bridge21 approach to teaching new literacies can help students understand how technology can be used in the learning process – is also significant.

5.6.2.3 Enjoyment and Value in Learning

Another emerging theme was that students had fun while learning. In total 97 students (75%) specifically used the word “fun” or “enjoy” to describe some aspect of the learning intervention – the activities, the subject content, the style of learning, engaging in new literacies, or their experience of learning. Though this theme can be considered another aspect of positive emotional engagement, already detailed in section 5.5.1.2, the dominance of the usage of these particular words to describe their experience warranted acknowledgement. Generally, it is desirable for students to enjoy a learning experience, but some scholars (Newmann et al., 1992) argue it is necessary – that *fun* is an element that helps make tasks authentic, and helps engage students in the learning process. Indeed the Bridge21 approach to teaching new literacies in English helped engage students in the learning process because they were having *fun* while they learned; this result reflects Papert's (1998) idea of “hard fun” that is integral to the Bridge21 model (see section 3.1). Furthermore, students' feelings that the experience was fun also correlated with their beliefs that the experience was valuable (see 5.6.1.3), making the learning intervention worthy of their time and effort.

5.7 Limitations

The results from the exploratory case study regarding changes in student engagement and confidence are significantly positive, yet they have some limitations related to the context of the study and the data collection instruments. Some limitations were to be expected, as this exploratory case study intended to pilot activities and data collection tools. After identifying the limitations of the exploratory case study, the researcher aimed to address as

many of these as possible and make necessary changes before embarking upon the explanatory case study.

5.7.1 Data Collection Instruments

5.7.1.1 The ETAS Questionnaire

As explained in section 4.4, the quantitative ETAS, a 19-item Likert scale was created, modified, and validated in the preliminary stages of this phase of the research; the numbers reported in terms of changes in students' attitudes were gathered from the final, validated version of the ETAS and therefore can be considered "reliable" – dependable, consistent, and replicable (Cohen et al., 2011, p. 199).

The qualitative open-ended section of the ETAS Questionnaire, aiming to help interpret those changes reported quantitatively, however, needed some adjustment. An overarching observation was that the questions did not elicit enough detail or elaboration, and therefore provided only limited further understanding to the quantitative data collected. For example, all 125 participants responded to the question, "How did you feel about the activities today?" However, only 56 students provided reasons for *why* something was "good" or "fun" (or not). Thus, the more detailed qualitative information available for content analysis represented only a portion of those students who participated.

Furthermore, it was determined that some of the questions needed minor but potentially significant modifications to their phrasing. For example, students were asked "What are 3 things you learned today?" which is a question that is typically used after a Bridge21 learning experience (Lawlor et al., 2016). Upon closer examination, it was determined that this question does not fully comply with recommendations for qualitative question writing (Cohen et al., 2011). First, it implies that a student learned and second that s/he learned at least, or at most, three things. Students may feel that they learned nothing or many "things" – or that what they learned was not a "thing." Another question, "Did you feel involved today?" (aiming to elicit more information about students' behavioural engagement) also proved somewhat problematic, as it did not ask about their behavioural engagement in *English* specifically. Moreover, the questionnaire did not contain a question specifically asking about their confidence; it asked about what they learned (one concept related to

confidence). This omission made it challenging to further interpret the changes reported in confidence in English.

Finally, the content analysis revealed that the data would be more robust and useful if students were asked a few questions about their experiences of using technology in English prior to the intervention. As the pre-intervention ETAS revealed that many students were “unsure” about their attitudes toward learning English with technology, it was thought that it would be useful to know if that was from lack of experience, understanding, or otherwise.

These shortcomings in the questionnaire used in the Exploratory Case Study: Students were addressed and questions were modified for the Explanatory Case Study: Students. Changes made to the questionnaires (pre- and post-) are explained in Chapters 6.2 and 6.4.

5.7.1.2 Self-reported Data

Another limitation to this data, previously discussed in section 4.6, is that the data are all collected through self-reported means. To reiterate an important point previously argued, while there are always flaws in one’s ability to assess oneself, certain concepts like confidence and emotional engagement can realistically only be self-reported: another person cannot decide how engaged someone else feels.

In terms of the learning reported, there are limitations in that students’ knowledge or skills were not externally assessed, but self-reported. However, it was beyond the scope of this study to “test” students’ skills or knowledge. Logistically, there was neither the time nor resources to pre- and post-test students’ literacy skills (conventional or new) or subject content knowledge. Moreover, in terms of assessing new literacy skills, this is a subject of much debate; internationally, educators are trying to determine how best to assess 21st century skills and/or new literacy skills (European Commission, 2012; Geisinger, 2016; Griffin, Care & McGaw, 2012; NCTE, 2013). Moreover, this research was more concerned with students’ own engagement and confidence in English, envisioning improvements in those areas as significant goals in and of themselves – in addition to their connection to achievement in many areas, not just test scores.

5.7.2 Learning interventions

The results regarding student engagement and confidence are also limited by the learning interventions themselves – the participants, contexts, and subject content studied – as these were somewhat different from a typical second-level English school classroom.

5.7.2.1 Participants

Firstly, and already acknowledged, there was a significant gender imbalance in terms of the student participants in the study. Of the 241 participants involved in the learning interventions, 180 were female. In terms of the 125 ETAS Questionnaires collected and analysed, 110 were completed by females, and only 15 were completed by males. Clearly, this limits the results of the data collected, potentially skewing it: perhaps the significance or effect size would be different if more males were a part of the study. Though it may be the same, it's challenging to know for certain. Considering, however, that this phase was used primarily to pilot and refine learning activities/projects and data collection materials, and to garner a “general sense” of the impact on students' engagement and confidence, the female-dominated sample probably did not hinder this process. For example, the functionality of the technology used in the activities and the clarity/usefulness of the questionnaires were not affected by the genders of the participants. However, the results related to students' feelings about English and/or learning English with technology could potentially be biased.

The other participants in the study were actually the teachers/facilitators/mentors. In each session, as consistent with the Bridge21 model and due to the collaboration with teachers, there was frequently a ratio of 5 students: 1 teacher/mentor/facilitator. While the students did not write much about this in their questionnaires, this extra attention (as compared to the typical ratio of 25-30 students: 1 teacher in an English classroom) could have also contributed to reported positive attitudes or learning. Moreover, as explained in section 4.6, the researcher was also the facilitator in these learning interventions; her personal character and professional background, as well as personality and positionality, likely had an impact on the students' experiences – their level of engagement, enjoyment, sense of learning, etc (Berger, 2015; Skinner & Belmont, 1993). Though no students directly reported any thoughts or feelings about the facilitator, the data collection instruments did not ask

them to what extent she impacted their experience, thus making it difficult to determine how much her role affected this experience.

5.7.2.2 Context and Content

Another limitation to the results revolves around the physical spaces and contexts in which the learning interventions were conducted. As already disclosed, this limitation is the result of the opportunistic nature of the exploratory study learning interventions. Because the researcher partnered with teachers keen to involve their students in a Bridge21 and English learning experience, the learning interventions took place in outside-of-school contexts: Fota House, Bridge21 and The National Gallery of Ireland; these are also beautiful spaces to explore and walk around. They were also new to many of the students, so there was a novelty factor. While only a few students remarked on these spaces specifically and how they contributed to their feelings of enjoyment, these unusual and different learning spaces may have (consciously and subconsciously) contributed to positive senses of engagement.

Furthermore, with the aim of teaching students about the culturally significant texts related to these beautiful spaces, rich with Irish culture and heritage, the literary subject content studied differed slightly from the typical English class. The texts, while significant to Ireland may have also provided a certain amount of novelty, which could have positively influenced their emotional engagement. Alternatively, some students may have found these texts boring; perhaps in their English classes in school, they have the opportunity to study more diverse, contemporary texts that they consider more relevant to their lives.

Of note, in the questionnaire, some students did provide direct feedback on the design of the learning intervention: the model for learning, the activities, and other logistics (e.g. time, space, etc). They were asked: "Would you change anything for next time?" or "Was there anything too challenging or not challenging enough about the experience today? Please explain." Most students provided very basic responses: "No, it was fine" or "I thought it was good the way it was." Some students were more enthusiastic in their conviction about the positive structure of the learning intervention and task (e.g.: "I would keep everything more or less the same. Everything was arranged perfectly in a way. I enjoyed it

so there's no need to change anything"). Some students (n=7) had criticism regarding time: e.g.: "[we felt] short of time in some and a bit rushed." Other students (n=17), however, felt that the time allotted was appropriate: there was enough to do for everyone to have an active role in completing the task, and enough time to finish it. They expressed interest in the activities themselves, enjoyed working together in groups, and appreciated the variety of the tasks. They like being kept "busy" and "active."

Finally, the context of each learning intervention was not the same. As previously disclosed, due to the nature of these opportunities, the content, technology, number of participants and activities themselves varied slightly. While the Bridge21 approach and activity model were consistently used, it must be acknowledged that these differences existed.

5.8 Chapter Summary

This purpose of this chapter was to explain the context of the individual learning interventions that collectively formed the exploratory case study; the design of the various learning activities and projects in which students engaged; the data collection, analysis and results; and the conclusions made from this exploratory case study, which informed the design of the explanatory case study. Perhaps the most important result from the exploratory case study, put simply, was that there was enough evidence that the Bridge21 approach to teaching new literacies was having a positive impact on the majority of students in terms of their attitudes toward English and learning English with technology; these results gave cause to continue in the action research cycle. From this exploratory case study, the researcher also learned important information regarding the data collection tools, design of the learning intervention and design of the projects. Through some feedback from students and personal reflection, she made modifications (described in the subsequent chapter) before implementing the explanatory case study.

Chapter 6: Explanatory Case Study: Students

6.1 Chapter Overview and Rationale

As explained in section 4.3.3, an explanatory case typically is used to describe phenomena, explain cause and effect, and/or advance theory (Mill et al., 2009). Aiming to examine and explain conditions, an explanatory case study can achieve greater depth of understanding about phenomena under investigation (Yin, 2011). Integrating important information regarding activities and data collection tools gathered in the Exploratory Case Study: Students, the researcher designed a one-school-week long learning intervention to be conducted with 4 different groups of 16-20 students (total n=73). This explanatory case study, inclusive of these 4 *identically-designed* case studies, aimed to help answer the student-focused research questions: the impact of the Bridge21 model on students' attitudes (engagement and confidence) toward English and toward learning English with technology. This explanatory case study was also used to analyse the impact on individual students in more depth and to compare these impacts among groups of students – determining if there were differences based on their pre-existing attitudes toward English. This chapter explains in more detail: the context and rationale of the four learning interventions that collectively formed the Explanatory Case Study: Students; the design of the various learning activities and projects in which students engaged; and the data collection, analysis and results. These results are discussed in light of the literature and conclusions are drawn to help answer the research questions. The limitations of the Explanatory Case Study: Students are also discussed, and future research is suggested.

6.2 Case Study Context

6.2.1 Logistics

In total, this explanatory case study included four *identically-designed* 5-day-long (approximately 5 hrs/day) learning interventions, with 16-20 students per intervention (total n=73), which were implemented between July and November 2016. In these learning interventions, students studied Shakespeare, the styles of language, and new literacies (the particulars of the learning intervention activity designs are discussed in section 6.3). The

researcher collaborated with administrators in the Bridge21 group to coordinate the logistics of the learning interventions – locations, times, and participants.

For the following reasons, it was determined that these interventions would be conducted in the Bridge21 learning laboratory. First, the researcher needed a space to implement the learning intervention herself, as the instructor; as she was not currently teaching full-time in a school, this was the best way to access groups of students for a sufficiently long period of time (approximately 20 hours of teaching and learning). It was necessary for the researcher to conduct the learning interventions, as this approach was her adaptation of the Bridge21 model for teaching and learning, and she designed the lesson plans, activities, and resources; therefore, she could implement this particular approach in these learning interventions, as originally conceived, and evaluate its impact.

Additionally, the learning interventions were held in the Bridge21 learning laboratory because they were designed to build upon the structure of the typical and historically successful Bridge21 Transition Year learning experience (Lawlor et al., 2018), which has been a staple of the Bridge21 programme for years (see section 3.3). This multi-day structure of the Bridge21 experience allows more time and opportunities for students to build working relationships with their team members and to immerse themselves in the subject content being studied, as they complete several different projects together. It was thought that this approach (rather than the one-day interventions of the exploratory case study) could provide further insight into the impact of using this Bridge21 approach to teach new literacies in English.

Though the Bridge21 space itself and open structure of the day is quite different from a typical second-level school in Ireland (which typically is divided into multiple 35-60 minute periods), the researcher made other efforts to create an English education environment and to keep it similar to the atmosphere of a typical second-level classroom. As she had more control over some of the logistics of these learning interventions (as compared to the opportunistic interventions of the exploratory case studies), she chose very common English subject literary content (Shakespeare) and skills (the styles of language) – also addressing a limitation of the exploratory case study. Moreover, in contrast to the typical Bridge21

experience in which mentors are available to work with the teams of students, she was the only teacher (there was one assistant available to help with the supervision of students). Because the researcher was aiming to evaluate an approach that teachers could use in their practice, it was important that the ratio of teacher to students and that the subject content were more typical of an English education school-based environment.

6.2.2 Participants

In total, n=73 students from 6 different Dublin-based schools participated in the 4 learning interventions that comprise the explanatory case study. They were all transition year students, ranging in age from 15-17. There were n=42 female participants and n=31 male participants; this closer balance of female and male students addressed a limitation of the exploratory case study. Participants were gathered with the assistance of a Bridge21 administrator, who emailed English teachers from various Bridge21 partner schools, offering their students an opportunity to participate in the experience; students volunteered and/or were nominated by their teachers to attend. [See Appendix J for a list of schools.]

This group of 6 schools includes both single sex and co-educational schools: 2 all-male schools, 3 all-female, and 1 co-educational school. All of these schools were established by Christian Brothers or Sisters, and their Catholic ethos continues to underpin their educational frameworks. These schools are all located in mostly working class/middle class areas of Dublin, yet typical progression of the students to college (third level) among these schools varies. In 2017, 3 schools had 50-59% of graduates progress to college; 1 school had 60-69% of graduates progress to college; and 2 schools had 70-70% of graduates progress to college (Irish Times, 2017).

Integrating what was learned from the Exploratory Case Study: Students, this explanatory case study also included some open-ended questions on the pre-intervention ETAS Questionnaire, which provided more insight to the individual student participants. These questions aimed to gather additional demographics, as well as information about students' pre-existing attitudes toward English, their prior experience with the subject content to be covered in the learning intervention, and their experience of using technology in English in school. The following questions were asked:

- What is your racial/ethnic background?
- What language(s) do you speak at home?
- How do you feel about your English classes in school? Why?
- Do you find English classes engaging? Why/why not?
- How confident are you in English? Why do you feel that way?
- In what ways do you usually use technology for English class? Do you like using technology for English? Why/why not?
- Have you studied a Shakespearean play before? If so, which one(s)? Did you enjoy it? Why or why not?
- Have you studied the "styles of language" before? If so, do you remember what they are?

From this list of questions, an overview of the population of students and their experience with technology and English has been drawn. Essentially, this was a diverse sample of participants, which included students of different racial and ethnic backgrounds; students who also speak multiple languages at home; and students with varied attitudes toward and experiences with English and learning English with technology.

49 students (67%) identified as White-Irish, while 24 (33%) reported their ethnic/cultural background to be something other than White-Irish, including Asian, European, and African backgrounds. As compared to the current general population in Ireland, this is a more racially/ethnically diverse sample – according to the Central Statistics Office (CSO), 82% of people usually residing in Ireland identify as White Irish, and 18% report something other than White-Irish (2017). Moreover, in this sample of students, most reported speaking English at home, but 11 students (15%) reported speaking an additional language at home; these were mostly Asian or other European languages.

Generally, these open-ended questions about their feelings and confidence in English aligned with the results of the pre-intervention quantitative ETAS results. Overall, most students had positive or mixed feelings about English, which reflects the average “moderately high” attitudes reported in the emotional engagement (3.94) and behavioural engagement subscales (3.96). Some students reported finding their classes quite boring,

while others said they had “brilliant” teachers who made it fun. They believed their English classes could be engaging (or not) depending on the teacher, topic, style of teaching/learning, or activity. They were a generally confident group, as well, averaging a moderately high level of confidence (3.90 on the ETAS subscale). Their responses to the open-ended question about confidence confirmed this, with a majority of students reporting reasonably high levels of confidence; some students, however, were not confident, explaining that English is a challenging subject.

In terms of learning English with technology, about 12% said they never use technology in English. Others explained that their teachers use technology such as the whiteboard or projector to give notes and/or show videos. Some students reported that they, themselves, use technology in English in the following ways:

- To write essays with word processing software
- To access notes about English literature online
- To upload homework

Of note here, only a few of the students reported engaging in any new literacies enabled by technology. Of the 73 students, 5 reported using technology in English to do things such as create films/videos, compose digital presentations, or conduct research online. Only a few students commented on their feelings about the technology, which were mixed. Some students reported really enjoying it, finding that it makes English more interesting and fun, while others said they do not like using computers/technology in English without giving further details. Moreover, in the subscale, attitude toward learning English with technology (ET), students reported the lowest average attitude (3.58 – moderate), and a notably high percentage of students (22, or 30%) had negative/neutral attitudes (see Appendix M for a list of the average pre-intervention ETAS scores).

Students were also asked about their experience with the literary content and conventional literacy skills. Almost all the students had studied one Shakespearean play before (*The Merchant of Venice* or *Romeo and Juliet*), usually as part of their Junior Cycle curriculum and in preparation for the Junior Certificate exam; 12% of participants had never studied Shakespeare before. For those who had studied a Shakespearean play, their reported

feelings were also mixed, with some saying that they enjoyed it and others stating that they did not, frequently finding the language too challenging or the way they learned it “boring.” In terms of their conventional literacy skills, almost no students reported learning “the styles of language” though they expressed familiarity with the individual styles that comprise the group. For example, they had previously studied elements of persuasion and narrative, but had not been introduced to the “style of language” as a collective concept.

In summary, this was a relatively diverse group of student participants, coming from different cultural backgrounds, though they were all currently in Dublin schools. They had moderately high levels of engagement and confidence in their English classes, and mix of feelings about using technology in English. Most of them had never been to Bridge21 before, though a few reported having participated in a Bridge21 experience either at their school or in the Bridge21 learning space.

Of note, no teachers participated in the learning interventions beyond their role of coordinating with Bridge21 administrators. Though they were invited and welcome, they did not attend.

6.3 Learning Intervention and Task Design

6.3.1 Learning Objectives

As in the exploratory case study, the projects/activities in which students participated were all designed around three key learning concepts: conventional literacy, new literacies, and culturally significant texts. The multi-day structure of the explanatory case study, however, allowed for a deeper focus on each objective. Each day and its activities/final project were primarily centred around one style of language and corresponding new literacy skills. The first four days were (1) narrative, (2) information, (3) argument & persuasion (these two styles have much overlap) and (4) aesthetic. Day 5 of the learning intervention was a wrap-up day in which students reviewed what they had learned over the course of the week and created multimodal projects to present their ideas; they also completed the ETAS questionnaires.

William Shakespeare's *Macbeth* and texts related to Shakespeare/*Macbeth* were chosen as the significant cultural literature for the following reasons. First, the playwright and his works have had impact on the cultures of English-speaking people worldwide. Hundreds of Shakespearean theatre companies still exist, film versions (or modern film adaptations of his plays) are continually being produced, and people across the globe, in various educational environments, still study his works. Second, this choice aimed to address a limitation of the exploratory case study. Though the texts studied in the exploratory case study were culturally significant for the local audience of students, their applicability to students of English elsewhere and their teachers was limited. Shakespeare and his plays/poetry are required content, and have traditionally been, for most second-level students studying English, in Ireland and internationally. Because the researcher hoped to conduct research that can influence and help other English teachers, choosing a topic that many must teach was logical. Shakespeare's works are "quintessential" English subject curricula; they are also generally considered challenging, sophisticated works of literature worthy of study. Finally, some students in the exploratory case study believed the activities were not valuable because they could not see how they helped them prepare them for leaving certificate; Shakespeare is always a part of the Junior or Leaving Certificate exam, so this choice to study his works also aimed to help student participants see the experience as valuable or relevant to this aspect of their educational experience.

The researcher chose *Macbeth* because she had familiarity with teaching the play from her experience in the classroom fulltime. Furthermore, this play is frequently used for the Leaving Certificate exam: every few years teachers in Ireland are required or have the option to teach *Macbeth* to their students at ordinary or higher level English. The play itself also contains many examples of the various styles of language. The researcher gathered additional texts (e.g. an encyclopaedia entry, op-ed newspaper articles) related to Shakespeare or *Macbeth* to represent the other styles of language (Appendix K contains sample materials).

6.3.2 Descriptions of Projects

To help meet the learning objectives, four projects were developed for students to complete within the learning intervention (Table 6.1 provides an overview of the tasks),

which were extensions and modifications of those projects created for the exploratory case study, integrating what was learned from that study. As section 5.6 explains, many of the students reported positive feedback regarding the design of the activities and projects themselves, stating that they found them engaging and appropriately challenging, with the right amount of time allotted. Thus, changes were made to fit the new subject content and to provide a more in-depth focus on the complexities of each style of language. For each of the four learning interventions, the same projects were completed in the same order. These projects were also designed to build upon one another, as in a traditional teaching 'unit': the content and skills learned from the first day helped to prepare students to complete the tasks the second day and subsequent days. Presented in Table 6.1 is a general overview of the week and the general outlines of the projects. Appendix K provides some sample lesson plans and corresponding teaching materials. These resources were also shared with other educators, as Chapter 7 explains.

6.3.2.1 Digital Storytelling: Summarising Shakespeare

Expanding the digital storytelling activity developed for the exploratory case study, this activity involves using digital story telling software to summarise a scene from a Shakespearean play, choosing key lines, finding and attaching corresponding images, and adding sound effects/music. To help prepare them to complete this task, students participate in several warm-up activities. First, they create memes (using the Mematic application on the Ipad) in which they are given a few key lines from *Macbeth* Act 1, Scene 3 (1.3) and have to find images to accompany those words in order to create memes. Then, they review and develop conventional literacy skills by reading a summary of the first two scenes of the play together with their team members and identifying aspects of narrative and aesthetic language. After checking in with the facilitator, they move on to reading the full scene in Shakespeare's original language together in groups, and the facilitator checks in for comprehension and to answer questions. Then, students summarise *Macbeth* 1.3 by selecting the 10-15 most important lines. They find images and sounds to accompany each line and combine them together into a digital narrative. They use the original lines (not a paraphrase/modernised language), and through these key lines, the plot should be clear. The primary new literacy skills being developed are to create, critique, analyse, and evaluate multimedia texts, but in the process, they are also developing their technology fluency and

ability to solve problems and complete tasks collaboratively. This activity could work for a variety of plays, novels or other texts. This activity was completed on iPads, using the ShadowPuppet Edu application, but it can also be completed on a computer, using any application that allows one to combine images and texts and record them as a story (e.g. Windows Moviemaker, Animoto, or iMovie).

Table 6.1: Explanatory Case Study Learning Intervention Overview

Day	1	2	3	4	5
Project	Digital Storytelling (summarising <i>Macbeth</i>)	Online research & presentation	Debate and Ted Talk Videos	Modern <i>Macbeth</i> Films	“What we learned” multimedia presentations
Conventional Literacy	Language of Narration (& aesthetic)	Languages of Information	Languages of Persuasion & Argument	Aesthetic Language	All styles
New Literacies	Create, critique, analyse, and evaluate multimedia texts; Proficiency with technology	Manage, analyse, and synthesize multiple streams of information; attend to ethical responsibilities of complex digital environments	Manage, analyse, and synthesize multiple streams of simultaneous information; share information for global communities; Build cross-cultural relationships to solve problems collaboratively	Create, critique, analyse, and evaluate multimedia texts; Build cross-cultural relationships to solve problems collaboratively; Proficiency with technology	Create, critique, analyse, and evaluate multimedia texts; Manage, analyse, and synthesize multiple streams of information
Significant Text	<i>Macbeth</i> - Scene 1.3	Shakespeare biographical & <i>Macbeth</i> Background; the 'curse' of <i>Macbeth</i>	Op-ed articles about teaching Shakespeare (provided by instructor & self-selected)	<i>Macbeth</i> - Scene 1.5	Recap of texts from the week
Technology	Ipads: Shadow-puppet Edu	Computers/ Tablets with internet access and Google Slides	Ipads: iMovie OR Cameras & Computers: Windows MovieMaker	Ipads: iMovie OR Cameras & Computers: Windows MovieMaker	Tablets or Computers

6.3.2.2 Online Research and Multimedia Presentations

This activity expands the online research portions of the “Radio/Social Media Advertisements” and “Research and Debate” activities of the exploratory case study, providing a more in-depth focus on developing the new literacy skills of identifying, analysing, synthesising and organising information from valid, reliable resources online. For this project, participants create multimedia, oral presentations on the origin(s) of the famous “curse” of *Macbeth*³ and the sources they use to create the presentation. First, students read, analyse and identify elements of the language of information in sources provided by the facilitator. These sources include copies of encyclopaedia entries about William Shakespeare, the person, and his play *Macbeth*. Next, students are guided in a review/overview of how to find reliable/trustworthy sources online. Then, in their teams, they investigate the curse of *Macbeth* and analyse sources for reliability using the guiding form provided. In this process, they are developing the conventional literacy skills of identifying, comprehending, and reporting in the language of information – combined with the new literacy skills of managing, analysing, and synthesising multiple streams of simultaneous information. They are also investigating these significant cultural texts – learning about the life of one of the most influential English writers and the historical and mythical background to one of his most renowned plays. After gathering available information online, students synthesise and present that information in the form of a multimedia presentation – requiring them to use the language of information. In completing this presentation, they also consider how various modes of communication, such as colours, graphics and images, can contribute to or hinder communication of ideas. In this presentation, they report their findings, as well as the sources they used to gather information – how they were selected and why.

6.3.2.3 Research & Debate and TED Talk Video

The central question in this lesson is: Should Shakespeare be taught in school? Ultimately, students create a video in the style of a TED talk, persuading the Department of Education

³ There is a common superstition, arising from some tragic events, which occurred during productions of *Macbeth*, that the play is cursed. It’s thought that if one says the name of the play (“Macbeth”) inside a theatre, the speaker and/or the production of the play itself will be “cursed.” Accordingly, the play has several euphemisms, such as the “The Scottish Play” (French, 2016).

and Skills (DES) to keep/remove Shakespeare from the leaving certificate syllabus. A “TED Talk” refers to the “short, powerful talks” associated with the a “nonprofit devoted to spreading ideas,” TED (Technology-Entertainment-Design), and its conferences (TED). These talks have risen in popularity and now are now widely and freely available through various web-based platforms such as youtube. To prepare to make these videos, students first read op-ed newspaper articles, one representing each side of this argument; these articles were written by two U.S.-based teachers and published in *The Washington Post*. While reading these, they develop their conventional literacy skills of analysing the use of the languages of argument and persuasion: the facilitator guides them in identifying the use of common persuasive techniques. These articles also help provoke ideas, and help prepare students to participate in a brief debate and discussion on the topic. They watch an effective TED talk as a model, and are led in identifying the use of persuasive/argument techniques.

Then students reconvene with their teams to get started on the project. They use the new literacy skills they learned from the online research project to conduct more research to help support their stances. After developing their arguments and doing some additional research online, students synthesise their information, storyboard a video for expressing their ideas, and work together to record and edit a film, demonstrating their position on this topic, to be played for an audience of the DES, in the style of a Ted Talk.

6.3.2.4 Modern *Macbeth* Film Adaptation

Focusing back on the text of the play *Macbeth* and on Shakespeare’s use of aesthetic language, this activity requires students to read closely another scene together in their groups and ultimately adapt the scene to a modern setting, rewriting the language and creating a film, inclusive of creative yet simple costuming and props. First, students participate in a brief overview of aesthetic language and guided instruction in finding the aesthetic language in a few excerpts of *Macbeth* Act 1, Scene 5, which contains several examples of aesthetic language: it is rife with sophisticated metaphors, similes, personification, alliteration, etc. Students work through some of the challenging language with their teammates and the facilitator, and then move on to reading the whole scene. In contrast to the digital narrative, in which they retain the original language, students choose

a modern setting for this scene and rewrite it in language that fits that scene (e.g. a business office in Dublin city centre). They script and storyboard, choosing and creating costumes and props, with whatever resources they have available to them. Then, they use technology (cameras, iPads, or smartphones) to video-record their performance of this scene. In the editing phase, they can also add music, sound effects and more to help bring this scene to *modern* life.

6.3.3 Learning Intervention: Using the Bridge21 Model

Each day of the learning intervention lasted about 5-5.5 hours, and over the course of that time, each one of the activities were completed. Throughout each activity, elements of the Bridge21 learning approach were utilised:

- project-based (see 6.3.2)
- skills-development orientation (see 6.3.1);
- technology-mediated (see 6.3.2);
- facilitator and 1 assistant (explained in 6.2.1);
- team work (students were organised into teams of 4-5 by the facilitator);
- social learning protocols (generally, a more informal approach was utilised where, for example, participants called the facilitator by first name);
- learning space organisation (furniture, resources, and technology were always arranged to facilitate teamwork); and
- reflection (occurred as the final step of the activity model).

The Bridge21 activity model was utilised each day to help students complete their projects. Appendix K contains the detailed sample lesson plans, which are aligned to the activity model. These plans show the structure of the day, as well as how the key content (e.g. learning objectives, task directions, project overview) was communicated to students. The lesson plans also convey the various warm-up activities, brainstorm, and reflection questions, involved in each lesson. Appendix K also contains some supplemental resources and materials used throughout the lesson (e.g. op-ed articles and encyclopaedia entries).

6.4 Data Collection and Analysis

As explained in section 4.4, mixed research methods were utilised to investigate the research questions regarding the impact of Bridge21 approach to teaching new literacies on students' attitudes in English. The ETAS Questionnaire, containing quantitative and qualitative sections, was used and each section was analysed using a relevant corresponding approach. For the explanatory case study, both the pre- and post-intervention ETAS Questionnaires were finalised, based on the findings from the exploratory case study. This section explains how the data was collected and analysed.

6.4.1 Quantitative Data

6.4.1.1 Quantitative Data Collection

A total of n=73 completed, paired pre- and post- tests were gathered (1 for each participant). At the start of the learning intervention week, students were asked to complete the ETAS, answering the questions based on their experience of English in general (Appendix A). At the conclusion of the learning interventions, students were asked to complete the post-intervention ETAS, the same set of items, based on their experience of learning English in the Bridge21 approach over the past week. As explained in Chapter 4, the ETAS contains 5 subscales and an average score (both pre- and post-test) was calculated in each subscale, for each participant, and then compared for changes using statistical software. These ETAS Questionnaires were distributed and completed online, using Survey Monkey software.

6.4.1.2 Quantitative Data Analysis

To analyse the quantitative data – as in the Exploratory Case Study: Students – tests were first conducted to determine *normality* – if the data adhere to the standard normal distribution (Laerd Statistics, 2013). The results of these tests indicate which statistical test is appropriate to use in analysing data for any significant changes in a group. Given the sample size (n=73), the Shapiro-Wilk test of normality is most appropriate to use (Laerd Statistics, 2013). The Shapiro-Wilk test revealed that the data was not normally distributed. Table 6.2 shows that almost every category, except the pre-test ET, had a significance level

of $<.05$, which indicates that the data significantly deviates from the standard distribution (Laerd Statistics, 2013).

Table 6.2: Shapiro-Wilk Test of Normality (Explanatory Case Study)

	Statistic	df	Sig.
BE Pre	.905	73	.000
BE Post	.929	73	.001
TC Pre	.973	73	.121
TC Post	.944	73	.003
EC Pre	.965	73	.039
EC Post	.954	73	.010
EE pre	.963	73	.029
EE post	.929	73	.001
ET pre	.969	73	.065
ET post	.895	73	.000

Though the data was not normally distributed according to the Shapiro-Wilk test, skewness and kurtosis of the data for each subscale were also accounted for in determining the normality of the data — and they were within acceptable standards of $-/+ 2.0$ to prove normal univariate distribution (George & Mallery, 2010) (see Table 6.3).

Table 6.3: Skewness and Kurtosis of the data in each subscale

	Skewness	Kurtosis
BE Pre	-0.705	1.454
BE Post	-0.112	-0.661
TC Pre	-0.265	-0.283
TC Post	-0.805	1.000
EC Pre	-0.169	-0.205
EC Post	-0.453	-0.128
EE pre	-0.391	-0.227
EE post	-0.850	0.903
ET pre	0.117	-0.400
ET post	-0.868	0.511

Given these differing results about the normality of the data (and as in the exploratory case study), two statistical tests were performed — a parametric test and nonparametric test — to

check for significant changes in the group. Reported in the results section (6.5) are the results of the parametric paired samples *t*-test, as this is a more robust test, and appropriate to use for this situation (De Winter & Dodou, 2010; Pallant, 2007). [The non-parametric Wilcoxon Signed-Rank test was conducted as an additional measure to assess significance, and confirmed the statistical significance demonstrated in the paired samples *t*-test and the effect sizes. Results of the test can be found in Appendix L.]

In addition to analysing and comparing the pre- and post-intervention ETAS subscales for changes in means, the explanatory case study data were further divided and analysed based on students' pre-existing attitudes (low, moderate or high) to determine if the Bridge21 approach had different or similar influence on these subgroups of students. As explained in Chapter 2, the researcher (as well as many English teachers in general) believes that it is important to teach new literacies to help meet the aims of English education: to foster the growth of individual students by (1) enriching their understanding of culturally significant literary texts, and (2) developing the literacy skills students need to participate fully in society. It was a key concern of the researcher that this model of teaching and learning and the activities utilised (which define literacy in a certain way) do not further disengage or disenfranchise those students who already have poor attitudes toward English. Likewise, she was concerned that an alternative model of learning could disengage students who were already highly engaged and/or confident in English.

The ETAS quantitative tool enables efficient categorisation of participants by their attitudes in each subscale, and their pre- and post- test scores can be compared to assess for any statistically significant differences in changes. To perform this analysis, students were first categorised by their pre-test attitude in each subscale: negative/neutral (3.0 and below), moderate (3.1-4.0), or high (4.1-5.0) attitude. Then, the paired samples *t*-test was performed to test for changes in means of individual students and effect sizes of those changes. Also calculated and presented are the pre- and post-test means for each group (negative/neutral, moderate and high) to show the change in the average for each group (see section 6.5.4).

6.4.2 Qualitative

6.4.2.1 Qualitative Data Collection

As explained in section 4.4, the purpose of the open-ended questions on the ETAS Questionnaire was to triangulate the data – to get a qualitative perspective on the research questions. These questions used in the Explanatory Case Study: Students were modifications of those questions used in the Exploratory Case Study: Students, and therefore rooted in the same theoretical underpinnings. After completing the analysis of the exploratory case study data (see section 5.7), the researcher made necessary modifications. These changes include, for example, directly asking “Why?” – as well as asking more explicitly about confidence and behaviour in English. Table 6.4 demonstrates the changes made to the questions, as well as to which ETAS subscale each question aligned.

Table 6.4: Open-ended Questions and Modifications

Exploratory Case Study	Explanatory Case Study	ETAS Subscale
How did you feel about the activities today?	How did you feel about the experience this week? Why?	Emotional Engagement (EE)
What are 3 things you learned today?	What did you learn from the experience?	English Confidence (EC)
	Has your confidence in English changed in any way? If so, how?	English Confidence (EC)
Did you feel involved in the activities today?	Was your participation this week any different than it normally is in English (in school)? How so?	Behavioural Engagement (BE)
How did you find using the technology for learning English?	Based on this week, how do you feel about using technology for English? Why?	Attitude toward learning English with tech (ET)
	Have your feelings about or confidence in studying Shakespeare changed in any way? How so?	Emotional Engagement (EE) & English Confidence (EC)

As in the previous questionnaire, these questions aimed to be (1) open, to avoid biasing responses, (2) brief, to avoid questionnaire fatigue, and (3) phrased in student-friendly language, to avoid confusion. The intention was that these questions would provide a more complete picture of the data, extending and confirming (or not) the results from the quantitative ETAS. These open-ended questions were distributed – as part of the ETAS

Questionnaire (Appendix A) – online, at the end of the intervention. Participants were instructed to complete the questionnaire based on their experiences that week, as part of the learning intervention. In total, n=73 (all participants) completed the open-ended questions of the ETAS.

6.4.2.2 Qualitative Data Analysis

As section 5.4.2.2 explains, Ezzy's (2002) guide to content analysis was utilised to help develop a coding system that could be used to interpret and synthesise the data; a key aspect of the Exploratory Case Study: Students was to develop data collection instruments and analysis procedures. Through a process which used elements of both directed content analysis (deductive) and conventional content analysis (inductive), the researcher constructed the codes and nodes/categories – and a corresponding set of key words, indicating the participants' expressions of these concepts – to assist in the coding process and create consistency. Through the process of reading and rereading the data, the list of key words was modified and extended; Table 5.5 in section 5.4.2.2 presents the final set of codes, definitions, and key words which were utilised to analyse and interpret the data collected in the Exploratory Case Study: Students. For this explanatory case study, that same final list of codes, definitions, and key words were utilised as the starting point for the content analysis of the data collected. The questionnaires collected from the four learning interventions were all organised by participant and question in an Excel spreadsheet in order to perform the analysis (Appendix N provides a sample of coded data). Transcription was not necessary, as the questionnaires were completed online.

Because the context, participants, and subject content of the explanatory case study were different from the exploratory case study, the researcher once again followed the recommendations of Hammersley and Atkinson (1983), who suggest reading and re-reading the data to become familiar with it and note any patterns, themes, or interesting features or contradictions arising in order to ensure and verify the appropriateness of the existing coding schema. She also coded small samples of the text to ensure reliability and to test the coding schema, and she made modifications to the schema where necessary (Cohen et al., 2011, p. 567). Essentially, she once again, implemented Cohen et al.'s (2011) recommendations for coding (see section 5.5.4.2 for the full list).

In implementing this process, it was evident that the coding schema and data analysis procedures of the Exploratory Case Study: Students were mostly suitable for analysing the data and would, with some minor modifications, serve the purpose of enabling the researcher to interpret, synthesise and present the data, as they related to the research questions. Some refinement was needed in expected places, such as subject content. For example, the node “English subject content” contained the code: “Literary Content.” This was redefined to reflect the content of this specific learning intervention: biographical and historical information about Shakespeare, his works, or the play *Macbeth*.

Another change in the coding schema was to refine and further specify the category English (literacy) skills, as a few specific skills were commonly reported – as opposed to the exploratory case study, where this category was divided into three codes: new literacies, styles of language, and other conventional literacy skills (this node represented the miscellaneous and various (conventional literacy) skills mentioned among the participants). In the data from the explanatory case study, three specific skills were mentioned among students often enough that it warranted developing codes for them in order to represent key ideas from the data. These skills include: Interpreting Shakespearean works (translating, reading, understanding, studying, approaching); public speaking (presenting, answering questions, debating, speaking in front of people); and online research skills (finding and using reliable information online).

Finally, an additional category and code, The Learning Model, was added to the schema because a number of students referred to the “model for learning” in more holistic terms, rather than naming individual aspects, as they often did in the exploratory case study. Though many students did both (named elements and named the model), the elements were coded as the individual elements and the model was only coded when referred to as such. Table 6.5 represents the final list of codes used in interpreting the data for the explanatory case study.

After finalising the list of codes, the final round of coding, using Nvivo, began. Appendix N provides an example of coded data. After coding, Ezzy’s (2002) final steps of counting and logging the occurrences of words, codes, and categories and performing statistical measures

were taken to synthesise the results. The Nvivo matrix coding function also facilitated the demonstration of relationships between codes. The following section, 6.5 presents the results, as they relate to the research questions.

Table 6.5: Final Codes, Explanatory Case Study

Node	Code	Description	Key Words
Emotional Engagement	Emotional engagement (Pos)	Positive feelings about content/activities/experience	Feel/felt...fun, enjoy, good, great, Interesting, liked, appreciate, respect
	Emotional engagement (Neg)	Negative feelings about content/activities/experience	Feel/felt... Boring, did not like
	Emotional engagement (Mix)	Mix of positive and negative feelings	Mix of positive and negative responses
Behavioural Engagement	Behavioural engagement (Pos)	Positive notions of one's participation in English	participate, engage, involved, active
	Behavioural engagement (Neg)	Negative notions of one's participation in English	Boring, lazy, did not participate, others did work
	Behavioural engagement (Mix)	A mix of positive and negative responses about one's participation	Mix of positive and negative responses
Confidence	Confidence (pos)	Positive notions of one's confidence in English	More confident/confidence;
	Confidence (neg)	Negative notions of one's confidence in English	Less confident, unsure, do not understand
	Confidence (neutral)	No change in confidence, or a mix of pos & neg	Same, no different
Beliefs about learning	Learned	Student belief in learning a new concept or developing a skill	Learned, obtained, helped, understand, developed, made easier
English subject content	English subject	The school subject of English as a whole	English subject/class
	"About" Shakespeare	Biographical and/or historical information about Shakespeare, his works, and/or the play <i>Macbeth</i>	Shakespeare's life, <i>Macbeth</i> , history, the play
English (literacy) skills	New literacies	New literacies practices and skills	make/edit films, digital stories, presentations, using ICT tools such as Ipads, applications, moviemaker, videos, cameras
	Styles of language	<i>How to</i> : understand/use the styles of language	Styles of language, aesthetic, argument information, narrative, persuasion

	Interpreting Shakespeare	Reading, comprehending, analysing, interpreting Shakespearean language	translating, reading, understanding, studying, approaching
	Public Speaking	presenting, answering questions, debating, speaking in front of people	speak in front of others, answer questions, present share
	Online Research	Finding, selecting, and using reliable information online	Find, choose, select, interpret, analyse information online
Technology	Learning with technology (positive)	Using technology to support English learning	Helps learning, makes it easier, makes it more fun
	Learning with technology (negative)	Using technology to support English learning	Makes learning harder, more difficult, distracting, frustrating,
Working with others	Collaboration	Students completing tasks and project together in collaborative groups	Teamwork, groups, working together
	Social aspect	Meeting new people and making friends through working together	New people, friends
Learning about Learning	Learning process	Discovery of a new way to learn, that there are multiple ways to learn something	New, different way, model, or method of learning, environment
	Self-discovery	Discovery of a personal interest, trait, preference, learning style, etc.	Realised/liked/learned...I like/enjoy/learn...
Novelty	Novelty	The novelty of the experience: new people, place, content, style of learning	New/different: people, style of learning, Shakespeare, Bridge21 experience
Value	Valuable	Belief that the experience was valuable and worthwhile	Worthwhile, valuable, helpful, beneficial, useful, use in the future, educational
	Not valuable	Belief that the experience was not valuable nor worthwhile	<i>Not:</i> valuable, helpful, beneficial, useful; waste of time
Fun/Enjoyable	Fun	Expressions of fun and enjoyment related to experience, activities, tasks, etc.	Fun, enjoy, entertaining,
Task Feedback	Task	Comments related to the tasks or activities themselves – both positive and negative	Activity, task, exercises
Learning Model	Learning Model	References to the Bridge21 model of learning	Model/method of learning, Bridge21 model

6.5 Results

The purpose of the explanatory case study was to provide answers to (and additional relevant insights related to) the first two research questions:

RQ1: How and why does the Bridge21 approach to teaching new literacies impact students' engagement and confidence in English?

RQ2: How and why does the Bridge21 approach to teaching new literacies impact students' attitudes toward learning English with technology?

To address these questions, the ETAS Questionnaire quantitative and qualitative data are presented together throughout this section. [To see the results from the paired samples *t*-test performed on the ETAS quantitative data, presented as one whole table, see Appendix M.] Of note, according to the *t*-test, there was an increase in means in every subscale of the ETAS, and the increases were all significant at the <0.05 confidence interval. The effect sizes of these changes, which indicate the "magnitude of the difference" (Sullivan & Feinn, 2012, p. 279), ranged from small (0.29) to medium (0.66). The Wilcoxon signed-rank test, which was also conducted to measure significance in change and to ensure comprehensiveness in the data analysis (see section 6.4.1), also demonstrated statistical significance in the changes (Appendix L details the results of this test).

The ETAS open-ended questions, which were modified in response to the findings from the exploratory case study, helped elicit more detailed responses from participants – expanding the researcher's ability to interpret the feedback. From analysis of the data collected, several notable insights related to the research questions were found and some additional themes emerged. First, the results of the explanatory case study are presented, as they relate to the research questions. Subsequently, in section 6.6., there is a discussion of these results in light of the literature and some additional arising themes are presented.

Of note, and as in the exploratory case study, individual ETAS questionnaires were considered holistically to ensure that a participant's perspective did not become fragmented (Cohen et al., 2011). For example, if a student reported that the technology helped make

the experience engaging and fun in two places on the questionnaire, that idea was only reported as once: one student.

6.5.1 Engagement in English

6.5.1.1 Behavioural Engagement

According to the quantitative ETAS (n=73), there was a significant positive change in behavioural engagement, with a medium effect size (see Table 6.6).

Table 6.6 Behavioural Engagement, Pre-Post Intervention (Explanatory Case Study). N=73.

Pre-test Mean	Post-test Mean	Change	P-value (sig)	Effect Size
3.96	4.21	+0.25	<0.001	0.55 (medium)

In the ETAS questionnaire, most participants responded positively to questions about their participation in this intervention. Question 3, “Was your participation this week any different than it normally is in English (in school)? How so?” provided the most insight to their behavioural engagement and helps interpret the positive increases reported in the ETAS quantitative scale (see Table 6.7). 65/73 students (89%) responded positively, reporting that they felt more involved and/or that their participation was different to the way they participate in school. Their responses ranged from basic answers, such as “Yes, it was because I got more involved” to more complicated, multi-reasoned replies such as, “Yes it was very different because in school we don't get put into groups, we are expected to learn it ourselves. We don't make movies or presentations about Shakespeare or any of his work we just get notes handed out and read the play.” 5/73 students (7%) had a neutral or mixed response (e.g. “Not really. I usually apply myself to English and participate as much as possible” or “I wouldn't say it was different, but I was more hands on here than I am in school. I voiced my opinions as I would in school.”). 1 student had a negative response indicating she felt more confident in her regular English class, and 2/73 students had unclear responses.

Table 6.7: Differences in Behavioural Engagement in English (n=73)

Behavioural Engagement in English	Number of students	Percentage of students
Positive difference	65	89%
Neutral/mixed difference	5	7%
Negative difference	1	1%
Unclear response	2	3%

In terms of the n=70 students who indicated some or only positive differences in their behaviour, most provided more details. Table 6.8 lists the most common reasons reported for a positive difference in participation: fun/enjoyable, new literacies, and collaboration were the most commonly given reasons for feeling more involved. Public speaking and the learning model were also mentioned frequently. To clarify, some students provided multiple reasons for how and why their participation is different (e.g. “I gave this week a lot more attention than I would give my English class, purely because I had more fun learning and creating the videos for *Macbeth*”). On the other hand, some students did not provide a reason for how or why their participation was any different (e.g. “Yes, I felt more involved.”). Moreover, some did not indicate that their participation was necessarily more than it usually is but rather just how it was different (e.g. “Yes, we made movies.”).

Table 6.8: Reasons for Positive Behavioural Engagement (n=73)

How/why was their participation different?	Number of students	Percentage of students overall (73)
Fun/enjoyable	23	32%
New Literacies	22	30%
Collaboration	21	29%
Public Speaking	13	18%
Learning Model	9	12%

6.5.1.2 Emotional Engagement

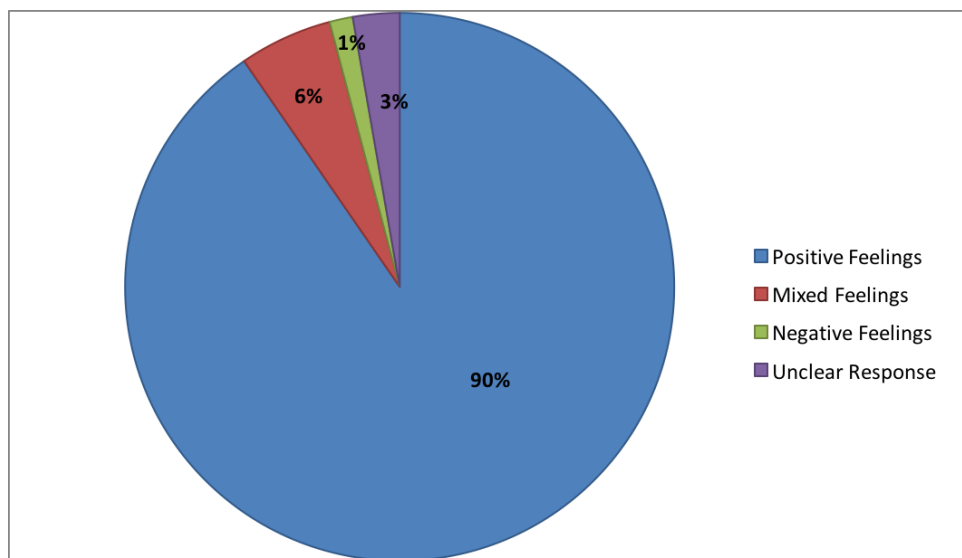
According to the quantitative ETAS (n=73), there was a significant positive change in emotional engagement in English, with a small effect size (see Table 6.9)

Table 6.9: Emotional Engagement, Pre-Post Intervention (Explanatory Case Study). N=73.

Pre-test Mean	Post-test Mean	Change	P-value (sig)	Effect Size
3.94	4.16	+0.22	0.001	0.40 (small)

The ETAS Questionnaire contains two questions directly related to this concept; the first was: “How did you feel about the experience and why?” 66/73 (90%) respondents had exclusively positive responses to this question, using words and phrases such as enjoyed, had fun, liked, and found interesting. 4/73 (6%) participants had mixed responses, reporting that they enjoyed it, but felt, for example, it was “too much like school” or “too concentrated on Shakespeare.” 1 participant had a negative response, explaining it wasn’t what he expected, and 2 participants had unclear responses. These results correlate with the positive change in mean demonstrated in the quantitative ETAS.

Figure 6.1: Emotional Engagement (Feelings about the Experience)



Of the students who reported finding it enjoyable, 63/70 provided further explanation for their positive feelings, some offering multiple reasons. Table 6.10 displays the commonly reasons reported for positive feelings about the experience:

Table 6.10: Reasons for Positive Feelings about the Experience (n=73)

Why did they find it enjoyable?	Number of students	Percentage of students reporting reasons
Learned	40	54.7%
Learning model	21	28.7%
Collaboration	13	17.8%
Social Aspect	13	17.8%
New literacies	10	13.7%

The other question that related to this concept of emotional engagement was: “Have your feelings about or confidence in studying Shakespeare changed in any way? How so?” This question did not elicit a response from all participants in regard to their *feelings* about Shakespeare, yet 51 of 73 did answer that portion of the question (Table 6.11). 28/73 students (39%) reported a positive *change* in their feelings about the specific literary content, Shakespeare and his works. They expressed a growth in interest in studying his works (e.g. “I find him more interesting”) and a new respect/appreciation of the playwright (e.g. “I actually enjoy studying Shakespeare, [and] now I understand why we need to study it.”). 21/73 of students (29%) reported no change in their feelings after the intervention. 6 students already had positive feelings about Shakespeare prior to the intervention — and those feelings were maintained. The other 15 students with no change in their feelings had negative views on Shakespeare prior to the intervention — and those feelings were maintained. Their responses included statements such as: “I still dislike learning Shakespearean plays and the language itself” and “I still find it irrelevant.” Finally, 2/73 students (3%) reported a negative change in their feelings, one saying: “I feel that we shouldn't study Shakespeare that we should move on to someone new. Before I didn't think much about Shakespeare being taught in school.” The remaining 22 students did not comment on how or if their feelings about Shakespeare or studying his works had been affected by the experience.

Table 6.11: Changes in Feelings about Shakespeare (n=73)

Post-intervention feelings toward Shakespeare	Number of students	Percentage
Positive Change	28	39%
No change	21	29%
Negative Change	2	3%
No comment	22	30%

6.5.2 Confidence in English

According to the quantitative ETAS (n=73), there was a significant positive change in confidence in English, with a small effect size (see Table 6.12)

Table 6.12: English Confidence, Pre-Post Intervention (Explanatory Case Study) N=73.

Pre-test Mean	Post-test Mean	Change	P-value (sig)	Effect Size
3.90	4.08	+0.18	0.003	0.38 (small)

Two questions directly asked about confidence, which provided the most insight to answering this research question; however, several other questions elicited responses related to students' change in confidence. To the first question, "Has your confidence in English changed in any way? If so, how?" 55/73 (75%) reported a positive change in confidence, 18/73 (25%) reported no change, and 0 reported a negative change, correlating with the quantitative ETAS results (Figure 6.12).

The second question related to confidence asked about the literary content, "Have your feelings about or confidence in studying Shakespeare changed in any way? How so?" 35 specifically stated they had a positive change in confidence in studying Shakespearean language/literature. No students reported feeling less confident; most of the other responses were more related to their feelings about Shakespeare. Some students more specifically described in what areas of English they felt more confident and those ranged from developing new literacies such as "making movies" to conventional literacy skills such as "learning how to 'translate' Shakespeare" to "speaking in front of others." Because

several other questions elicited responses relevant to the question of confidence, and the range of responses varied, the areas in which students specifically reported feeling “more confident” are grouped below (this chart does not include what they believe they learned). Of note, some students reported feeling confident in two or more areas.

Table 6.13: Growth in English Confidence (as reported across the questionnaire) N=73

Top areas of confidence growth	Number (of 73)	Percentage
Interpreting Shakespeare	37	51%
Public speaking	11	15%
New literacies	10	14%

The responses to the two questions about confidence often used a phrase such as “I feel more confident *because I learned...*” – highlighting the link between a sense of learning and confidence. Thus, insofar as belief in learning contributes to sense of confidence (see section 4.2), and as in the results from the exploratory case study, this section summarises participants’ responses to the questions of what they learned. The questionnaire specifically asked them, “What did you learn from the experience?” and the responses to this question provide most of the data presented in Table 6.14; however, several other questions prompted students to write about what they learned, and that data is included in Table 6.14. Every student (n=73) replied to this question, some offering 1 response or “thing” they learned and others offering multiple things; Table 6.14 displays the most common responses. In a case where a student said two or more of the same things (e.g. I learned the language of narration and language of information), they were coded and counted once as “style of language.” For further descriptions of each code, see section 6.4.2.2.

Table 6.14: Reported Learning (Explanatory Case Study) N=73

“Learned”	Number of students	Percentage
New Literacies	43	59%
About Shakespeare	33	45%
Collaboration	30	41%
Interpreting Shakespeare	30	41%
Styles of Language	17	23%
Learning process	10	14%
Online Research	8	11%
Public Speaking	7	10%

6.5.2.1 Growth in Technology Confidence

Related to students’ growth in English confidence, the quantitative ETAS demonstrated a significant positive change in technology confidence, with a small effect size (see Table 6.18).

Table 6.15: Technology Confidence, Pre-Post Intervention (Explanatory Case Study). N=73.

Pre-test Mean	Post-test Mean	Change	P-value (sig)	Effect Size
3.71	3.87	+0.16	0.016	0.29 (small)

This result correlates with the reported learning from the open-ended questionnaire, in which students more frequently reported “new literacies” (which is a group of those practices and skills which fall under this category, and include things such as editing videos and using digital storytelling applications; see the list of code descriptions in section 6.4.2.2). The concept of technology confidence (TC), as its conceived in the ETAS, relates to perceptions of competency in functionally using technology. The ICT enables these new literacies, and in the process, students must learn how to use/operate the applications or hardware itself. These results, once again, highlight the cyclical link between learning and confidence.

6.5.3 Attitudes toward learning English with Technology

According to the quantitative ETAS (n=73), there was a significant positive change in attitude toward learning English with technology, with a medium effect size (see Table 6.16)

Table 6.16: Attitude toward learning English with Technology, Pre-Post Intervention (Explanatory Case Study). N=73.

Pre-test Mean	Post-test Mean	Change	P-value (sig)	Effect Size
3.58	4.11	+0.53	<0.001	0.66 (medium)

One question directly related to this concept: “Based on this week, how do you feel about using technology for English?” All students (n=73) provided a response to this question, with 61 students (84%) replying positively, 5 students (7%) replying with a mixed response, and 3 students (4%) replying negatively (Table 6.17). The remaining 4 students responded more about how they feel about their confidence in using technology in English (e.g. “I feel more confident because I was shown how to properly use it.”), and therefore do not directly answer the question regarding their (emotional) feelings about using the ICT.

Table 6.17: Attitude Toward Using Technology in English (Post-intervention, Explanatory Case Study) N=73

Feelings	Number of students	Percentage
Positive Feelings	61	84%
Mixed Feelings	5	7%
Negative Feelings	3	4%
No comment	4	5%

Those reporting positively said things such as: “I think using technology during English is great and allows more freedom when creating” or “I really liked using the technology. It helped me learn more and it made it 10 times more interesting than it would be usually.” Most respondents provided at least one reason for further explanation of their positive experience, and some offered multiple reasons. The most common reasons for positive feelings were similar to the results from the exploratory case study: (n=24) said was that

using the ICT was “fun” or made it “more enjoyable.” Several students (n=22) also said the technology “helped” in the process of learning of English. Another notable result was that several students (n=10) reported an increased understanding of *how* technology could be used in learning.

While most students reported positive feedback about using the technology, 3/73 students (4%) negative feelings, saying things such as: “I’m not a big fan of using technology in general for English because I prefer writing.” Finally, 5/73 students (7%) reported mixed feelings about the experience of using technology. Of those 5 students, 3 expressed frustration from the technology not working at times, and the other 2 explained they liked using ICT but would not want to use technology *all* the time.

6.5.4 Impact on Students by Pre-Existing Attitude

An additional purpose of the explanatory case study was to analyse for any differences in the impact of the Bridge21 model on students, based on their pre-existing attitudes (negative/neutral (low), moderate or high). To complete this process, the quantitative ETAS results were utilised, as this instrument allows for efficient categorisation of students based on their attitudes in each subscale. Notably, but perhaps expectantly, an individual student’s scores across the ETAS did correlate: i.e. a student with high confidence in English also tended to have high engagement. However, there were variations, for example: only 5 students reported low behavioural engagement, but 22 reported low attitudes toward English with technology.

A paired samples *t*-test was then used to compare pre- and post- intervention mean test scores (as explained in 6.4.1.2). For example, students (n=10) reporting low emotional engagement on the pre-ETAS were grouped together, and an average score was calculated for this group (2.78). That score was then compared to that same group’s (n=10) mean score on the post -test (3.53). Statistical tests were performed to assess the significance and effect sizes of the changes.

In each subscale, the result was similar: the most statistically significant impact (which was positive), along with the largest effect size, was on those students that began the

intervention with poorest attitudes. Students who began the intervention with a moderately high attitude also experienced positive increases in their attitudes, and these changes were statistically significant – though they were not as dramatic as the changes among students with low attitudes. For those who started with a high attitude, their attitudes in each subscale either stayed the same or decreased slightly, though these changes were not significant – suggesting the differences in results were due more to chance. Analysing the qualitative data helped interpret the stagnation or slight dip. Similar to the feedback in the exploratory case study, several of these students reported enjoying the experience, but said they would not want to learn like that every day. Importantly, this data demonstrates that Bridge21 approach did not alienate those students with positive dispositions toward English. Table 6.18 displays the changes by pre-existing student attitude and by subscale, and the effect sizes of those changes.

Table 6.18: Changes in Attitude, by Pre-existing Attitude (N=73)

	Pre-existing Attitude	Number of Students	Pre-test Mean	Post-test Mean	Effect Size*
Behavioural Engagement (BE)	Low	5	2.6	3.53	1.28
	Moderate	48	3.83	4.08	0.56
	High	20	4.6	4.68	--
Emotional Engagement (EE)	Low	10	2.78	3.4	0.91
	Moderate	35	3.78	4.09	0.58
	High	28	4.59	4.52	--
English Confidence (EC)	Low	7	2.78	3.21	1.1
	Moderate	41	3.7	3.96	0.56
	High	25	4.56	4.5	--
Attitude toward learning English with tech (ET)	Low	22	2.7	3.6	1.1
	Moderate	37	3.66	4.24	0.75
	High	14	4.77	4.66	--
Technology Confidence (TC)	Low	13	2.71	3.26	0.98
	Moderate	42	3.67	3.80	--
	High	18	4.5	4.4	--

*Cohen's Effect Sizes: small ($d \geq 0.2$), medium ($d \geq 0.5$), and large ($d \geq 0.8$) (Sullivan & Feinn, 2012). No effect size is reported for changes that were not statistically significant; instead the symbol (--) is used.

6.6 Discussion and Contributions of Study Results

From the literature review, the researcher identified a need for deeper understanding of how integrating new literacies in English impacts students' attitudes; she also argued that the field of English education now needs pedagogical models for teaching new literacies in English (see section 2.9). Accordingly, it was hypothesised that Bridge21 approach could be adapted and utilised as a framework for teaching new (21C) literacies in second-level English education. It was thought that this approach could have a positive impact on students' attitudes in English in key areas. The Explanatory Case Study: Students was designed to evaluate and understand the impact of the Bridge21 model on student engagement and confidence in English and student attitude toward learning English with technology; it also sought to determine if there were any differences among students, based on their pre-existing low, moderate or high attitudes.

Most significantly, the quantitative and qualitative data collected during this explanatory case study demonstrate that the Bridge21 approach to teaching new literacies in English had a positive impact on student engagement and confidence in English and attitude toward learning English with technology. Analysis of the ETAS quantitative data revealed statistically significant positive increases after participation in a five-day learning intervention in the specific areas of interest relevant to the research questions: emotional and behavioural engagement in English; English confidence; and attitude toward learning English with technology. The qualitative data analysis supported and extended understandings related to these results, providing useful insights to the reasons behind the reported positive changes, and thereby contributing to furthering understanding within the field. In addition to students' attitudes improving, students reported learning key English curricular goals, suggesting that this Bridge21 approach can be an effective framework for teaching new literacies in English. Through this approach, the aims of English education can be met – to foster the growth of individual students by (1) enriching their understanding of culturally significant literary texts; and (2) developing the literacy skills students need to participate fully in society.

The following sections recap, summarise and contextualise the results reported in the previous section 6.5 in terms of their significance in this study and contributions to the field. They also explain how the different groups of students (divided by their pre-existing attitudes) responded to the Bridge21 approach. Finally, it discusses some key themes that arose from the analysis of the data, which are relevant and extend understanding in the field but did not directly answer the research questions.

6.6.1 Engagement in English

The analysis of both the quantitative and qualitative data from this case study demonstrate increases in behavioural engagement (BE) and emotional engagement (EE), and the reasons behind those changes correlated with the prevailing literature. The positive increases were statistically significant, with a small effect size in emotional engagement and a medium effect size in behavioural engagement. The overlap between the two facets of engagement (Fredricks et al., 2004) was also evident: students commonly reported that they participated more than they normally do in school because they found the experience enjoyable or fun. N=23 students (32%) specifically said their enjoyment of the experience (positive EE) led to their increased participation (positive BE).

6.6.1.1 Positive Engagement through Learning

The most common reason students reported for enjoying the experience was that they learned something; most often, it was at least one of the three intended learning outcomes (conventional literacy, new literacies, or Shakespearean literary content). This finding is particularly important, as this concept of having fun *through learning something* is often not addressed in the literature related to new literacies. Instead, as section 2.6 describes, it is often argued that integrating new literacies/technology in English will increase engagement or motivation in the classroom by bridging the home-to-school literacy divide (Curwood, 2013; Henderson, 2011; Hinchman & Sheridan-Thomas, 2014). In this study, however, the use of new literacies was not engaging to students because it mirrored students' outside-of-school literacy practices, but rather because they learned *new* literacies, as well as other English content and key skills (section 6.6.2 elaborates on the specifics of what they learned). This finding supports the idea of "hard fun" (Papert, 1998) that is integral to the Bridge21 model (see section 3.1). Through their participation in several new, challenging yet

interesting tasks – and learning new skills and content – over the course of the learning experience, students enjoyed themselves. This finding extends the understanding in the field of how and why including new literacies, within a pedagogy such as Bridge21, in the English curriculum can be engaging.

This finding about their enjoyment and fun in their learning, and consequently engagement, is remarkable in the light of another finding related to their feelings about the specific literary content, or traditional English curriculum, which was studied. As explained in section 6.5, not all students provided a response to the questions about their feelings about Shakespeare, but 15 students (21%) reported that they were still not interested in studying Shakespeare; however, most of these same students (13/15) were positive about the experience overall, and reported enjoying themselves and learning various English skills. Though some students were studying content they found challenging or boring, the approach helped engage them and give them a positive learning experience. Moreover, this approach did increase engagement or positive feelings about the subject content for many students: 40% did report a positive change in their attitudes toward learning Shakespeare.

6.6.1.2 Engagement and the Elements of New Literacies

The other reasons commonly reported for positive increases in engagement (both EE and BE) related to: collaboration, participation in new literacies enabled by technology, social aspects, and public speaking – which are all elements of the Bridge21 model. In several cases, students also specifically said that the learning model itself (and not only the individual elements) made the experience more pleasurable and encouraged more individual participation. Through working with their peers to create and develop projects which require the use of new literacies, and “publicly” presenting their ideas and projects, students generally felt more engaged and enjoyed the experience. This finding corresponds with the theory and research which emphasises that the it is collaborative ethos and aspects of new literacies that are engaging (Barton & Hamilton, 2000; Curwood & Cowell, 2013; Jacobs, 2012; Kimbell-Lopez et al., 2014). These results also support and extend the findings of other studies, which suggest the importance of an authentic audience in terms of increasing engagement (Borsheim et al., 2008; Hogue et al., 2004). Specifically, this study

contributes to the field by providing empirical data to support these ideas and deepening understanding of how these specific aspects contribute to increased engagement.

6.6.1.3 Increased engagement among different student groups

Another important finding from this case study relates to the impact on students based on their pre-existing engagement English: the biggest positive gains were made among those students who started out with the poorest levels of emotional and behavioural engagement. Comparing the pre- and post-intervention means in these areas demonstrates statistically significant increases. Moreover, the post-intervention means among this group would be classified as a moderate attitude, thus closing the gap between those students who started with poor attitudes and those who started with moderate attitudes. Though their post-intervention levels of engagement were still not as high as the initial moderate group, there was less of a gap. Those students with moderate attitudes (the majority of students), also reported an increase in their levels of engagement, though their gains were not as much or as statistically significant. For those with initial high engagement, there were small non-significant changes. This study, therefore, extends the understanding of the impact of a pedagogical approach to teaching new literacies in English can have on *different* students' attitudes. The researcher identified this key area as needing further research, as this lack of nuanced understanding is a barrier to integrating new literacies in English (see sections 2.7.2 and 2.9.1). This study showed that this approach had the most positive impact on engaging those students who had the poorest attitudes in English, but importantly, the approach did not adversely impact those students with positive dispositions toward English.

To summarise, the Explanatory Case Study: Students (n=73 students) demonstrated that this adaptation of the Bridge21 approach for teaching new literacies in English had a positive impact on students' emotional and behavioural engagement in English. Moreover, it provided deeper understanding of why this approach had an overwhelmingly positive impact, and whom (those students with the poorest attitudes) it impacted the most. Given engagement is considered an important and desirable quality of educational instruction and experiences, and because of its relationship to confidence and achievement (Bandura, 1977; Pajares, 2003), these results are particularly significant and useful. They suggest that the Bridge21 model for teaching and learning can be adapted in other English contexts to

facilitate the integration of new literacies, fulfilling a need in the field identified by the researcher (see 2.9.2).

6.6.2 Confidence in English

Students overwhelmingly reported feeling more confident in English (75%) after the intervention, and many reported feeling confident in more specific areas of English – from interpreting Shakespeare to public speaking and new literacies.

The cyclical connection between confidence and engagement (section 4.2) was also evident: students commonly reported that they felt more confident because they participated more than they normally do in school and/or because they liked what they were doing. For example, one student said, “I feel way more confident because using technology made it more interesting and it made me want to be more involved, so it boosted my confidence in English.” In fact, as elaborated upon in the previous section 6.6.1 on student engagement, 40 students (39%) said learning something, an aspect of confidence (EC), also contributed to their enjoyment (positive EE) and participation (positive BE).

6.6.2.1 Development of and Confidence in new English skills

The most common things students reported learning were the intended learning outcomes of the learning intervention: new literacies (with online research specifically being mentioned frequently), conventional literacy (with the styles of language, interpreting Shakespeare, and public speaking specifically being mentioned frequently), and literary content (about Shakespeare) (see 6.5 for specific numbers).

As the literature review demonstrated, English teachers are open to using more ICT/new literacies if they see an *English pedagogical* benefit to integrating it into their practice (McGrail, 2005). In this study, students specifically reported feeling more confident in studying challenging English curriculum, and they reported learning the intended (traditional) English learning objectives after the learning intervention. Given that some teachers believe the role of technology is to support the teaching of traditional English curriculum such as Shakespeare and conventional literacy practices (Hundley & Holbrook

2013; Peterson & McClay, 2012), this study demonstrates one way that new literacies could be utilised and taught within an approach to help students develop these skills.

This study is also relevant and useful to those researchers and teachers who argue both that ICT/new literacies should enhance the learning of existing curriculum *and* that students need to learn new literacy skills (Curwood, 2013; Leu et al., 2004; NLG, 1996). For many practitioners, however, it is unclear how to teach new literacies effectively in English (Flanagan & Shoffner, 2013; Hutchison & Reinking, 2010). These results show that this Bridge21 approach to teaching new literacies can facilitate the integration of technology into English in ways that help students develop conventional and literacy skills they need for future success.

The results are also important in the context of the new Irish Junior Cycle skills-focused curriculum. Students reported that they learned/developed many of the key skills emphasised in the Junior Cycle (e.g. working with others; communicating; being creative; and managing information and thinking) (DES, 2012). This finding suggests that using the Bridge21 approach in English can be appropriate for achieving the aims of the new English Junior Cycle curriculum in Irish second-level education (DES, 2012).

6.6.2.2 Extending the Bridge21 learning approach

The results of this study also have significance for the overarching Bridge21 design-based research project. As section 3.3 explains, to-date Bridge21 learning experiences have had a positive impact on students' motivation and attitudes toward their learning and abilities (Lawlor et al., 2018). Moreover, students involved in the Core TY programme demonstrate an increase in their confidence in key 21C skills: communication, collaboration, critical thinking, creativity, technology for learning, and self-direction (Tangney, et al., 2017). In this study, students also reported learning or improving several of these skills. They commonly reported learning how to collaborate more efficiently, how to learn in new ways, and how to use technology for learning (these were also aspects that they reported as contributing to their positive emotional engagement). Moreover, their sense of confidence was also positively impacted by working collaboratively: being able to share ideas, work together, and ask questions of their peers made them feel more confident in their English work, skills,

and/or knowledge. In this study, in which the Bridge21 approach was adapted for teaching curriculum content, students reported learning the curricular goals, as well as gaining the benefits of the typical Bridge21 experience/core TY programme experience in terms of skills development.

As explained in section 3.3, the Bridge21 research programme is currently focusing on “adapting the learning model for use in mainstream classrooms to deliver core curriculum content” (Conneely et al., 2012, p. 8). This study supports and extends the work of other researchers who have begun adapting of using the model for teaching specific subject curriculum (Bauer, et al., 2015; Bray & Tangney, 2016; Wickham et al., 2016). As Bray and Tangney (2016), who found statistically significant increases in students’ attitudes in maths after an intervention in which students studied math through the Bridge21 learning model, this study also found significance increases in attitudes in English. This study, therefore, contributes to the Bridge21 research project by providing empirical data related to its impact on students’ attitudes in English and development of key 21C skills. It also, as the following chapter details, provides practical lesson plans and resources for teachers to use in their classroom, thus contributing the Bridge21 research agenda and aim of transforming education in Ireland (see section 3.3).

6.6.3 Attitude toward learning English with Technology

6.6.3.1 Positive Change in Attitude

The quantitative ETAS demonstrated the most significant changes in this study were in the subscale of students’ attitudes toward learning English with technology (ET). This subscale had the largest change in pre- and post-intervention means, the most statistical significance in the paired samples *t*-test, and the largest effect size (0.66). The qualitative data mirrored and extended the quantitative results, with students overwhelmingly reporting positive changes.

Prior to the intervention, many students (22/73 – 30%) had poor attitudes or did not know how they felt about using technology in English. Their pre-ETAS responses indicated that they never use it in English; that their teachers use it in teacher-led, lecture-style teaching; or that ICT is used for uploading homework. After the intervention, 61/73 (84%) had purely

positive feedback about their attitudes toward learning English with technology, and 5/73 (7%) had mixed feelings.

As in the exploratory case study, after the learning intervention, several students expressed that they also had a better understanding of how technology can aid them in learning English. For example, one student said, “I feel that technology is of a huge benefit and help with English. As a younger generation, we use tech a lot, but rarely for English, so it really helps.” They also learned the central role of technology in the subject of English. As one student said, “So much of English, i.e. newspapers, blogs, films, are online now and use a wide range of technology, so I think it is good to use it to learn English.” Moreover, they learned that technology is a powerful tool/resource about which one needs to learn; after the intervention, they felt empowered by having skills to investigate the reliability and trustworthiness of online resources.

6.6.3.2 Educating students: Technology in Learning

This data support and extend the ideas and research put forth by others in several ways. First, students’ responses (in the pre-intervention ETAS) reflect the existence of the so-called “home-school divide” between the way students experience new literacies outside-of-the-classroom and literacy in school (Henderson, 2011; Henderson & Honan, 2008). Most of the participants in this study did not see the internet as a resource for learning prior to the intervention. As some scholars have suggested, adolescents may spend a lot of time on the internet, yet they are not necessarily sophisticated users of it; they struggle in new literacy skills such as finding and evaluating appropriate information online; critically reading and analysing information online; navigating the overwhelming amount of information available; and synthesising and communicating information (Dwyer, 2012; Leu, et al., 2012; Leu, et al., 2017; Mills, 2010) (see section 2.6). This study suggests that some adolescents may furthermore not be aware that they need to learn these skills.

Though much of the literature focuses on the idea that teachers need help understanding how to use technology in the learning process and/or how to teach new literacies (see section 2.7), the author contends that more focus also needs to be placed on communicating to students how they can use technology to learn and how technology

needs to be learned about in the English context. The results of this study demonstrated that using this Bridge21 approach to teaching new literacies in English helped students learn that the information available to them through technology needs to be critically reviewed and critiqued; students also reported developing their skills in conducting research online. Therefore, not only did using the Bridge21 in English help improve their attitudes toward learning English with technology, but it also helped them realise the important role technology plays in English.

6.6.4 Summary: Learning about Learning

Through analysing the data with a primary aim of answering the researching questions, an additional theme emerged related to the idea of *learning about learning*. This was also a theme in the results of exploratory case study, and the data from the explanatory case study support, but also extend these concepts. For many students, the learning intervention experience taught them things related to *how* to learn or how one *can* learn – as an individual, with others, with technology, and with fun and enjoyment.

Students said things such as

- “[I learned] There are tons of ways to learn English that aren't boring. To trust your team mates to do what is needed and that editing is not as hard as I once thought.”
- “I feel that now I know there are better and more fun ways to learn English rather than sitting in class and listening to a teacher. I had a lot of fun”

This meta-learning seems to have contributed to both their positive experience overall and a growth in their sense of confidence. In the literature related to new literacies (and 21C skills), scholars and educators are concerned with students learning several particular skills needed for the 21st century, such as collaboration, creating multimedia products, etc. (NCTE, 2013; Voogt & Roblin, 2012). In this study, students reported developing some of those skills, as well as realising that the development of these skills can lead to other learning. For example, they began to see working collaboratively as an important skill in and of itself, but they also realised that they can learn (content, other skills) when they work together. These results suggest that for several of these students, prior to the learning intervention, they did not see how teamwork or technology could help them learn other skills. The Bridge21

model is designed in such to encourage teamwork, and technology is integral to the learning process; several students' feedback reflected these concepts.

These results are also significant in light of the changes in the Junior Cycle curriculum. For example, the key skill, managing myself, includes "reflecting on and evaluating my learning." Through participating in a learning intervention which utilised an adaptation of the Bridge21 model (of which reflection is a key aspect), students considered how they learn and also reconsidered their own notions about a subject; several remarked that they realised that the subject itself can be more interesting when approached in a different way.

6.7 Limitations and Future Research

The results of both the quantitative and qualitative data regarding students' engagement and confidence in English, and attitudes toward using technology in English, are overwhelmingly positive. However, there are some limitations regarding the data collection and context of the study.

6.7.1 Data Collection and Analysis

6.7.1.1 The Questionnaire

As in the Exploratory Case Study: Students, and also previously discussed in Chapter 4, the data was collected via a questionnaire which asked for students to rate and elaborate on their own attitudes; in other words, it was all self-reported data. The participants reported their attitudes toward English (and more specifically, Shakespeare) and learning English with technology before and after the learning intervention; they also reported what they believed they learned, without any additional measure of their learning, such as a written test, being completed. People are not always the best assessors of their own attitudes or learning; moreover, the students may – consciously or subconsciously – complete the questionnaire with the facilitator and/or other authorities whom they may believe would be reading them in mind, and accordingly answer the questions in a particular – positive or negative – way, despite the instruction to be honest (Cohen et al., 2011).

However, and as in the Exploratory Case Study: Students, it was beyond the scope and purpose of this explanatory case study to, for example, ask teachers to assess and rate their students' confidence and/or to "test" students' skills or knowledge for practical, logistical and theoretical reasons. This case study was most interested in students' perceptions of their engagement and confidence in English, attitudes toward learning English with technology, and their sense of what they learned – content or skills. Future research could include the teachers' perspective of their students' confidence and engagement; or, it can include an investigation into analysing the content and skills learned in these interventions, using myriad assessment tools and/or the perspective of the teacher. The final phase of the research, however, the Exploratory Case Study: Teachers was designed to begin to address this limitation. Teachers, in completing questionnaires based on their experience, shared their perspectives on the levels of their students' engagement and confidence.

Additionally, the open-ended questions on the ETAS Questionnaire were still imperfect, even though they were modified based on the results of the Exploratory Case Study: Students. Largely, these changes were positive, making the tools generally more useful, as they gathered more complete feedback. Almost every student answered every question, and many elaborated, offering reasons behind their statements – a significant improvement from the exploratory case study. Yet, there were still some flaws in these questions, mostly related to the final question: "Have your feelings about or confidence in studying Shakespeare changed in any way? How so?" This question, which was added for the explanatory case study, was crafted with the aims of keeping the questionnaire relatively short and avoiding survey-fatigue (Cohen et al., 2011). However, it mistakenly asked about two separate concepts: feelings and confidence, which elicited mixed responses from students. As a result, some students answered more about confidence and others more about emotional engagement, making the data regarding feelings and confidence in studying Shakespeare somewhat incomplete and difficult to summarise for the whole group. By looking at students' responses to the various questions across the questionnaire, however, the researcher was able to ascertain a representation of the individual participants' attitudes in general in English and toward the more specific subject content, Shakespeare. In future research using the same or similar data collection tool, it is recommended that this question be split into two separate questions.

6.7.1.2 Short Term Impact

Another limitation of the study is that the data was collected immediately before and after the learning intervention. There were increases in all the subscales of the ETAS, and supporting qualitative data; however, it was not within the scope of this study to follow-up with student participants months or years later to ask what long-term impact this experience had on their confidence or engagement in English – or in school in general. There is available data (Tangney et al., 2017), however, on the long-term impact of participating in the Bridge21 Transition Year (TY) Programme. Tangney et al. (2017) found that immediately following participation in the TY programme, students had high increases in their confidence in all key skills measured, such as collaboration, problem solving, critical thinking and using technology for learning. Several months later, students' levels of confidence were not quite as high as they were immediately following the TY programme, but still considerably (at statistically significant levels) higher than they were prior to the programme. Participants also reported that the Bridge21 experience made them feel more interested in going to college and made the transition to college easier because of the skills they developed during the intervention (Tangney et al., 2017). The field of English education and those interested in the using the Bridge21 approach in other disciplines could benefit from future research that investigated longer-term impacts on the students who participate in these learning interventions.

6.7.1.3 Data Analysis Approach

Additionally, the researcher collated and performed the data analysis herself. She independently created the coding schema, performed the coding, and counted and presented the data. Though, as explained in Chapters 4 and 6, she made efforts to be as unbiased as possible in this process, she had a vested interest in this topic and these issues in the field of English education (see 1.3). Her background could have influenced her interpretation of the data and/or the way she chose to code, synthesise and/or present it. In an ideal situation, several researchers would have collaborated on these aspects of the research to cross-check and corroborate findings; however, that approach was beyond the scope and feasibility of this Ph.D. research. In future research, multiple researchers could collaborate to complete the data analysis.

Because the researcher knew she would primarily be collecting, analysing and presenting the data, she used quantitative data, as well as the qualitative to help interpret the impact on students to help increase the reliability/validity of this study. In this approach, multiple sources of data are “mutually illuminating” (Bryman, as cited in Cohen et al., 2011, p. 24), and through multiple sources of evidence converging in a triangulating fashion, the rigor of the case study could be established (Yin, 2013).

6.7.2 Study Context

6.7.2.1 Location

The researcher made efforts to mimic a school-like environment by using typical English school subject content throughout the explanatory case study, yet the physical space still was not school, which potentially impacted students’ experiences. It was determined to complete these learning interventions in the learning laboratory outside of students’ everyday school experiences, as it allowed for an opportunity to explore the impact of the approach, as originally and conceptually designed. The completion of projects and activities were not, for example, restricted by the rigid timetable of formal school; moreover, social learning protocols (an element of the model) allow students to call the teacher by the first name and to move more freely (e.g. to use the bathroom without requesting permission). Accordingly, investigating the adaptation of the model within the confines of individual and specific school was beyond the scope of the study, and should be addressed in future research. [This Ph.D. research does begin this investigation in the Exploratory Case Study: Teachers, as discussed in Chapter 7.]

The location of the study may have also impacted students’ experiences, as many of the participants were visiting Bridge21 for the first time; therefore, novelty and/or intimidation may have affected their feelings about the experience. Though no students remarked on the location specifically and if/how it contributed to their feelings, this different learning space may have (consciously and subconsciously) contributed to their feelings about the experience. For example, the Bridge21 space is purposely designed to feel more relaxed than a traditional school environment, and as such contains bright colours, murals and easily

moveable furniture. The data does not reveal if or to what extent this atmosphere of a unique, relaxed learning space had on their feelings about it; in the future, a researcher might consider investigating specifically how the physical location and corresponding environment impacts their attitudes toward the experience or learning.

In addition to the potential influence of a new, unique learning space, coming to the Bridge21 learning lab involved participants meeting some new people – students and facilitators. The questionnaires did not directly ask students about this aspect of the experience, yet a few students remarked that meeting new people helped make it a fun experience, suggesting that further investigation into *how* or *how much* that had an impact on their feelings would be valuable.

6.7.2.2 Facilitator

Moreover, and though no students mentioned this directly, the teacher or facilitator has an impact on a student's experience (Skinner & Belmont, 1993). In this case, the facilitator was also the researcher, and perhaps had a more enthusiastic approach to teaching and learning in general or with using the Bridge21 model than students' regular classroom teachers. As disclosed in the introductory chapter of this thesis and elaborated upon in section 4.6, the researcher does have a positive bias toward the Bridge21 approach, which she likely made clear in the learning interventions. The ratio, as explained in section 6.2 of students to facilitator was also slightly less than an average classroom, with it being about 20 students: 1 teacher. The teacher did also have an assistant with her at times to help with student supervision over the course of the day. A lower student-teacher ratio allows for individual students to receive more direct attention from teachers, which could have impacted their experience. Alternatively, participants may not have liked the facilitator and preferred/felt more comfortable with their regular English teacher. Either way, the data does not directly convey how the teacher impacted their experience.

6.7.2.3 Participants

A description of the student participants was provided in section 6.2; however, it should be acknowledged here how these factors can be considered limitations. First, this was an opportunistic sample: these students came from schools which had pre-existing

partnerships with Bridge21. They likely were in contact with teachers, administrators, or other students who have had prior exposure to Bridge21. They may also have previously been in classes with teachers who used elements of the Bridge21 approach in their practice. These opinions of others in their community and/or personal experiences may have biased students prior to the intervention, and the data collection tools did not seek this additional background information. Moreover, the students participating also volunteered themselves or were volunteered by their teachers – either way, they were sent with the approval of their teachers, which could suggest that the teacher believed the student would behave appropriately. Thus, these groups may not have presented some of the classroom management or behavioural challenges that are common in some second-level classrooms.

Though it was an opportunistic sample, it was still a diverse group: students were culled from 6 schools across different areas of Dublin. 30% of participating students also reported identifying as a race/ethnicity other than White Irish – as compared to the population in general in which only 18% of people usually residing in Ireland identify as a race/ethnicity other than White Irish (CSO, 2016). However, the students were *only* from Dublin-area schools (though the exploratory case study included students from County Cork). Future research may consider investigating the impact of the approach on students in other parts of Ireland and other countries. Moreover, the participants were not that diverse in terms of their pre-existing attitudes toward English; most had moderately high attitudes in each of the ETAS subscales. Though the results show that in each category, the largest and most statistically significant impact (which was positive) was on those students that began the intervention with poor attitudes, the number of students with initial poor attitudes was lower than the number of students with moderate and high attitudes in almost every subscale. Only in the subscale of “attitude toward learning English with technology” was there a larger number of students with low attitudes (22 students/30%) than high attitudes (14 students/19%). It would be useful to explore further the impact of the Bridge21 approach to teaching new literacies on more students with low levels of behavioural or emotional engagement and/or confidence in English.

6.8 Chapter Summary

This purpose of this chapter was to explain the context of the individual learning interventions that collectively formed the Explanatory Case Study: Students; the design of the various learning activities and projects in which students engaged; the data collection, analysis and results; and the conclusions made from this explanatory case study. Essentially this chapter provided a description of the case study which was designed to help answer the research questions and provided answers to the research questions related to students.

Perhaps the most important results from the Explanatory Case Study: Students, put simply, was that the Bridge21 approach to teaching new literacies had a significant, overwhelmingly positive impact on the majority of students in terms of their attitudes toward English and toward learning English with technology. In probing the data further, it is evident that their engagement and confidence increased in tandem, one impacting upon the other: they participated more because they enjoyed themselves, and they enjoyed themselves because they learned and grew more confident in English. The most significant impact was upon those with the lowest initial attitudes in each of the subscales of the ETAS, yet those with initial high attitudes also enjoyed the experience and believed they learned from it. Finally, the biggest changes observed were in students reported attitudes toward learning English with technology, with students also expressing new understandings about the role of technology in learning English; indeed, students expressed in a number of ways that they learned new ways to learn.

Though there are some limitations to the study, the evidence is strongly positive and suggests that further research into using the Bridge21 approach for teaching new literacies in English would be a useful and logical next step – through both continued work with students in various learning environments and through work with teachers in more traditional school environments.

Chapter 7: Exploratory Case Study: Teachers

7.1 Study Rationale and Aims

This chapter reports on the third phase of this Ph.D. research – the Exploratory Case Study: Teachers. The first two phases involved adapting and refining the Bridge21 approach for teaching new literacies in English and investigating the impact on students' attitudes. The Explanatory Case Study: Students, described in Chapter 6, demonstrated that the adapted Bridge21 approach generally had a positive impact on students' engagement and confidence in English and toward learning English with technology. These results gave cause to progress to the third phase of the research and continue in the action research cycle – to work with other educators to help them make changes in their own teaching practices.

In this third phase, the researcher first shared the resources she created and the findings from the Explanatory Case Study: Students with teachers during professional development sessions. Then, she gathered and analysed data on teachers' experiences of adapting the approach and resources for their teaching, and their beliefs about them. In this process, she aimed to address RA4:

- To create activities, lesson plans and materials for teaching new literacies effectively in the English classroom, share these resources with other educators, and investigate teachers' experiences using them in the classroom.

She also aimed to investigate and preliminarily answer RQ3:

- How do teachers adapt or struggle to adapt the Bridge21 approach to teaching new literacies in their classrooms and what do they believe about the approach?

This chapter reports on the context and approach of this study, participants, data collection and analysis, and results. It summarises the key ideas and themes emerging from the teacher feedback on their experiences and beliefs, and it discusses how this data can help inform future research and professional development.

7.2 Context

As explained in section 3.3, Bridge21 is an over-arching design-based research project which has been in place for more than 10 years, and the programme has connections with many students, schools, teachers, and administrators. Currently in the evolution of the project, some researchers are working to adopt the model for teaching and learning curriculum content – within both traditional and untraditional school environments (Bauer, et al., 2015; Bray & Tangney, 2016; Wickham et al., 2016). As a part of those efforts, members and affiliates of Bridge21 collaborate to deliver professional development opportunities to teachers in a variety of capacities – from casual workshops in the Bridge21 learning laboratory to the more formal Trinity College Dublin Professional Certificate in 21st Teaching and Learning (Bridge21). In 2017, Bridge21 began offering to its partner schools (there were 11 at the time of this study) a professional development opportunity in which a member of the Bridge21 team would visit their school to lead a professional development workshop for teachers in using a 21st century approach to teaching and learning (i.e. the Bridge21 model) in English and/or maths. Within this context, this final exploratory study was conducted: the researcher was the Bridge21 team member who designed and facilitated the English workshops. Subsequently, she collected data from the teachers who participated in the workshops.

The researcher collaborated with Bridge21 programme administrators, who were responsible for organising the logistics of the workshops (who, when, and where). These visits were conducted between January and March 2017. Depending on the school and availability of the teachers, the visits ranged in the length of time from 40 minutes to two hours. In total, 6 of the 11 partner schools opted for this CPD opportunity, and the researcher visited all 6 schools to facilitate the English workshop (see Appendix O for a list of school). These schools are all based in the greater Dublin area, and are diverse in student population; most schools, however, are located in disadvantaged areas of Dublin, where there are low rates of students progressing to third level education. Moreover, the access their students have to technology in school or at home varied; in some schools, all students had an iPad, while in other schools there was 1 computer lab shared among hundreds of students. In total, 33 teachers participated in the workshops, ranging from 3 to 10 teachers

in each workshop. There were 13 males and 20 females, and they varied in age and experience in teaching; data was not collected on the teachers' racial/ethnic backgrounds, socioeconomic status, or other demographic information. The teachers who attended the workshops chose to come either out of personal interest, career development, and/or pressure from management. Some of these teachers had prior exposure to Bridge21 through participating in a workshop at Bridge21, a whole-school CPD day, or the Postgraduate Certificate in 21st Teaching and Learning.

7.3 CPD Workshop Design

Designing these school workshops was logistically challenging, given the variability in the schools in terms of the number of teachers who would be attending the workshop, the amount of time allotted for the workshop, teachers' previous exposure to the Bridge21 model, and the access these teachers and their students had to technology; often these aspects were unknown or unconfirmed to the researcher before the school visit. Moreover, this CPD format was a new aspect of the Bridge21 project; thus, it needed trialling and developing. Accordingly, and after speaking with the administrators in the partner schools about what is of most need and interest to their teachers, the Bridge21 team members collaborated to design the workshops, both English and maths. Given the foreseen variability in the visits, it was determined that a general format of the CPD workshop, which allowed for flexibility, would be most appropriate. This approach included 3 elements/phases: (1) an overview of the Bridge21 model; (2) an overview and sharing of the lessons plans, activities, and resources the researcher created in the exploratory and explanatory case studies with students, and – ideally – (3) an opportunity (if time allowed) for teachers to engage in an abbreviated version of one of the Bridge21 model activities. To help with the logistics of the day, it was also decided that the researcher would bring technology (4 iPads), along with any other materials necessary to complete the projects to each school visit, as teachers or the schools might not have technology available. Moreover, the lesson plans and accompanying resources would be shared with teachers, for modification and reuse purposes, both by paper (for photocopying) and electronically, through the use of a shared Google-drive folder. In some ways, the approach to working with teachers in this study, reflected the approach of other scholars (see section 2.8) who

used the TPACK framework (Mishra & Koehler, 2006) to underpin their conceptualisation of working with teachers to help them integrate technology/new literacies in meaningful ways. The CPD was situated within the intersection of pedagogical, content and technological knowledge, aiming to help teachers develop “pedagogical techniques that use technologies in constructive ways to teach content” (Mishra & Koehler, 2006, p. 1029). As, for example, Carlson and Archambault (2013), it was hoped that this experience could help them understand how to use technology within a pedagogy to teach challenging aspects of the curriculum and to support students’ learning.

In practice, in every school visit, the researcher had time to complete parts 1 and 2 of the workshop. Using Google slides, she created a presentation for this purpose, which was also shared with teachers following the workshops. She briefly reviewed of the Bridge21 model, her individual research aims, and her intentions at the school. Then, an overview of five different projects was provided: the four Shakespeare-related activities of the Explanatory Case Study: Students (see section 6.3/Appendix K) and the digital storytelling activity from the Exploratory Case Study: Students (see section 5.3/Appendix E); examples of students’ work were also shared. Additionally, she created a brief 2-min video, portraying students in action, using the Bridge21 approach to complete the digital storytelling activity. In four of six of the school visits, which were between 1.5-2 hours in length, the teachers participated in completing one of the projects presented, based on their interest. They completed the projects using the Bridge21 activity model, though the times allotted for the various components were modified for the abbreviated time available and for the pre-existing knowledge base of the teachers: e.g. reviewing the styles of language or their understanding of the plot of *Macbeth* was not necessary. The workshop, in alignment with the Bridge21 activity model, finished with teachers presenting their projects and reflecting on their achievements/challenges. If time permitted, they also reflected on how they might adapt the lesson for their class.

At the end of the workshop, teachers were directed to the Google-drive which houses the electronic forms of the lesson plans and resources, available for them to download and modify to suit their purpose. They were asked to share their emails with the researcher so she could share the resources. Teachers were then informally asked about their intentions

to use the approach in their teaching and their perceived feasibility of doing so. Teachers generally sounded enthusiastic and agreed to use the model in at least one lesson in the next two months. They were informed that the researcher would also, with their permission, use their emails to follow-up with them in two months to inquire, through a survey for research purposes, about their experiences of using the Bridge21 approach in their English classrooms. Teachers all agreed to sharing their emails for the purposes of obtaining access to the electronic resources and to provide feedback to the researcher. Ethical considerations are addressed in the following section.

7.4 Data collection and analysis

7.4.1 Ethical Considerations

As explained previously (section 4.5), approval for the overarching Bridge21 project had previously been granted by the Trinity College Dublin (TCD) School of Computer Science and Statistics Ethics Committee, and further ethical approval was sought and obtained for this Ph.D. research.

This exploratory study necessitated informed consent from all teacher participants. As the following section explains, a questionnaire, distributed online, was used as the main data collection tool. The questionnaire began by reviewing TCD confidentiality and data storage protocols, and communicating to participants that their participation was voluntary and that they had the right to withdraw from the study without penalty at any time; then it asked for their consent to participate. All information collected was anonymised and stored in accordance with the Data Protection Act at TCD.

7.4.2 Questionnaire

Given the variability in the teachers' experiences, the exploratory nature of this case study, and the aim to acquire substantive, personalised feedback regarding the efforts and outcomes of those teachers who used the Bridge21 approach and/or other elements of the professional development workshop in their practice, it was determined that a questionnaire with several open questions (with a few closed, multiple choice questions) would be an appropriate means for collecting data (Cohen et al., 2011, p. 382). A

questionnaire was also the most feasible option, considering the logistical challenge of obtaining feedback from teachers in six different schools, spread geographically across the greater Dublin area.

As in the ETAS Questionnaire, these questions aimed to be (1) open, to avoid biasing responses, (2) brief, to avoid questionnaire fatigue, and (3) phrased in straightforward, casual language, to avoid confusion (Cohen et al., 2011, p. 382). To help develop this questionnaire, the researcher consulted other surveys which were utilised and modified by other Bridge21 team members who sought similar information from the teachers with whom they were working (Byrne , Fisher & Tangney, 2015; Roche, O’Sullivan & Tangney, 2015). The “English Teachers Follow Up Survey” strongly drew upon those other questionnaires which have been refined over the course of several years (Byrne et al., 2015; Roche et al., 2015). Moreover, the researcher collaborated with another Bridge21 team member – who analysed results of those questionnaires – to develop the “English Teachers Follow Up Survey.” Thus, this questionnaire underwent a face validity process – whereby discipline-specific experts and researchers come to a consensus that the instrument is measuring what it purports to measure – before being utilised within the context of this exploratory study (Gravetter & Forzano, 2015).

The questionnaire began with several short informational paragraphs, conveying the aims of the study, reviewing confidentiality and data storage protocols, and reminding participants of their right to withdraw; then, it asked for their consent to participate. Following on, the questionnaire contained unthreatening factual questions (e.g. name, school, prior exposure to Bridge21, and the reason for participating in the workshop). From there it moved to more open-ended questions that require opinion and attitudes (Cohen et al., 2011, p. 398). Given the two-part research question and research aim 4 of the study, participants were asked about their experiences (successes, challenges, etc.) of trying to implement the Bridge21 approach and about their beliefs about using the Bridge21 approach in their English teaching. They were also asked how the Bridge21 programme might improve future CPD workshops.

The following questions related to their efforts in using the model:

- How have you incorporated the ideas and/or activities that were presented into your teaching practice? Please explain.
- How many lessons and/or activities did you complete that utilised the ideas and/or content from the workshop? How long was each?
- Did you utilise elements of the Bridge21 approach/activity model? If yes, how so? If not, why not?
- Please describe any barriers you have faced to implementing the workshop content in your teaching practice.

The following questions related to their beliefs about the Bridge21 model for English:

- Did you find the workshop useful/helpful? Why or why not?
- Would you do the activity again, or a different one, in the future? Please explain.
- How successful do you believe the implementation of this activity was with your students? Please explain.
- In your opinion, how effective is the Bridge 21 model of teaching and learning in English? (select from a scale 1-5). Please give reasons for your answer.

The questionnaires were distributed online via SurveyMonkey, approximately two months after the workshop took place, giving teachers sufficient time to implement at least one lesson. Teachers were sent a link via email three times in total, about two weeks apart. Paper copies of the questionnaire were also distributed to the workshop participants via liaisons in each of the schools to increase the response rate. In total, 11 of the 33 (33%) participating teachers completed a survey (10 online, 1 on paper); though this response rate is on the lower side, it is within the acceptable standards of organisational research (Baruch & Holtam, 2008). Moreover, at least one teacher from each participating school completed the questionnaire, so all six schools were represented in the feedback.

7.4.3 Analysis

This exploratory study into teachers' use of the Bridge21 model in school English aimed to investigate and preliminarily answer RQ3: How do teachers adapt or struggle to adapt the

Bridge21 approach to teaching new literacies in their classrooms and what do they believe about the approach?

As explained in the previous section 7.4.1, there were multiple questions designed to gather feedback from teachers regarding this two-part research question. Thus, to synthesise and present their feedback and thoughts related to these two areas, a content analysis was performed on the data collected. Following the model of the exploratory and explanatory case studies with students, Ezzy's (2002, p. 83) guide – which involves collecting text, defining units of analysis, defining categories/nodes, reviewing and coding texts, and counting and logging codes (section 4.4.3.4) – was also utilised.

First, the responses collected via SurveyMonkey were exported and collated into an Excel spreadsheet, and the responses from the one paper survey were added to the spreadsheet by the researcher (no additional transcription was needed). The data was organised by respondent and question, and further divided by the questions which related to the two different aims, in an Excel spreadsheet (see sample in Appendix P) in order to perform the analysis. Then, the data was read and re-read multiple times (Cohen et al., 2011).

The smallest coding unit was determined to be a single word, while the largest unit of analysis, the contextual unit, was a few sentences (Cohen et al., 2011, p. 565). Next, the researcher constructed the codes and nodes/categories, using a conventional (or inductive) content analysis approach. Because of the exploratory nature of this teacher-focused study, and the researcher's interest in emerging themes among the responses, this type of content analysis is appropriate. As explained in section 5.4, in this approach, codes (categories and names) are formed directly from the raw data, aiming to allow the voices of the participants to emerge (Moretti et al., 2011). Again (see 5.4.2.2), the recommendations of Hammersley and Atkinson (1983) and Cohen et al. (2011), several procedures in the coding process were implemented, such as re-reading texts multiple times, making additional codes, revising the codes, and coding samples.

Accordingly, an iterative process of developing and refining codes was undertaken to account for all the ideas present in the data. Once again, to assist in the coding process and

create consistency, the researcher also developed a coding schema (Table 7.1) outlining each node and code, along with an operational definition/description of the code, as conceived of by the researcher, and set of key words frequently used by respondents which indicate their expressions of these codes. Through the process of reading and rereading the data, the codes, descriptions of the codes, and corresponding list of key words were modified and extended.

Table 7.1: Coding Scheme for Exploratory Case Study: Teachers

Node	Code	Description	Key Words
Barrier	Barrier	Challenges/barriers to using the Bridge21 model in English	Issue, challenge, barrier
Beliefs (B21 Model)	Beliefs (Pos)	Expressions of positive beliefs/reactions/ideas to using the Bridge21 model for English	(very) effective; engaging, student-friendly, positive atmosphere
	Beliefs (Neg)	Expressions of negative beliefs/reactions/ideas to using the Bridge21 model for English	Time-consuming, not everyday
Adaptation to Classroom Practice	Activity	Use of an activity learned in workshop – similar or modified	Activity, lesson
	Collaborative Learning	Students collaborating to complete a project/task and to learn together	Group work, teamwork, collaborative learning
	Frequency	Number of classes/hours using the model	Numbers, class, hours
	Student-led learning	A student-centred (as opposed to teacher-centred) approach to learning in the classroom	Teacher-as-facilitator, student-led-learning
	Technology Use	Use of ICT in teaching and learning in the classroom	ICT, technology, ipads, computers, applications
Student Response (from the teacher perspective)	Engagement in Learning	Students' engagement (participation, interest, behaviour) in the activities/lessons/project	Engage, participate, behave
	Learning	Students' learning of content/skills	Learned, built/consolidated learning, knowledge
	Piquing Interest	Using (elements of) the model/activity to pique student interest/engagement	Hook, pique, interest
	Novelty	New model, style of teaching and learning for the students in this classroom	New, novel, different
	Enjoyment	Students' enjoyment of the approach to learning, activity, lesson, aspect of the Bridge21 model, or other workshop	Enjoy, fun, like

		content	
Technology	Access to ICT	Lack of access to technology or to reliable technology	No access, ipads/computer room completely booked
	Technical Issues	Technical difficulties such as hardware not functioning properly or internet connectivity issues	ICT/tech issues, wifi issues, unreliable, broken
Time	Time Challenge	Issues with using the Bridge21 model related to class time or sufficient planning time	Not enough class time, planning time
	Time Benefit	Idea that using Bridge21 model is more efficient/productive/better use of class time	Productive, efficient, class time
Workshop Opinions	Ideas	New ideas for activities, tasks, use of technology	Idea, inspire, activity,
	Methods	Learned a new method or approach for teaching	Method, model, approach to teaching
	Resources	Introduced to new resources, e.g. software applications,	application, ICT, technology, resources

After finalising the schema, the final round of coding began; once again, the researcher utilised Nvivo to assist in this process. Appendix P provides an example of the data from the supplemental study and the codes that were ascribed to the text. Though the questionnaire contained several questions designed to elicit feedback related specifically to the aims of the investigation, there was overlap in the responses; i.e. the responses to some questions intended to gather data based on teachers' practices actually spoke more to their beliefs, and vice versa. Accordingly, an individual's responses and data across the questionnaire were analysed and coded holistically. Finally, after coding the data, Ezzy's (2002) final steps of counting and logging the occurrences of words, codes, and categories, were taken to help synthesise the results. The following section 7.5 presents the results, as they relate to the aims of the study.

7.5 Results and Discussion

Analysis of the data provided some key insights to the research question and aim related to this exploratory study, which can inform future research in several areas. Generally, teachers were positive about using the Bridge21 approach in English; they believed the CPD

workshop was beneficial; and they thought they implementation of the activities, lessons, and/or Bridge21 approach were largely successful with their students.

7.5.1 Adapting the Bridge21 Model: Successes and Challenges

All teachers who completed the questionnaire reported incorporating something they learned from the workshop into at least one activity or lesson in their English classroom. They were generally positive about the CPD workshop, relaying much encouraging feedback; as one teacher said: “I found the alternative methods used in the lessons very interesting and [they] gave me good ideas for adapting them to my own lessons.” Teachers reported finding the workshop helpful because they learned new teaching methods, activity/project ideas, and resources that they could incorporate into their practice; some even suggested that allocating more time for the workshop would be beneficial.

Their actual classroom implementation of these concepts ranged in length and depth. Some teachers orchestrated just a few short activities which used elements of what they learned from the workshop or the Bridge21 model (e.g. a timed brainstorming activity or the meme warm-up activity), while others reported using the model on a weekly basis or to complete a major project. Some of those with prior exposure to the Bridge21 model (3 teachers) reported already incorporating elements of the Bridge21 approach into their English teaching on a consistent basis. Several of the teachers in the study closely followed the lesson plan samples provided to them. For example, they used the digital storytelling with art lesson (see section 5.3.2/Appendix E) or the “Meme-ing *Macbeth*” lesson (see section 6.3.2/Appendix K). Other teachers, however, who were not teaching Shakespeare or did not have the flexibility in their curriculum teaching requirements did more adapting of the lessons and the model. They, for example, modified the meme activity for classes focused on character analysis and comparative film studies.

Teachers reported that their efforts were successful among their students. They believe that their students enjoyed the activities and/or aspects of the Bridge21 approach: collaborative learning, technology, and student-led learning (or the teacher moving into a more orchestrating role) were specifically mentioned by several teachers. As one teacher said: “I know that they really enjoyed it and they particularly enjoyed using technology in the

classroom as I had not done any other lessons in the year that used technology in a creative way.” Some also believed their students enjoyed these activities or approach because they were new or different.

Other teachers spoke of the success of their efforts in terms of student learning: they reported students learning English subject content, from each other, and the “real benefit of the Bridge21 approach.” As one teacher said, she saw an improvement in efficiency and quality in task completion: “I felt it was very good, students pooling their knowledge together made for increased quality and improved timing in regard to completing tasks.” All the respondents also said that they would do the same activity/lesson/project again in the future (with modification or extension in some cases).

Though these teachers largely reported positive experiences, they also identified some challenges to using the approach in their teaching. For the majority of teachers (7/11), access to reliable, properly functioning ICT hardware and software was the biggest challenge. The other issue cited (3 teachers) was class time: either the length of their classes (40-60 minutes) made it challenging to complete tasks, or they had issues with other projects/school events interrupting the activities and projects they were aiming to complete. One teacher also found it takes him more time to plan for this type of lesson, and therefore challenging to fit in the time to plan.

7.5.2 Teachers’ Beliefs about the Bridge21 Model for English

Though they found some challenges in using the Bridge21 approach in their practice, these teachers largely considered it an effective model for teaching and learning in English, being particularly useful in engaging students.

The questionnaire asked teachers, “In your opinion, how effective is the Bridge 21 model of teaching and learning in English?” – and to give reasons for their answers. On a 5-point scale ranging from not effective to very effective, 7 teachers said “effective”, 3 said “very effective,” and 1 said neither (this teacher also explained that a “full lesson” was not completed due to another project interrupting and taking over his plans). In analysing their

responses to this question, as well as opinions expressed elsewhere in the questionnaire, it was clear that these teachers believe that the approach is effective because their students *enjoy learning* in this model. These teachers' responses about their experiences of using Bridge21 model in their teaching reflect the theory regarding the cyclical relationship among emotional engagement, behavioural engagement and learning/achievement (see section 4.2); it also supports the findings from the explanatory case study and the idea that "hard fun" (Papert, 1998) contributes to students' enjoyment of a task (see 6.6.1.1). From the teachers' points of view, this learning model (and complementary activities) helped pique the interest of their students and engagement in the learning process, which in turn helped them learn. As one teacher put it: "It engages students and creates a positive atmosphere in the class and a buzz about learning." These teachers frequently cited certain aspects of the Bridge21 approach – collaboration, student-led learning and technology – as well as the stating the approach overall and tasks themselves, as leading to positive student engagement. For example, one teacher, who rated the Bridge21 model as "effective" said: "It is using technology which students love and it is fun. Collaborative & encourages self-directed learning. It is also a reminder to teachers (like me) who have taught for over 30 years to utilise this technology far more often and empower students to use it to develop their learning and creativity."

Though the teachers were largely enthusiastic about using the Bridge21 model for English, some did express a few concerns or hesitations. While some teachers adapted this approach to fit within the logistics of a school timetable that includes 40 minute classes, others believe that the model is better suited for Transition Year students, where there is more flexibility in the timetable and curriculum to complete projects and a lack of exams. One teacher, who believes the model is "effective" did also express that it's not appropriate to use the model for delivering *all* content. He said: "Also, I find it works for some topics, but it doesn't necessarily work for all; I still believe in delivering quality teacher-led content too. Moderation works for me." [Of note, the idea that the approach would be appropriate for every English lesson was never suggested by the researcher; rather, it was presented as an alternative model that could be useful in many areas.]

7.5.3 Summary Discussion

The teachers who participated in this study (and provided feedback via survey) were positive about the CPD workshop itself, using the Bridge21 approach in their classrooms, and their beliefs that the Bridge21 model is effective for English teaching.

The fact that they all incorporated various things they learned from the workshop into their teaching suggests that this CPD workshop and the resources shared (e.g. Bridge21 activity model, lesson plans, handouts, software applications, etc.), helped them feel prepared or confident enough to incorporate more ICT/new literacies into their classroom. Based on their feedback, it seems that the combination of the overarching approach and activity model, along with the practical resources and exemplar lesson plans was particularly useful in terms of meeting a range of skill levels within a mixed group of teachers and demonstrating how the model could be adapted for teaching English curriculum specifically (both traditional content and new skills). One teacher, for example, commented that the CPD facilitator should be talking about “Incorporating this [Bridge21] approach as a long-term approach rather than as a project approach.” Another teacher, however, commented that it’s useful to have: “Lots of practical suggestions that cater for the set-up, time frames and facilities that we work with.” This combination of both the theory and practical seemed to be helpful.

Given that a major barrier to integrating ICT/teaching new literacies in English education is the need for more professional development (Flanagan & Shoffner, 2013; Hutchison & Reinking, 2010), this positive feedback from the teachers who participated in this study – in terms the facts that they felt prepared to try the approach and that they believe the Bridge21 model is effective – is notable. The results suggest that it would be worthwhile to conduct more CPD workshops such as this one in the future. These workshops can address a concern expressed by McGrail (2005): English teachers include ICT when they believe it’s helping meet *English* curricular goals, and they need more professional development in learning *how* ICT can be used to do that.

One participant did also speak to a concern expressed in the literature (Hundley & Holbrook, 2013), which is that some English teachers are not as tech-savvy as they claim, and in fact, need help in developing their own new literacies. This teacher suggested that in the presentation of these workshops, it is important to “Always keep the older, less ‘techy’ teacher in mind. My colleagues of my age feel somewhat judged in our school environment ... by younger staff and management ... which is hampering their learning.” On the opposite end of the spectrum, one teacher said: “The workshop was good, but I suppose once you've been to as many as I have, you feel you ‘get’ it by then, so it's like you're there to help your colleagues, which is fine.” This particular teacher has previously attended a Bridge21 workshop in the Bridge21 learning lab; however, this diversity among responses demonstrates the need perhaps, for more tailored, target-specific workshops. Smaller groups and/or knowing in advance the teachers’ experiences could help a facilitator design and plan for a professional development workshop.

Though teachers were enthusiastic about Bridge21 and open to learning and trying new things in the classroom, they did face the same barriers to integrating ICT/new literacies as commonly cited in the literature: access to technology and class time (Hutchison & Reinking, 2010). Unfortunately, positive attitudes and creativity cannot overcome the lack of functioning ICT, and when teachers spend more time trying to troubleshoot technical issues than focus on the learning objectives, it becomes frustrating and discourages teachers from using ICT, as it is perceived as a time-waster (Hutchison & Reinking, 2010). Hence, schools and states that are now requiring students to become proficient in new literacies need to invest in the infrastructure to support those learning objectives. In terms of class time, some teachers in this study seemed comfortable with dividing the components of the Bridge21 activity model over a few class periods, so that a project was completed over 3-4 classes, rather than one long day. Others seemed to find it challenging to adapt the model to the restrictive timetable of formal schooling. While it would be ideal for schools to have more flexible scheduling, perhaps in a future workshop, a facilitator could demonstrate or collaborate with teachers on how to divide the stages and activities that comprise the activity model over several class periods.

Despite these challenges, the teachers were optimistic about using the Bridge21 approach and were creative in their adaptation of it in their English teaching, which suggests more (*tailored*) workshops of this kind would be beneficial.

7.6 Limitations and Future Research

Though brief, this exploratory study has provided useful information for researchers. However, there were some limitations to this case study, and acknowledging these can help identify both current English teachers' needs and areas which need further investigation.

7.6.1 The Sample

As explained in 7.2, the teachers who participated in this exploratory study came from schools which had pre-existing partnerships with Bridge21 and therefore they, their administrators, or their students may have had prior exposure to Bridge21. Opinions of others in their community and/or personal experiences may have biased them prior to the workshop. In the future, it would be beneficial to complete the workshop with teachers from schools who have not previously been involved with the Bridge21 programme, and to investigate the challenges and successes of their efforts to adapt the Bridge21 approach in their English teaching environments.

Another challenge or perceived limitation to working with this sample of teachers was that access to properly functioning technology was an issue for them – as was evident in anecdotal conversations during the workshops and from the analysis in their questionnaires. This highlights the well-documented fact that one of the greatest barriers to using more ICT/new literacies in the English classroom is the lack of access itself to functioning ICT (Donnelly, McGarr & O'Reilly, 2011; Egan et al., 2013; Flanagan and Shoffner, 2013; Hutchison & Reinking, 2010; McGarr, 2009); it also reveals the limits of the ability of teachers to use the Bridge21 approach in its fullest capacity – or to use the Bridge21 model for teaching new literacies (which require ICT) in English. From another, perspective, however, the fact that many of the teachers in this study reported access to technology as a major challenge, but still reported believing the Bridge21 model is effective or very effective for teaching English, is notable. This somewhat conflicting feedback suggests that the teachers see the technology as just one, among many, elements of Bridge21. In other

words, they find the other aspects of the approach and activity model useful in their classes and are able to adapt the model – without technology – to their teaching. This finding also reflects and manifests the design of the Bridge21 model, which aims to create a social, collaborative student-led learning environment – one in which technology can help facilitate the learning process. Technology, for this thesis, has been defined very narrowly; however, technology can be considered any tool – a pen, a book, a ruler. From that perspective, the Bridge21 model can be implemented in many learning environments. Based on these findings, it would be worthwhile to get a more thorough and deeper understanding of teachers' perspectives on the role of technology in Bridge21 and/or implementing a Bridge21-style lesson. It would also be useful to work with more teachers who are situated in schools in which they and their students have access to relatively updated, functioning technology.

7.6.2 Data Collection and Analysis

Though 33 teachers participated in the English and Bridge21 workshops, only 11 teachers completed the questionnaire – and these 11 teachers completed it voluntarily, without incentive. A 33% response rate is within the standard deviation of the average response rate for surveys used within organisational research (Baruch and Holtam, 2008), yet it is desirable to have feedback from a greater number of participants. Without their responses, one can only speculate *why* they did not complete the survey: perhaps they were too busy or forgot, or perhaps they believed the workshop was not useful and did not want to report that they did not use the content in their teaching. While future research may benefit by following up with these teacher-participants who did not respond to the survey in person, it was beyond the scope of this study to return to the six different schools to conduct individual interviews.

The data gathered from the 11 participants who completed the questionnaire, however, was rich in detail, diverse in reported experiences, and useful for informing future research/CPD. Yet, it was all self-reported data, and therefore had the same pitfalls already discussed (see sections 5.6 and 6.6). The teachers reported on their own experiences, challenges, successes and beliefs, without any additional tools to assess these concepts. The respondents may – consciously or subconsciously – complete the questionnaire with the

facilitator and/or other “authorities” in mind, and accordingly answer the questions in a particular – positive or negative – way, despite the instruction to be frank. Yet, this case study aimed to capture initial reactions from teachers on their own thoughts and experiences of trying, in some cases, for the first time to adapt the Bridge21 model in their English teaching. Future research, for example, could include a more in-depth case study with one or two teachers over a longer period of time.

Moreover, this study only contained the teachers’ perspectives, with the teachers reporting on their successes often through their perceptions of their students’ engagement and enjoyment in the learning process. The researcher did not seek the perspective of the students in their classes, as this was beyond the scope of this exploratory study. However, it would be an important step in future research to query students through interviews, questionnaires, surveys or other data collection procedures about their own experiences of participating in the Bridge21 model in English in school.

7.7 Chapter Summary

This purpose of this chapter was to explain the rationale and context for the case study investigating teachers’ adaptation of the Bridge21 approach in their English classrooms in traditional schools; to describe the design and intention of the CPD workshops in which 33 teachers participated; to describe the data collection, analysis and results of the study; and to make conclusions and suggest future research. Essentially this chapter provided a description of one brief case study, exploratory in nature, which began to address a research aim (4) of the Ph.D. research and preliminary answer research question 3. It also began to address some of the future research suggested, based on the explanatory student case study in regard to teachers’ evaluating students’ engagement and confidence when learning in the Bridge21 approach.

Most noteworthy, all of the teachers who completed the questionnaire adapted and/or modified the concepts presented in the workshop into their own English teaching. They all reported finding the Bridge21 model effective for English teaching, tending to attribute its

effectiveness to engaging students in the learning process – through the use of ICT, student-led learning and collaborative learning. They further reported, through learning in the workshop and/or in their implementation of the lessons/activities in their own classroom, how collaborative learning and the use of ICT supported each other; that students enjoyed and learned (various skills/content) in these lessons; and that there was increased efficiency in task completion. However, the teachers reported that their biggest barrier to using the Bridge21 model *fully*, was their access to reliable technology and limited class time.

Though there are some limitations, the evidence is strongly positive and suggests that conducting more tailored CPD workshops would be beneficial in helping English teachers integrate more ICT/new literacies into their classrooms. The combination of the theoretical and the practical approach in the CPD helped teachers understand and envision how the ICT could be used to support curricular learning objectives, as well as help students develop key new literacy skills. In conducting these workshops, further research into the experiences of the teachers, as well as the experiences of their students, would be useful.

Chapter 8: Discussion and Conclusions

8.1 Summary of the Thesis

This thesis began with a literature review which established that in the field of English education, it is generally agreed that ICT has impacted literacy by enabling new ways of communicating and *new literacies*. The researcher argued that in order to meet the aims of English education, teaching must adjust for two interwoven reasons – (1) the opportunity to use new literacies to engage students in the process of learning English (Alvermann, 2008; Hutchison & Reinking, 2010; O'Brien & Bauer, 2005) and (2) the need for today's students to develop *new* literacy skills (New London Group, 1996; Leu et al., 2004; Leu et al., 2012). The literature review highlights how education policies and English curricula worldwide are shifting in response to societal changes, theoretical literature, and available empirical studies. It identifies, however, two main problems in the field. First, there is limited understanding of how and why using new literacies impacts students' attitudes in English, as relatively few studies – specifically in the English education context – have been conducted (PS1). Of course, technology and the new literacies created through ICT are only as powerful as the approach in which they are used (Jacobs, 2012), yet fewer studies investigate *pedagogies* for effectively teaching new literacies in English education. Accordingly, English teachers report needing guidance in how to teach new literacies effectively – to engage students, meet curricular aims, and/or develop their students' literacy skills (Hundley & Holbrook, 2013) (PS2).

For these reasons, the researcher proposed an investigation into an effective approach to teaching new literacies in English; she hypothesised that the Bridge21 pedagogical model for 21st Century (21C) teaching and learning (Lawlor et al., 2018) could be adapted and utilised as a framework for teaching new (21C) literacies in second-level English education for several reasons. She explained the alignment of several key aspects of the Bridge21 philosophy with the ethos of new literacies, Bridge21's practical activity model for implementing 21C learning experiences, and the prior success of Bridge21 as a model for 21C teaching and learning in both an out-of-school context and within school subjects in Ireland. Thus, it was hypothesised that it could be a suitable framework for facilitating the

teaching of new literacies in English. The elements of the pedagogical approach, in combination with the activity model, could help educators realise the potential of new literacies to engage students and to build their confidence in other learning objectives of English – skills and content. Accordingly, the following research questions were formulated:

RQ1: How and why does the Bridge21 approach to teaching new literacies impact students' engagement and confidence in English?

RQ2: How and why does the Bridge21 approach to teaching new literacies impact students' attitudes toward learning English with technology?

RQ3: How do teachers adapt or struggle to adapt the Bridge21 approach to teaching new literacies in their classrooms and what do they believe about the approach?

To investigate these questions, the researcher used a methodological approach which involved three phases – an exploratory case study with students, an explanatory case study with students, and an additional exploratory study with teachers. Elements of an action research cycle (McNiff, 2002) were also utilised to help frame the overall research process. The Exploratory Case Study: Students was used to develop and pilot the learning interventions – lessons, activities, materials, and other resources – and to develop and refine data collection tools and analysis procedures to evaluate the approach. From the Exploratory Case Study: Students, the data collection tools were validated and finalised; there was also evidence that the Bridge21 approach was having a positive impact on students' (n=125) attitudes in English, which gave cause to continue in the research cycle.

After analysing the data and considering the limitations of the Exploratory Case Study: Students, the researcher conducted an explanatory case study, designed to evaluate the impact of the Bridge21 model on students' attitudes in English – i.e. answer the research questions. After conducting four, one-week long learning interventions with a total of n=73 students, she found that the Bridge21 approach had a significant, overwhelmingly positive impact on the majority of students in terms of their attitudes toward English and learning English with technology. As Chapter 6 detailed, this study further revealed that their engagement and confidence increased concurrently; that the most significant impact was upon those students with the lowest initial attitudes in each of the ETAS subscales; that the

most significant positive changes observed were in students' reported attitudes toward learning English with technology; and finally, that students learned new ways to learn.

After phases one and two, the study moved in the third phase of the research in which the researcher conducted an additional exploratory case study with teachers to investigate how they adapt/struggle to adapt the Bridge21 approach in their English classes and their beliefs about using the approach. She first conducted CPD workshops, which involved sharing the approach and teaching resources she created, with teachers from 6 different schools. The participating teachers were generally positive about the workshop and the effectiveness of the Bridge21 model, with everyone integrating some aspects of the approach into their teaching. This data suggest that this model and style of CPD workshop may help address the issues related to teacher professional development identified in the literature review (Flanagan & Shoffner, 2013; Hutchison & Reinking, 2010)

8.2 Addressing the Research Aims (RA) & Contributions (C)

Alongside seeking to answer several research questions, this research had several aims. The section reports on to what extent these aims were achieved and the corresponding contributions of this research.

8.2.1 The impact of a new literacies pedagogy on students' attitudes (R1, C1)

The first aim was to "Develop a deeper understanding of how and why new literacies – and strategies for teaching new literacies in English – impact students' attitudes in English" (RA1).

This research contributes to the field by providing a nuanced understanding of how and why a particular strategy, an adaptation of the Bridge21 pedagogy, to teach new literacies impacted students' attitudes in English (C1). These findings contribute by investigating and reporting on the use of a practical pedagogy – in contrast to the use of a particular technology or new literacy practice. The study shows not only that students were more engaged and confident, but also *why* there were improvements, and how different students were affected.

The results demonstrated that this approach had a positive impact on students' attitudes: statistical tests revealed significant increases in all five subscales of the ETAS (emotional engagement in English, behavioural engagement in English, confidence in English, confidence in technology, and attitude toward learning English with technology), with a small-medium effect size in most subscales. The qualitative data supported and illuminated the reasons for these changes. Students had overwhelmingly positive attitudes following the learning interventions because they believed they learned English subject content, skills (e.g. new and conventional literacies; how to work in teams), and about how to learn itself. Additionally, participants reported feeling more confident in the areas of interpreting challenging texts, using technology, working collaboratively, researching, and public speaking.

The data was further analysed to reveal how using this approach impacted students based on their pre-existing, initial attitudes toward English. The model had the most positive impact on those students with poor to moderate initial attitudes, yet it did not adversely impact those with pre-existing positive attitudes in English. Furthermore, the largest and most significant changes were in attitudes toward learning English with technology. Almost every student had positive feedback, explaining that ICT made learning easier and more enjoyable, or that they felt more confident in English when using technology. The author recognises the limitations to these findings and makes several recommendations for future research (see sections 6.7 and 8.3).

8.2.2 A reliable, validated data collection tool (C2)

The second aim was to: "Create and validate a reliable data collection tool that could be utilised to quantitatively measure the impact of the learning interventions of this research and other similar studies" (RA2). As the literature review highlighted, data on the impact of interventions in English involving ICT/new literacies were gathered primarily through qualitative research methods; moreover, much of the data collection and analysis did not assess for change in student engagement, confidence, or attitude. While some quantitative tools in the field of second-level English educational research do exist (e.g. Bottomley, 1998;

Henk & Melnick, 1995; McKenna et al., 2012), there is a lack of quantitative questionnaires related to use of technology in general in second-level English education (section 4.5.2).

Accordingly, to measure the impact of the Bridge21 approach on student engagement and confidence in English quantitatively, the ETAS (English and Technology Attitudes Scale) (Appendix A) was developed and systematically validated for this research – in collaboration with colleagues (Kearney et al., 2018). This tool proved valuable in this research, allowing for a quantitative picture of changes in students, and a way to cross-check and triangulate the qualitative data.

This instrument is a contribution to the field, as it is a quick-to-administer, valid quantitative tool that other researchers and educators can use to measure quantitatively the effects of their interventions on students' attitudes in English; it could also help provide some consistency across studies/contexts of interventions.

The ETAS could be used as either a single test (to gauge students' engagement and confidence in English and technology), or as a pre- and post- test to measure the impact of a particular learning intervention employed. Potentially, researchers in other subject-areas could also modify the tool for their purposes.

8.2.3 A pedagogy for effectively teaching new literacies in English (C3)

The third aim was to “Develop a research-based, pedagogical approach for effectively teaching new literacies in the second-level English education context” (RA3).

Over the course of the exploratory case study, the researcher adapted the Bridge21 approach to teach new literacies in English, creating and modifying learning interventions, which focused on helping students meet particular, circularly-linked learning objectives related to conventional literacy, new literacies, and significant literary content. Integrating what was learned from the exploratory case study, modifications were made to the approach and an explanatory case study was conducted.

Given the positive results, as demonstrated through the analysis of the quantitative and qualitative data, this thesis presented a research-based pedagogical approach, an

adaptation of the Bridge21 model, for effectively teaching new literacies in English – in a way that can improve students’ attitudes *and* help meet curricular goals (C3). Students’ feedback regarding what they learned further support the idea that the adaptation of the Bridge21 model for English/Shakespearean content and skills was appropriate and successful. Most students reported learning at least one of the three intended learning outcomes (conventional literacy, new literacy, or Shakespearean literary content) – without being directly questioned about their learning in these areas. Thus, the technology was utilised in such a way that it helped meet traditional English curricular goals, as well as develop significant new skills. This thesis provided empirical data that the Bridge21 model can be utilised and adapted as a framework for facilitating the teaching of new literacies in the English education context.

Given that teachers report needing more professional development and guidance in how to teach new literacies effectively, as well as report desiring further understanding and evidence of how and why the integration of new literacies can impact students (section 2.7), this research contributes to those needs. This thesis presented a *practical* approach for teaching new literacies, grounded in empirical data to support its use, which could be modified and extended by other educators.

8.2.4 Sharing the approach/resources and evaluating their use among teachers (C4)

The final aim was to “Create activities, lesson plans and materials for teaching new literacies effectively in the English classroom, share these resources with other educators, and investigate teachers’ experiences using them in the classroom” (RA4).

In addition to the practical approach outlined in this thesis, the research also included the development of various, easily-adaptable resources – activities, projects, lesson plans – for teaching new literacies in English, which correspond with the Bridge21 approach (C4). These activities/projects utilise common curriculum content, and can easily be modified for other literary content and/or to meet the learning objectives of different age groups, classes or schools. These resources have been made freely available on various public websites and have already been shared with 33 English teachers in workshop settings, (see Appendices E and K for sample lesson plans and supplemental materials) (C4).

The lessons and corresponding resources created for and used in the learning interventions have all been made available publicly at: <http://tft-project.eu/index.php/lesson-plans/>. This website was created and is managed by members of the Bridge21 project, focused on professional development among teachers. As explained in section 3.3, Bridge21 is major research project with various components. One subgroup, working within the EU-funded, Erasmus+ projects, entitled “Teaching for Tomorrow” and “Teaching for a Sustainable Tomorrow,” work directly with teachers in Ireland and in four other European countries to help them adapt the Bridge21 model to their teaching across the curriculum. This research has contributed to this mission and aspect of the projects (and the overarching Bridge21 programme) through the creation of the English specific resources. Moreover, a video – demonstrating one of the Shakespearean lesson plans used in the explanatory case study (Shakespearean Digital Narratives: “Mem-ing Macbeth”) – was produced and is publicly available on the homepage of the project’s website: <http://tft-project.eu/>. This is an informative website that also serves as a learning platform for all participating teachers (n=46, as of October 2017) to collaborate: share experiences, ask questions, and contribute or access resources. The resources are also accessible to the public at-large; over a 90-day-period (August-October 2017), 150 users from 34 countries accessed the website. This Shakespeare lesson video is also available on the Bridge21 website.

Extending this contribution, the researcher conducted an additional case study, exploratory in nature, with the 33 teachers who participated in the CPD workshop. This study found that participants were positive about the effectiveness of using the Bridge21 approach, believing that it engages students in learning English through its use of student-led, team-based, technology-mediated, and project-based learning. Their efforts in implementing the approach and the challenges they face (lack of functioning ICT; scheduling conflicts) reflect both the potential innovation and creativity of teachers, as well as the need for more investment in structured CPD and ICT resources; continued CPD with teachers in using the Bridge21 approach for teaching new literacies in English would be valuable. Thus, this Ph.D. research contributed to the field of English education by providing professional development for practicing teachers, but also by identifying some successes and challenges related to teaching new literacies of current English teachers practicing in Ireland.

8.3 Discussion, Implications and Future Research

This Ph.D. research sought to develop an effective, research-based model for teaching new literacies in English and to understand the impact of the approach on students' attitudes and teachers' beliefs and experiences using the model. In the process of investigating the research questions, the researcher met the research aims, yet the results of the study have potential impact on practice and other research in the areas of English education, technology/new literacies in education, and 21C teaching and learning. Through collectively viewing the results of the three phases and case studies of this research, this section discusses the implications of the results and suggests some areas of future research.

8.3.1 Students' Attitudes and English

The case studies with students can be considered successful in the sense that the adaptation of the Bridge21 approach for teaching new literacies in English had a positive impact on students' attitudes in English – emotional/behavioural engagement, confidence, and attitudes toward leaning English with technology. Though the specific ways their various attitudes (emotional/behavioural engagement or confidence) were affected varied (see sections 6.5 and 6.6 for results and discussion), throughout all the individual learning interventions with students in both the exploratory and explanatory case studies, their attitudes improved because of a few key overlapping and integrated concepts: a sense of learning, collaborating with their peers in teams, the practice of using new literacies, and the student-led, social constructivist learning model/approach itself. For example, the participants enjoyed themselves, actively participated and felt more confident in English because they believed they were learning; their sense of learning was affected by the Bridge21 approach, which relies on teamwork, students leading their learning and the use of technology. Through participating in this social constructivist model of learning (Vygotsky, 1980) that supports the socio-cultural conception of new literacies (Lankshear & Knobel, 2006) to complete work in English (see section 3.3), they believed they were learning new curricular-related concepts such as English content/skills, social skills, and new literacies. Cyclically, they enjoyed working with their peers to complete English projects, which aided in the learning process and developing a sense of learning among the students. The feedback from the teachers involved in the teacher case study also supported the results of

the student studies, as the teachers reported believing that the model is effective (and their use of it was effective) in terms of their belief that it engaged students; they believe their students find it an engaging method of learning because it's collaborative, uses the new literacies enabled by technology and it involves student-led learning. They further believe their students learned important skills and content (see section 7.5).

These findings both support and extend the understanding in the field of new literacies and the impact on students' engagement. For example, as previously discussed in 6.6.1, it is often argued that integrating new literacies/technology in English will increase engagement or motivation in the classroom by bridging the home-to-school literacy divide (Curwood, 2013; Henderson, 2011; Hinchman & Sheridan-Thomas, 2014). This study, however, focuses on the concept of how students' attitudes are improved through their sense of learning something new. In addition to the concept that integrating new literacies or technology can increase engagement by harnessing the affordances of these mediums used by students in out-of-school contexts to connect them to the learning experience in school, this study highlights the idea that this approach was engaging because they believed they were learning new skills – and those socio-cultural aspects of new literacies also contributed to that process (Lankshear & Knobel, 2006).

Though there is potential that other aspects (e.g. the enthusiastic facilitator, the location, or the novelty of the experience) also contributed to the increase in students' attitudes, the qualitative data does not support the idea that those factors were major contributors to the positive changes reported. It is acknowledged that a potential limitation of this study is that students were not asked directly about these factors. Instead, the qualitative portion of the ETAS Questionnaire asked more open questions such as "How did you feel about the experience this week? Why?" and "Has your confidence in English changed in any way? If so, how?" Likewise, they also were not directly asked about how teamwork, using technology or learning impacted their enjoyment, yet these themes consistently arose in the data.

Though the researcher's position of being both "insider" and "outsider" (Berger, 2015) and an enthusiastic facilitator – as well as the novelty of the Bridge21 learning laboratory experience – likely contributed to the students' positive experience in the student case

studies (Skinner & Belmont, 1993), the data from the teacher case study supports the results of the student studies. Teachers, who used the approach in their usual classroom with their usual students and common curriculum, were also reporting increased engagement from their students. This feedback from teachers supports the idea that the results of the student case studies were not due to the exceptional skills of one particular teacher or a unique learning environment, but rather due to the approach. Of course, as previously acknowledged, the data from the teacher study is limited because it reflects teachers' perceptions of their students' engagement. It is suggested that students' experiences and responses to their teachers' efforts are further investigated and documented in the future. One could use the data collection tools created for this Ph.D. research to help in that purpose.

The positive changes in students' (across Ireland and with different teachers) attitudes and sense of learning key curricular skills/content are not only significant because they support the effectiveness of this approach for teaching new literacies (a key problem in the field – see 2.9.2), but also because they have implications related to the current education system in Ireland. In response to a question about how their participation differed from English class in school, many said they participated more/more actively because they were working with their peers, using new literacies and learning in the Bridge21 model – which were also the commonly cited reasons students felt more emotionally engaged and confident. These responses, however, suggest that their typical experience in school does not include this type of learning; indeed, the pre-intervention ETAS Questionnaire (as noted in 6.2.2) revealed that only 5/73 participants used technology in their English classes to develop new literacies, such as create films/videos, compose digital presentations, or conduct research online. In most cases, their teachers were in control of the technology, using a projector or whiteboard. These responses support the concept put forth by others that a Victorian-era model of teacher-centred education, printed texts and conventional literacy in English education persists in Ireland today (Conneely et al., 2013; Donnelly, McGarr & O'Reilly, 2011; Egan et al., 2013; McGarr & O'Brien, 2007). The results of this study suggest that more work needs to be done in terms of transforming education in Ireland, as the students do not only feel more engaged whilst learning in a social-constructivist, technology-mediated, student-led approach to learning, but also believe they have learned more content and

skills, which further contributes to their engagement. Furthermore, students in this study were reporting that they were learning about the learning process itself and how technology can be used to aid their learning. As discussed in 6.6.3.2 and 6.6.4, students reported learning about how to learn and how one can learn – with others, with technology, with enjoyment, etc. Considering that most of the participants in this study did not see the internet as a resource for learning (or a resource that needs to be learned about) prior to the intervention, supporting the notion put forward by several scholars (Dwyer, 2012; Leu, et al., 2012; Leu, et al., 2017; Mills, 2010) (see section 2.6), this understanding of new ways of learning is also significant; it also reflects students lack of opportunity to learn in this type of approach in their educational experiences. This *learning about learning* – and enabling students to become lifelong learners – are key concepts promoted in the 21C movement and believed to be critical in helping prepare young people to thrive in the 21st century (Rose & Meyer, 2002; Voogt & Roblin, 2012). This concept is also central to the Junior Cycle Reform (DES, 2012) currently underway in Ireland (see section 3.2); the results of this study suggest that integrating the Bridge21 approach in Irish classrooms can help educators achieve several of the goals fundamental to the educational reform movement.

Extrapolating and generalising from the results of this Ph.D. research (Cohen et al., 2011; Yin, 2009), one can conclude that this approach could be an effective teaching and learning model in other areas of the world where a teacher-centred, print-based literacy approach continues to be the dominant model of education. The approach was successful among students of varying initial attitudes (those with neutral/negative, moderate and high), suggesting that in similar schools/educational environments, the approach could also have positive impacts on a range of students. Moreover, the average initial attitude toward English among the participants of the Explanatory Case Study: Students, was relatively high, with 3.9/5.0 being the average score for emotional engagement, for example (see section 6.2.2). Yet, there was overwhelming improvement among students' attitudes, suggesting that this approach is not only effective because the participants had poor attitudes, and this was simply different, but rather because it offered a valuable learning experience for a variety of learners.

Likewise, it is reasonable to generalise that this approach might not have as powerful of an effect on students who are well-accustomed to working in social constructivist learning models and regularly work in teams, use new literacies/technology in meaningful ways, and/or guide their own learning. Considering these various possibilities, the researcher suggests that future research involves investigating the impact of the Bridge21 approach to teaching new literacies on students' attitudes in English, with both students who attend similar schools to the participants in this study, as well as students who attend schools in relatively different learning environments.

8.3.2 Differences in Changes among Students

While most students, regardless of their initial attitude, reported positive changes in their attitudes, there was the greatest impact on students who began with the poorest initial attitudes, which is notable for several reasons, having implications for the education system in Ireland and potentially elsewhere.

This study underscores the importance of making continued efforts to implement various teaching styles and methods in an effort to engage the population of students who are disinterested, lacking confidence in English, and/or performing poorly. Rather than accept their lack of success or place blame on students for not excelling within a traditional education environment, educators can modify their practices to help transform students' experience. The success of this study and the learning interventions underscore the assertions of scholars such as Gee (2000), Knoblauch (1990), Morrell (2008), and Street (2003) who have argued that a "back to basics" approach to teaching literacy, which holds an autonomous view of literacy (see section 2.4.1) and tends to dominate within schools educating a large population of disadvantaged students, is inadequate in terms of preparing students with the skills and strategies they need today (Dwyer, 2016; Leu et al., 2017). Furthermore, Gee (2000) asserts that this approach is one of the "deepest sources of inequality in schools" as it reinforces existing inequalities of society by promoting a basic level of reading and writing among a traditionally lower-level educated population instead of giving them access to the more sophisticated, multiple literacies required for today's economy (p. 413). This research, which primarily included students from disadvantaged

areas of Dublin, showed that when given the opportunity to engage in new literacies within an appropriate pedagogical approach, students with the poorest attitudes had the most gains in terms of their engagement and confidence in English. Using a model, such as the Bridge21 approach for teaching new literacies in English, for working with disadvantaged/disengaged/non-dominant groups of students can help avoid what Dwyer (2012) has called a “digitally determined...Mathew effect”– “where the rich get richer and the poor get poorer” because students with limited resources and access to ICT are not being prepared sufficiently “for life in an information age” (Dwyer, 2012, p. 5).

The Bridge21 approach and findings from this study also align with other key educational movements seeking to empower youth from nondominant sectors of society, such as Connected Learning (Ito et al., 2013), which “advocates for broadened access to learning that is socially embedded, interest-driven, and oriented toward educational, economic, or political opportunity” (p. 4). Connected Learning promotes an agenda of social equity that involves creating multiple “entry points” to opportunities and envisions new media as capable of being leveraged to provide these new pathways “into learning, opportunity, achievement, and civic participation.” (Ito et al., 2013, p. 34). New literacies scholars, such as Jacobs (2012), also support the philosophy underpinning Connected Learning, arguing:

Understanding that motivation will occur when youths experience a sense of competence, are able to select what it is they wish to focus on, and can develop meaningful connections to a larger community frees us from the blinding glitter of technology and reestablishes literacy education as a tool for developing an equitable and just world in which individuals can make a difference in their lives and those of others. (p. 273)

The Bridge21 approach to teaching new literacies in English (and the Bridge21 approach in general) leverage the affordances of ICT to create diverse learning experiences and opportunities for disconnected/disempowered students (Rose & Meyer, 2002). As in Connected Learning, the Bridge21 approach involves making connections with one’s community (locally and/or online), is orientated toward education, economic and/or political opportunity, and to some extent is interest-driven by students in that they are empowered to lead their learning.

The concept of student-interest driven learning is important to these scholars, yet in this research, the facilitator (researcher) chose the English subject content for the learning interventions, which was Shakespeare in the Explanatory Case Study, and the teachers in the teacher case study chose the content for their students. As explained in section 6.3.1, the rationale for choosing to focus on Shakespeare stemmed from the researcher's aim to use the pedagogical approach for teaching new literacies to engage students more in the process of learning traditional English subject content and because of the central and significant role Shakespeare's works have maintained in the subject of English and English-speaking culture. Though the participants were not allowed to pursue their own interests in terms of literary content or the type of projects they would be creating, they were given considerable choice in the design of the projects, the technology, the approach they took to completing the project, and the division of tasks – helping to create a learning environment led by the students themselves. Though their efforts were not driven by their own interests, there were still gains in emotional/behavioural engagement and confidence in English in general. Interestingly, and as explained in section 6.6.1, a number of students (15/73) reported that they did not enjoy studying Shakespeare before the experience, and still did not after; however, most of these same students (13/15) were positive about the experience overall and reported enjoying themselves and learning various English skills. This result highlights, in the first place, that neither new literacies, a particular technology, nor a pedagogical approach can make all students enjoy all curricular content; however, they can make the learning experience more engaging, valuable or enjoyable and can provide “entry points” (Ito et al., 2013) for nondominant students to learning what continues to be required curriculum content. It also suggests that an approach that enables students to “pursue a personal interest or passion with the support of friends and caring adults” (Ito et al., 2013, p. 4) might be ideal for engaging disinterested students, yet a student-led, social constructivist, technology-mediated approach can also be valuable for creating more opportunities for these students – and perhaps more feasible to implement within the current education system in Ireland.

The greatest improvements in attitudes were seen among students with the poorest initial attitudes, yet the impact might have been different if students had a chance to select their own content to study and projects to create – as in Dockter et al.'s study (2010) in which

they overhauled traditional English to teach digital media, with the aim of appealing to their cohort of students from disadvantaged/minority backgrounds. This approach could be a useful area to pursue in future research, as the Irish education system shifts to include a focus more on skills instead of content (see section 3.2). It may also be useful to investigate the use of the Bridge21 model for doing *critical* literacy (Freire, 1972) within the English education environment. As acknowledged in the literature review, this study was focused on the canonical literature of English education (Shakespeare), which has the potential of reinforcing the values of the dominant culture; in some ways, this can be viewed as a limitation to the study. This study, however, did not aim to overthrow existing educational systems and curriculum, but rather create change and make it more accessible for students by investigating a different approach to teaching the same literature, along with new skills and strategies. (To a small extent, participants in this study did engage in some critical literacy practice by debating whether or not Shakespeare should be taught in schools. See section 6.3.) However, for those working from a position more interested in critical literacy, using the Bridge21 model – an alternative approach to traditional pedagogy – may also be effective in engaging students, and further work in this area could prove useful to the fields of English education and 21C learning.

Though the study was successful in terms of engaging students and building their confidence, it will be important – in particular, for stakeholders in adolescents' education – to also “assess” their learning in additional ways to self-reporting. As sections 5.7.1 and 6.7.1 explain, it was beyond the scope of this study to assess skills or knowledge gained in the learning interventions through the use of “objective” (or external to students) tools. This decision was made partly because assessing new literacy skills, as other 21st century skills, is a subject of much debate. Internationally, educators are trying to determine how best to assess 21st century skills and/or new literacy skills (Geisinger, 2016; Griffin, Care & McGaw, 2012). Thus, research into the English content or skills gained through the use of the model must firstly include research into methods for assessing new literacies. Unlike conventional literacy, which has typically been assessed with pencil and paper tests, the dynamic ever-changing nature of new literacies, the various ways in which ideas can be expressed, and the arguably more subjective interpretation of the products created through new literacies, can make it particularly challenging to assess a student's work/progress/product. However, to

teach new literacies within the current education system, which is reliant upon a final grade, educators will need criteria for *how* to assess their students.

Furthermore, this research met the aim of developing an understanding how a pedagogical approach to teaching new literacies impacts different students, based on attitudes (RA1), yet the researcher suggests further investigation into this aim. In the future, research should include an investigation into differences in the impact of a Bridge21 approach to teaching new literacies, based on students' genders. While it was beyond the scope of this research to conduct a literature review on gender, education and technology and to investigate these areas within the context of this study, some preliminary data was gathered from the quantitative ETAS, as this tool makes this information readily and easily available, and it is presented and discussed in Appendix Q: ETAS Results by Gender. Deeper understanding of the differences reported here may be useful to researchers and educators.

8.3.3 Teachers' Experiences and Beliefs

The work completed with teachers in the third phase of this Ph.D. research – the Exploratory Case Study: Teachers, was valuable to this study and the practice of the teachers involved, and the results also have implications for researchers and the education system in Ireland/ locations with similar school structures/cultures.

As acknowledged in section 7.6, the response rate among the participants was not ideal, yet for the eleven teachers who did provide feedback, they reported that the CPD sessions were largely beneficial and that they were able to implement what they learned into their teaching. In the first place, the fact that teachers felt enabled and prepared to implement the Bridge21 approach to teaching new literacies following the CPD, is notable, given that a barrier to integrating ICT/teaching new literacies in English education is the need for more professional development (Flanagan & Shoffner, 2013; Hutchison & Reinking, 2010).

The combination of sharing both the theoretical framework of the Bridge21 approach and the practical resources in the CPD helped teachers understand and envision how the ICT could be used to support curricular learning objectives, as well as help students develop key

new literacy skills; the teachers also reported developing a sense of how student-led, collaborative learning and the use of ICT can support each other in helping students achieve curricular goals. These new understandings reflect and demonstrate growth in teachers' TPACK – their Technological Pedagogical Content Knowledge (Mishra & Koehler, 2006). Through their engagement with the CPD and efforts to implement changes in their teaching, they were developing “a nuanced understanding of the complex relationships between technology, content, and pedagogy” (Mishra & Koehler, 2006, p. 1029) in terms of their English teaching (see section 2.7.2.1). From their feedback it was clear that they were using technology to help develop “meaningful integration into curriculum to deepen learning” and as a “tool for literacy and learning” (Dwyer, 2016, p. 384). These results are significant, given a concern expressed by some scholars (Donnelly, McGarr & O'Reilly, 2011; McGrail, 2005): English teachers take a critical view on using ICT, and they include it when they believe it's helping meet *English* curricular goals; they need more professional development in learning *how* ICT can be used to do that. From their feedback, the teachers were developing a sense of the interplay among English content, pedagogy, and the use of technology and they were able to implement lessons designed at the intersection of these three concepts (Mishra & Koehler, 2006). Importantly, teachers also reporting believing that the Bridge21 approach and the practical lessons, activities and resources shared with them were valuable and effective for teaching their students. They considered their use of these resources successful because they believe their students were engaged in the learning process because the approach is student-led, collaborative and technology-mediated (see section 7.5). This change in belief and understanding of how technology can be used is significant as teachers' beliefs about technology/education/teaching can be a significant barrier to meaningful integration of technology in the classroom and the most resistant to change (Donnelly, McGarr & O'Reilly, 2011).

While this exploratory study was successful among the teachers involved, it also highlights some of the key issues in terms of integrating new literacies, technology and a 21C/social constructivist approach in Irish education today. Educators need more support in integrating more innovative – student-led, project-based, technology-mediated – learning (Conneely et al., 2013; Donnelly, McGarr & O'Reilly, 2011; Egan et al., 2013; Flanagan & Shoffner, 2013; Hutchison & Reinking, 2010). On a basic level and consistent with the literature, teachers

need more access to reliable, properly functioning ICT hardware and software: 7/11 teachers reported that this was a challenge to implementing the Bridge21 approach to teaching new literacies (see section 7.5). Yet, the acquisition of digital devices and network connections alone will not create change in the classroom, and the increase in the numbers of devices should not be how an education system measures its progress (McDonagh & McGarr, 2015). Rather, it needs to be the combination of both the access to digital technologies and the nature and meaningful use of technology in the classroom. Teachers in this study also cited the length of class time as a barrier to implementing the Bridge21 approach and saw transition year as an ideal time for this type of learning because of the flexibility in the schedule and lack of a rigid timetable and exams. These structures – lack of technology, class time, exams – are barriers that are difficult for teachers to overcome alone, and they need the support of administrators and education policy-writers to help make changes that allow for teachers to use approaches such as Bridge21 in their classroom, which both teachers and students believe are effective models for learning. In other words, in order to meet the aims of English education (in particular, developing the literacy skills students need to participate fully in society), and to meet internationally-recommended curriculum guidelines and the standards as put forth by the Irish DES itself in the Junior Cycle curriculum (2012; 2015b), changes must be made within English education in Ireland – through both structural changes and further CPD for teachers.

Though this study highlights the well-known barriers teachers face in implementing 21C teaching and learning in general and the responsibility of the educational leadership in the state to make changes to support teachers, it also shows that even within the existing barriers, the teacher participants were able to conduct various aspects of the Bridge21 approach to teaching new literacies in English in their classrooms and believed their efforts were valuable for themselves and their students. As section 7.6 describes, managing to implement the approach without the technology demonstrates that the ICT is just one piece of the Bridge21 approach, and that the other elements (student-led, project based, teamwork, etc.) support the ICT. While the Bridge21 approach might not be used in its fullest capacity and students would not be using *all* aspects of new literacies (digital), they can still develop other key 21st century skills and aspects of new literacies skills – collaboration, reading/writing in multiple modes, collaboration, creativity, etc (see sections

2.6 and 3.2). Therefore, the responsibility of continuing to meet the aims of English and meet new curriculum goals (DES, 2012, 2015b) is both on those who make major policy decisions and on the teachers themselves to be creative within existing structures.

The results of this study, which were largely positive, suggest that continued efforts and further research be undertaken into adapting the Bridge21 model for teaching new literacies English in second-level classrooms in Ireland/abroad. It would be worthwhile to conduct more CPD workshops such as this one in Ireland, as teachers would benefit from learning how technologies and new literacies could be integrated in meaningful ways and to support curricular goals.

The author suggests that CPD workshops with individual or small groups of teachers, tailored to teachers' experience and individual needs, can be used to introduce them to the Bridge21 approach to teaching new literacies in English and provide them with content-specific exemplars; they should be followed by continued work with teachers as they attempt to use the model in their teaching. Co-planning and/or co-teaching can be a part of this effort to support teachers. This type of engagement with teachers can help educators develop a critical stance in terms of the educational benefits of the ICT and how to best use them to support the students' learning (McDonagh & McGarr, 2015; McGrail, 2005) – of English content, new literacies, and/or other key 21C skills. Continued evaluation and reporting of teachers' successes and challenges in this endeavour would be necessary and beneficial. As a part of this future research, it is suggested that students' experiences and responses to their teachers' efforts are also investigated and documented – as this was a limitation of this study (see 7.6). One could use the data collection tools created for this research to help in those purposes.

8.4 Personal Reflection

As disclosed in the introduction (section 1.4), this research was somewhat personal in nature, originating from the experience and interests of the researcher while she was a practicing teacher. Additionally, as explained in Chapter 4, in conducting this research, she went through the stages of an action research cycle; accordingly the findings and

contributions of this study will directly impact the future teaching and research of the researcher. Though presently, she is not teaching full-time in a second-level school, she currently works in English education in a variety of capacities: as a teaching assistant and occasional lecturer in third level, as a teaching placement supervisor (for English student-teachers), and a lecturer on the Postgrad 21st Century Teaching and Learning Certificate course, working with currently practicing teachers. She hopes to continue in these roles, as well as start new ones within the field of education, and will integrate what she learned into her teaching and work with educators.

From this Ph.D. research, she reconsidered how the ways people are using technology have changed literacy and therefore English education itself. She learned how to use technology within a pedagogy, one rooted in social constructivism, that supports the learning of English curricular goals, inclusive of canonical literature, conventional literacy, and new literacies. She adapted a team-based, technology-mediated model of 21st century teaching and learning for teaching new literacies in English, and she experienced first-hand the positive impact it had on students' engagement, confidence and learning. She has also learned (through literature review and field work) where students are lacking in their new literacy skills (despite assumptions and projections of competence), and can tailor lessons to help students develop those skills. She also realises now that some students, in addition to teachers, may need to be shown explicitly how technology can aid them in their learning, as many of the students perceive technology as something to be used for "fun." She recognises that she herself may have valued conventional literacies more in her teaching and not placed enough value upon the development of new literacy skills. She aims to change her approach, including the language she uses among students, classroom activities and tasks, and long-term projects to place more emphasis and importance on the development of new literacies, as well as conventional.

From the exploratory case study with English teachers, the author was encouraged by the number of teachers who are enthusiastic, or at least open, to using more technology/new literacies in their practice, and only need more guidance and support. She realised that clear exemplars of activities, projects and/or lessons plans are essential, along with the practical activity model, to help teachers envision how the Bridge21 approach can be applied. She saw the value in the CPD workshops, as teachers took the researchers' ideas and resources

and modified them for their own teaching. Through this work, she was reminded of the range of experiences present in any room full of teachers and will consider how to adjust any future CPD to account for the variety in skill sets.

Finally, much was learned about the research process itself, from conducting a search of the literature to developing valid, reliable data collection tools and performing data analysis. Transitioning from a practitioner primarily to a researcher primarily was challenging and involved multiple learning curves; however, having had the experiences of both teaching and researching, the author believes she is now better prepared to work in either capacity – understanding how to conduct research to improve her practice and assist others and/or how to call upon her own classroom experiences to help conduct a research study.

8.5 Conclusion

The thesis presented: an investigation into adapting a particular model of 21C teaching and learning, the Bridge21 approach, for teaching new literacies in the English context; the impact of this approach on student engagement and confidence in English and on students' attitudes toward learning English with technology; and the experiences of teaching using the approach in their own second-level English classrooms.

The results of this study align with and the theoretical literature and preliminary findings from other empirical studies within the field of English education that new literacies, when used and taught within a pedagogically sound approach, can improve students' engagement and confidence in English. The results show the author's adaptation of the Bridge21 approach, and its practical activity model, is one pedagogical approach for effectively teaching new literacies in English. The study also extends understanding in this area, demonstrating that the approach leads to more engagement and confidence because students believe they learn English skills and literary content, collaborate with others, engage in new literacies, enjoy the learning process, and learn about learning itself. It also provides a more nuanced understanding of the impact of an approach by demonstrating how different students, based on their pre-existing attitudes, are affected: students who had the poorest initial attitudes had the greatest gains in engagement and confidence.

This research also contributed to the field by developing a validated quantitative tool (the ETAS) that can quickly measure the effects of learning interventions on students' attitudes in English and using technology in English, and by creating and sharing various, easily-adaptable resources – activities, projects, lesson plans – for teaching new literacies in English, which have been made publicly available.

This research further provided evidence that currently practicing teachers believe that the approach and resources developed in this research are valuable and effective in teaching their students – particularly in engaging them more in the learning process. The results suggest more interaction and CPD with teachers in Ireland/abroad would be useful in addressing some of the current challenges in the field of English education.

Finally, as literacy continually evolves along with the development and uses of new ICT, English education changes. However, the aims remain the same: to help foster the growth of individual students by (1) enriching their understanding of culturally significant literary texts; and (2) developing the literacy skills students need to participate fully in society. The Bridge21 approach to teaching new literacies can help teachers continue to meet the aims of English today.

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Appendix

Appendix A: The Final ETAS

Appendix A.1 The Pre-Intervention Questionnaire

Dear Student,

Thank you for taking the time to complete this short survey. The aim of this survey is to measure students' attitudes toward the subject of English and the use of technology.

This survey should take about 10-15 minutes to complete. Results will be used for educational research purposes and intend to be published. However, the personal information you provide will not be used to identify you or your school. All information collected will be anonymised and stored in accordance with the Data Protection Act at Trinity College Dublin.

ETAS (English & Technology Attitudes Scale) Questionnaire

Name of your school: _____ Age: _____
Your Name: _____ Gender: _____
What is your ethnic/cultural background? _____
What languages do you mainly speak at home? _____

Directions: Based on **your typical experience in English class**, please rate how strongly you disagree or agree with each of the following statements by placing a check mark in the appropriate box.

	Statement	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	I concentrate hard in English.					
2	When the teacher asks a question I try to think of the answer.					
3	If I make mistakes, I work until I have corrected them.					
4	If I don't know how to answer a question, I try to find out.					
5	I am good at using computers.					
6	I am good at using devices like games consoles, tablets, smart phones, etc.					
7	I am good at solving technical issues.					

	Statement	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
8	I can master any computer programs or apps needed for school.					
9	My mind is suited to English.					
10	I can get good results in English.					
11	I know I can handle challenging work in English.					
12	I am confident in English.					
13	I am interested to learn new things in English.					
14	Learning English is rewarding.					
15	Learning English is enjoyable.					
16	I get a sense of satisfaction when I able to answer an English question.					
17	I like using technology tools for English.					
18	Using technology tools in English is worthwhile.					
19	English is more interesting when using technology tools					
20	Using technology tools in English helps me learn better					

Please answer the following questions briefly.

1. How do you feel about your English classes in school? Why?
2. Do you find your English classes engaging? Why/why not?
3. How confident are you in English? Why?
4. In what ways do you usually use technology in/for English class? Do you like using technology for English? Why/why not?
5. Have you studied a Shakespearean play before? If so, which one(s)? Did you enjoy it? Why or why not?
6. Have you studied the styles of language before? If so, do you remember what they are? Do you enjoy studying them? Why/why not?

Appendix A.2 The Post-Intervention Questionnaire

Dear Student,

Thank you for taking the time to complete this short survey. The aim of this survey is to measure students' attitudes toward the subject of English and the use of technology.

This survey should take about 10-15 minutes to complete. Results will be used for educational research purposes and intend to be published. However, the personal information you provide will not be used to identify you or your school. All information collected will be anonymised and stored in accordance with the Data Protection Act at Trinity College Dublin.

ETAS (English & Technology Attitudes Scale) Questionnaire

Your Name: _____

Directions: Based on your **experience studying English using the Bridge21 model this week**, please rate how strongly you agree or disagree with each of the following statements by placing a check mark in the appropriate box.

	Statement	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	I concentrate hard in English.					
2	When the teacher asks a question I try to think of the answer.					
3	If I make mistakes, I work until I have corrected them.					
4	If I don't know how to answer a question, I try to find out.					
5	I am good at using computers.					
6	I am good at using devices like games consoles, tablets, smart phones, etc.					
7	I am good at solving technical issues.					
8	I can master any computer programs or apps needed for school.					
9	My mind is suited to English.					
10	I can get good results in English.					
11	I know I can handle challenging work in English.					
12	I am confident in English.					

	Statement	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
13	I am interested to learn new things in English.					
14	Learning English is rewarding.					
15	Learning English is enjoyable.					
16	I get a sense of satisfaction when I able to answer an English question.					
17	I like using technology tools for English.					
18	Using technology tools in English is worthwhile.					
19	English is more interesting when using technology tools					
20	Using technology tools in English helps me learn better					

Directions: Please briefly answer the following questions.

1. How did you feel about the experience? Why?
2. What did you learn from the experience?
3. Was your participation during this experience any different than it normally is in English?
How so?
4. Has your confidence in English changed in any way? If so, how?
5. Based on this experience, how do you feel about using technology for English? Why?

Appendix B: The Development of the ETAS

Appendix B.1: Pilot questionnaire items

Note: For the purpose of this appendix, items are presented along with their subscale initials, which were not present when the ETAS was used with students. The five subscales are Behavioural Engagement [BE], Confidence with Technology [TC], English Confidence [EC], Emotional Engagement [EE], and Attitude to learning English with Technology [ET].

The English and Technology Attitudes Scale

Directions: Based on **your typical experience in English class**, please rate how strongly you disagree or agree with each of the following statements by placing a check mark in the appropriate box.

		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	I concentrate hard in English (BE)					
2	When the teacher asks a question I try to think of the answer (BE)					
3	If I get an answer wrong, I work to improve it (BE)					
4	If I can't answer a question, I keep trying different ideas (BE)					
5	I am good at using computers (TC)					
6	I am good at using devices like games consoles, iPods, smartphones, etc. (TC)					
7	I am good at solving technical issues (TC)					
8	I can master any computer programs or apps needed for school (TC)					
9	My mind is suited to English (EC)					
10	I can get good results in English (EC)					
11	I know I can handle challenging work in English (EC)					
12	I am confident in English (EC)					
13	I am interested to learn new things in English (EE)					

14	In English, you get rewards for your effort (EE)					
15	Learning English is enjoyable (EE)					
16	I get a sense of satisfaction when I able to answer an English question (EE)					
17	I like using technology for learning English (ET)					
18	Using technology in English is worthwhile (ET)					
19	English is more interesting when using technology (ET)					
20	Technology helps me learn English better (ET)					
21	I am able to use different software programs and interfaces for English					
22	When using technology to learn English, I am confident that I can do well (ET)					

Appendix B.2: Description of factor variance

Factor	Total Eigenvalues	% of Variance
1	6.1	32.2
2	3.6	17.1
3	1.7	8.9
4	1.3	6.6
5	1.0	5.5
Total		70.4

Appendix B.3: Final ETAS Items and Factor Loadings

ETAS items*	Loading
(BE) When the teacher asks a question I try to think of the answer	.649
(BE) If I get an answer wrong, I work to improve it	.712
(BE) If I don't know how to answer a question, I try to find out.	.758
(TC) I am good at using computers	.812
(TC) I am good at using devices like games consoles, iPods, smartphones etc.	.752
(TC) I am good at solving technical issues	.844

(TC) I can master any computer programs or apps needed for school	.744
(EC) My mind is suited to English.	.607
(EC). I can get good results in English	.784
(EC). I know I can handle challenging work in English	.824
(EC). I am confident in English	.806
(EE). I am interested to learn new things in English	.697
(EE). Learning English is rewarding.	.816
(EE). Learning English is enjoyable	.784
(EE). I get a sense of satisfaction when I am able to answer an English question	.783
(ET). I like using technology tools for learning English	.850
(ET). Using technology tools in English is worthwhile	.862
(ET). English is more interesting when using technology	.880
(ET). Using technology in English helps me learn better	.858

*Subscale Abbreviations

BE: Behavioural Engagement

TC: Technology Confidence

EC: English Confidence

EE: Emotional Engagement

ET: Attitude toward learning English with technology

Appendix B.4: Cronbach's α Value

Subscale	Cronbach's α value
Behavioural Engagement	0.66
Technology Confidence	0.83
English Confidence	0.84
Emotional Engagement	0.85
Attitude toward Technology for English	0.92

Appendix C: Sample Participant Information and Consent Forms

Appendix C.1 Student Information Form

Participant Information Sheet

You are invited to participate in the Bridge21 research project. The project is based in Trinity College's Centre for Research in IT in Education. The aim of the project is to investigate new ways of learning in the classroom based upon: using technology; project based learning and working in teams. The principal investigator is Brendan Tangney and the programme director is Cairán Bauer.

During the programme you will be involved in different innovative learning experiences and researchers from Trinity College may collect information about your views on those experiences. Interactions between you and your classmates working together may be observed. Interactions between you and your teacher may also be recorded. You may also be asked to complete questionnaires and feedback forms at different times during the programme. You may also be selected to take part in an interview with a small group of your classmates. Please note that if you or your family has a history of epilepsy you are proceeding at your own risk.

All information that is collected by the researchers will be anonymised (all names will be removed) and stored in Trinity College, Dublin. In the unlikely event that information about illegal activities should emerge during the study, the researchers will have to inform the relevant authorities. The results of the research are likely to be used in lectures, Ph.D. theses, conference presentations and journal articles, but you or your school will not be identified.

Your participation in the research is voluntary and you can change your mind about it at any time without penalty – in that case we will not use any information already collected about you.

From time to time, we may also record video footage and images of you, your classmates and your teachers at work – this will be used in communications and promotional/marketing material about the **Bridge21** programme. Your name will not appear alongside any images/video footage.

Please keep in mind that you can change your mind at any time without penalty. If you wish to remain completely anonymous, we will not use any images/video footage associated with you.

If you have any questions, please do not hesitate to ask your teacher, Ciaran or any member of the Bridge21 team.

Kind regards,

Brendan Tangney (principal investigator) and Ciaran Bauer (acting director)

Bridge21 Programme Team

(01) 8964099 / ciaran@bridge21.ie

Appendix C.2 Participant Consent Form

Bridge21 Participant Consent Form

I, _____ (your name) agree to take part in the research part of the **Bridge21** programme.

I have read the information sheet provided about the project and know how information will be collected and stored. I understand that I can choose not to take part in the research at any time without penalty.

I also know that images/video footage of me may be used for promotional material about the **Bridge21** programme and that I can change my mind about this at any time without penalty.

I understand that if I or anyone in my family has a history of epilepsy then I am proceeding at my own risk.

I also understand that if information about illegal activities should emerge during the study, the researchers will have to inform the relevant authorities.

Data Protection: I agree to Trinity College, University of Dublin storing and using my information from this project.

Signature of participant: _____

Date: _____

Signature of Project Leader (TCD): _____



Date: _____

Appendix D: Schools Involved in the Exploratory Case Study

1. Coláiste Bríde Presentation Secondary School, New Road, Clondalkin, Dublin 22
2. Drimnagh Castle Secondary School, Long Mile Road, Drimnagh, Walkinstown, Dublin 12
3. John Scottus Secondary School, 74 Morehampton Road, Donnybrook, Dublin 4 (*address at the time of the study*). [Current address: Old Conna, Ferndale Road, Rathmichael, Co. Dublin]
4. Mercy Secondary School, Thomas Davis St W, Inchicore, Dublin 8
5. Mount Temple Comprehensive School Malahide Road, Clontarf, Dublin 3
6. Moyle Park College, Convent Rd, Clondalkin, Dublin 22
7. St. Angela's College, St. Patrick's Hill, Cork
8. St Mary's Secondary School, Mallow, Co. Cork

Appendix E: Learning Intervention Materials (Exploratory Case Study)

Appendix E.1: Lesson Plan

Digital Storytelling with Art	
Topic/Theme: <u>Art-Inspired Digital Narratives</u>	
Class/Year Group: <u>Years 9-12 (Ages 14-18)</u>	
Subject(s): <u>English/Art</u>	
Outline	
<p>What is the challenge your students will tackle?</p> <p>Students use art (in this case from the National Gallery of Ireland) as inspiration to storyboard, script, and write short digital narratives: they work in teams to tell the ‘story’ (creative or historically accurate) behind the images.</p>	<p>Why is this meaningful to the students - what’s the hook?</p> <p>The art hooks students into an English activity. Using fun apps such as ShadowPuppet Edu and Mematic - apps and activities they’d use in their own lives - draws them in.</p>
<p>What “enduring understanding” will be developed by students?</p> <p>Links between English and other disciplines, such as art and history. How the concept of the ‘styles of language’ applies in the real world.</p>	
Learning Objectives	
<p>What curriculum content will be addressed?</p> <p>The styles of language; New literacies; Literature (this sample uses excerpts from <i>Lines of Vision: Irish Writers on Art</i>)</p> <p>By the end of this activity, students <i>will be able to</i>:</p> <ul style="list-style-type: none"> • Create a digital story • Identify/use narrative & aesthetic language • Develop their understanding of significant cultural texts and art 	<p>How are four key 21st Century Skills addressed?</p> <p><i>Creativity</i>: Students will write an original multimodal story, combining image, audio, video, and/or text.</p> <p><i>Communication</i>: Students need to clearly express their story</p> <p><i>Collaboration</i>: Students work in teams to create the story.</p> <p><i>Critical Thinking</i>: Students deeply analyse/research the painting to tell a story behind it or a spinoff</p>
	
Reflection	
<p>How will you know that they are learning?</p> <p>Regular meetings with teams/team leaders and observation of teamwork.</p> <p>Student reflections will indicate what they believed they’ve learned.</p> <p>Digital narratives can be assessed for demonstration of skills developed.</p>	<p>In what ways will students reflect on progress?</p> <p>Plenary session: individual contributions and team success in completing the project.</p> <p>Teams complete a written reflection about their learning and skill development.</p>
	

Digital Storytelling: Activity Plan

Possible Aspects	Description	Time
	Set-up: team formation (teacher’s choice)	
	Warm-up <ul style="list-style-type: none"> • <i>Brainstorm:</i> How many things can you do with this painting (<i>The Dolls’ School</i>)? • After viewing sample, students create their own memes, using Mematic app and share on Padlet 	15 min
	Investigate: <ul style="list-style-type: none"> • All together: Review styles of language with powerpoint presentation • In teams: Identify the styles of language in excerpts (see handout) • Explain Activities and view examples. Provide hand out, detailing expectations 	30 min
	Planning: <ul style="list-style-type: none"> • Students browse and choose their painting(s); take photos, make notes, begin brainstorming • Students decide how to divide tasks 	30 min
	Create: <ul style="list-style-type: none"> • Storyboard • Writescripts • Record and edit digital stories 	60 min
	Present: Groups present their digital stories and answer questions such as: <ul style="list-style-type: none"> • What was your individual contribution? • What was the story inspiration? • How well did you meet the goals of the task? 	15 min
	Reflect: Teams complete a written reflection: <ul style="list-style-type: none"> • How well did you work together? • What were some of your challenges and how did you handle them? • How well did you use the styles of language? 	10 min

Appendix E.2: Sample Ice-Breaker Activity

Human Bingo

Directions: Find some who _____ and write his/her name in the square. Get as many squares filled as you can in 5 minutes! You may only use each person's name once. Person with the most bingos wins! Oh, and see if you notice a theme. 😊

Likes to sing	Is interested in graphic design	Hopes to study art in university	Has heard of the <i>Lines of Vision</i> Exhibition	Enjoys acting in plays/theatre
Paints	Plays an instrument (which one?)	Reads novels	Likes to read or write fan fiction	Likes to dance
Has been to the National Gallery	Enjoys creative writing	Free Space	Records his/her own music	Draws
Likes English	Has been to Bridge21 before	Enjoys making movies/videos	Likes to read/writes poetry	Likes photography
Considers themselves good at using technology	Enjoys art history	Likes comic books/graphic novels	Knows who John B Yeats is	Has been to an art museum

Appendix E.3: Styles of Language Sample Text

The Styles of Language in Jack B. Yeats's Artwork Excerpts from *Lines of Vision: Irish Writers on Art* and nationalgallery.ie

Directions: Look at the Yeats's painting below and read the corresponding excerpts. You will see how these paintings inspired various types of writing, for various purposes. As you read, identify which style of language is primarily utilized (how do you know?) and for what purpose (why that style?).

Men of Destiny, in *Lines of Vision*

After Jack B. Yeats

By Nuala Ní Chonchúir

July, with its pressing light, its high note of optimism, was ending. Storms came easier day by day and one roiled up now from the horizon with great cauliflower clouds and a bouncing wind. Patrick skelped from one side of the pier to the other until the boat docked, then he fell in beside Malachy who tore up the pier like a man on fire.

'No catch?' Patrick said.

'There were mackerel out by Mullaghmore, but I left them be.'

'Why so?' said Patrick, juicing for the truth from Malachy's own lips.

Malachy stopped and stared at his nephew. 'Stop following me. Go home where it's safe.'

'I won't,' said Patrick. 'You'll be glad of me by and by'...

Men of Destiny, 1946.



About to Write a Letter, 1946.



About to Write a Letter is Jack B. Yeats's finest piece of work. It is rife with history and displays his outstanding skills and excellent craftsmanship.

The subject of the artwork was inspired by *The Fancy*, a book of poems by Peter Corcoran originally published in 1820, but reedited by John Masefield and illustrated by Jack B. Yeats in 1906.

The richness of the colour Yeats uses, from the scarlet of the table cover to the blues and greens of the wall behind, is truly remarkable and sets this piece apart from the rest. Similarly striking are the tonal contrasts, such as that between the figure's pallid face and the dense blackness of his coat. His adeptness allows for details, like the pictures on the wall in the background and the pen and paper on the table, to gracefully emerge from the composition.

This masterpiece should be on permanent display in the National Gallery for all to enjoy.

(Adapted from nationalgallery.ie)

Jack B. Yeats's *Liffey Swim*, in *Lines of Vision*
By Alan Glynn

"[The Liffey Swim] animated a Dublin I had never known, by infusing the city with oxygen...the oxygen of riotous colour...Here was a vibrant, living and colourful Dublin, a city of real people, who were more than just flitting figures in the background, more than just extras a historical tableau...

In a series of paintings he did in the 1920s, among them *a Full Tram*, *Dublin Newsboys* and *Lingering Sun*, *O'Connell Bridge*, he depicted the dynamism and colour of the modern city in a way which – for Ireland at that time, at least – was unique...*The Liffey Swim* will always be a door [one] can push open to that time and to that world."

The Liffey Swim, 1923



From 1929, Yeats lived in Fitzwilliam Square, in the centre of Georgian Dublin. His city subjects assumed a romantic mood, especially in the last years of the 1930s, and reminiscence became an important element of his compositions.

Morning in a City depicts the artist strolling in a place of past and present memories. The classical houses that line the street in which he walks glow a dull red in the early morning light, and the warm colour of the brickwork stains the light and mood of the city.

Dim figures hurry, or walk collectedly, through the streets: an efficient girl going towards the office, a man bent over his barrow, the postman with his sack, a businessman and, beyond him, a newspaper boy (a favourite subject with Yeats).

(*National Gallery of Ireland: Essential Guide*, 2008)

Morning in a City, 1937



Jack B. Yeats's *Grief*, in *Lines of Vision*
By Dermot Bolger

Someday each one of us will stand amid this:
Indigo blue shards of grief, a blistering deluge
Of mustard flecks of rain that seal us within
A bewildered state which we desperately need —
Yet so desperately fail — to make any sense of.

Grief, 1951



Appendix F: Results of the Wilcoxon Signed-Rank Test (Exploratory Case Study Data)

	Z-value*	P Value*	Effect Size**
Behavioural Engagement	3.284	.001	.21 (small)
Technology Confidence	2.692	.007	.17 (small)
English Confidence	3.235	.001	.20 (small)
Emotional Engagement	3.588	<.001	.22 (small)
Attitude to learning English with Technology	4.371	<.001	.28 (small)

*The Wilcoxon signed-rank test demonstrated that there was a statistically significant change in all subscales of the ETAS. When interpreting the results from the Wilcoxon signed-rank test, the Z-value (which is a measure of standard deviation) and the P-value (the measure of significance) should be analysed in conjunction, as together they give us a fuller picture of the data (Pallant, 2007). A very large or very small Z-value (greater than +1.96 or less than -1.96 — the standard normal distribution) will correlate with a low P-value — less than .05, indicating that the change in the data was statistically significant and not likely due to random chance (Pallant, 2007, p. 224-225).

**Another important measure is the effect size of the change, which indicates the magnitude, or the strength of the correlation between the two variables (Pallant, 2007). When using a Wilcoxon signed-rank test, the effect size should be calculated dividing the Z-value by the square root of the number of observations over the two time points (Pallant, 2007). In this study, there were 125 cases, so there 250 observations, and the square root of 250 is 15.8. The effect sizes are also labelled small, medium, or large based on Cohen’s (1988) criteria (Pallant, 2007).

Appendix G: Coding Schema (Exploratory Case Study – Version 1)

Node	Code	Description	Key Words
Engagement	Emotional engagement (Positive)	Positive feelings about content/activities/experience	Feel/felt... Positive: fun, enjoy, good, great, Interesting, liked
	Emotional engagement (Negative)	Negative feelings about content/activities/experience	Feel/felt... Boring, did not like
	Behavioural engagement (Positive)	Positive notions of one's participation in English	participate, engage, involved, active
	Behavioural engagement (Negative)	Negative notions of one's participation in English	Boring, lazy, did not participate, others did work
Confidence	Confidence (positive)	Positive notions of one's confidence in English	More confident/confidence; learned
	Confidence (negative)	Negative notions of one's confidence in English	Less confident, unsure, do not understand
English	English	The school subject of English as a whole	English subject/class
	Literary Content	Depended on learning intervention (e.g. Shakespeare's Macbeth or Yeats' poetry)	Read, comprehend, interpret, understand, learn about, and/or analyse text/literary figure/event
	Public speaking	(presenting, answering questions, debating, speaking in front of people)	Present, share, communicate, speak in front of others, answer questions
	Styles of language	Understanding/using the styles of language	Styles of language, aesthetic, argument information, narrative, persuasion
	Research skills	Researching online, evaluating sources	Internet, research, evaluate sources
Beliefs about learning	Learned	Student belief in developing or learning a new concept or skill	Learned, obtained, helped, understand, developed, made easier
Working with others	Working collaboratively	Students completing tasks and project together in collaborative groups	Teamwork, groups
	Social aspect	Meeting new people and making friends through working together	New people, friends
Technology	Using Technology	Develop proficiency and fluency with the tools of technology)	make/edit films, digital stories, use ipad applications
	Learning with technology (positive)	Using technology to support English learning	Helps learning, makes it easier, makes it more fun
	Learning with technology (negative)	Using technology to support English learning	Makes learning harder, more difficult, distracting, frustrating, not work

Appendix H: Sample of Coded Data (Exploratory Case Study)*

Gender	3 Things Learned? (all coded for 'Learn')	Feel about the activities?	Feel involved?	Using tech for English?
F	English can be fun (Learn Process; Fun); using technology can benefit your English (Pos ET; Learn Process); using different language for English is fun (Styles; Fun)	activities were enjoyable because we learned a lot in a fun way (Pos EE; Fun; Learn; Learn Process)	I felt actively involved because I was part of a team and we all listened to each other (Pos BE; Collaboration)	I liked using technology tools as it was good to do something different (Pos E; novelty)
F	the different types of languages (Styles); history of the Fota house (Lit cont); that there are many ways to improve your English (Learn Process)	excited; its different than just sitting in class (Pos EE; novelty)	Yes (Pos BE)	very interesting (Pos ET)
F	Different types of aesthetic language (Styles)	Some of them were very beneficial especially the aesthetic (Pos EE; valuable)	yes, we were always participating in activities (Pos BE)	It was enjoyable but I would prefer not to use them (ET mix)
M	Teamwork. I have an interest in art. I pads aren't terrible for work (Learn Process; Pos ET).	I enjoyed them because they're different to the stuff I usually do. (Pos EE; novelty)	Yeah, I felt I was part of a group. (Pos BE; Collaboration)	I thought it was better than the normal way I learn English. (Pos ET; novelty)
F	Caravaggio was a famous Roman painter/murderer (Lit cont); How to use that video app (ICT Tools).	I loved that we were able to appreciate the art in our own way. (Pos EE; novelty)	I did because I was taking the pictures and helping (Pos BE)	I don't usually enjoy English at all but today was really fun. (Pos ET; Fun)
M	there are 5 types of writing (Styles). How to make a meme (ICT Tools). How to interpret art. (Other skills)	I felt they were interesting as we worked in groups. (Pos EE; collaboration)	yes, the smalls groups involved more group work. (Pos BE; Collaboration)	I felt it was great to be able to use the tech. (Pos ET)
F	Making short 'movies' (ICT Tools) while learning art and English (Eng Sub). Caravaggio was a famous painter (Lit cont).	At first I wasn't sure if I was going to like it but in the end I enjoyed it.	Yes I did, I took a lot of the photos. (Pos BE)	I really enjoyed using the app (Pos ET)
F	The background of Picasso. Details about Caravaggio (Lit cont); How to import music on Audacity (ICT Tools)	They were really fun, especially making the memes. (Pos EE; Fun; Pos ET)	Yes because we got to actually see the paintings. (Pos BE)	It makes everything easier and faster and learning is

				better. (Pos ET; Learn process)
M	Using technology in English is easier (Learn Process; Pos ET; Learn Tech; Art has a funny side. (Learn Process; Fun); Walls hurt.	amazing. It was funny. I learned a lot and had craic. (Pos EE; Fun, Learn)	of course. Teamwork is the best work. (Pos BE; Collaboration)	Awesome. Makes things easier and fun. (Pos ET; Learn process; fun)
F	How hard maid's life was (Lit cont)	good I enjoyed the day they were fun (Pos EE; Fun)	yes, we took turns with presenting (Pos BE; other skills)	Fun (Pos ET; Fun)
F	History (Lit cont); different ways of learning (Learn Process);	i liked it (Pos EE)	yes i did. very fun	very cool (Pos ET)
F	history of the house; the ipad app (ICT Tools)), about aesthetic language (Styles)	they were very worthwhile (Pos EE; valuable)	ya, you had to complete a load of tasks (Pos BE; active)	worthwhile and helpful (Pos ET; valuable)

*Coding Key (see section 5.4.2 for descriptions of each code)

Pos BE	Behavioural Engagement (Positive)
Pos EE	Emotional Engagement (Positive)
Styles	Styles of Language
Pos ET	Technology for English (Positive)
Learn	Learned
Valuable	Valuable
Lit Cont	Literary Content
Other Skills	Other English Skills
Active	Active/Interactive
Learn Process	Learning Process
Collaboration	Collaboration
Eng Sub	English Subject

Appendix I: Results of the Paired Samples *t*-test (Exploratory Case Study)

Pre- and post-intervention changes in Means by ETAS Subscale

	Pre-test Mean	Post-Test Mean	Change
Behavioural Engagement	3.84	3.97	+0.13
Technology Confidence	3.61	3.72	+0.11
English Confidence	3.37	3.51	+0.14
Emotional Engagement	3.67	3.86	+0.19
Attitude to learning English with Tech	3.39	3.66	+0.27

Results of the paired samples *t*-test



	Std. Deviation	t	df	P-value (sig)	Effect Size
Behavioural Engagement	.44	-3.471	124	0.001	0.31
Technology Confidence	.42	-2.952	124	0.004	0.26
English Confidence	.49	-3.166	124	0.002	0.31
Emotional Engagement	.58	-3.632	124	<0.001	0.29
Attitude to learning English with Tech	.68	-4.419	124	<0.001	0.40

Appendix J: Schools in the Explanatory Case Study

1. Assumption Secondary School, Kilnamanagh Road, Walkinstown, Dublin 12
2. Coláiste Bríde Presentation Secondary School, New Road, Clondalkin, Dublin 22
3. Drimnagh Castle Secondary School, Long Mile Road, Drimnagh, Walkinstown, Dublin 12
4. Mercy Secondary School, Thomas Davis St W, Inchicore, Dublin 8
5. Moyle Park College, Convent Rd, Clondalkin, Dublin 22
6. St. Mark's Community School, Fettercairn Rd, Fettercairn, Dublin 24

Appendix K: Learning Intervention Materials (Explanatory Case Study)

Appendix K.1: Sample Lesson Plan 1: Shakespearean Digital Narratives

“Meme-ing <i>Macbeth</i> ”		
Topic/Theme: <u>Shakespearean Digital Narratives</u>		
Class/Year Group: <u>Years 9-12 (Ages 14-18)</u>		
Subject(s): <u>English</u>		
Outline		
<p>What is the challenge your students will tackle?</p> <p>Summarise <i>Macbeth</i> 1.3 through images, voice, music, and text by selecting the 10-15 most important lines from this scene. Find images and sounds to accompany each line and combine them together into a digital narrative. They use the original lines (<i>not</i> paraphrase) and from these key lines, the plot’s clear.</p>	<p>Why is this meaningful to the students - what’s the hook?</p> <p>Learning Shakespeare and (new) literacies with useful and fun technologies and working together in teams to create projects helps make Shakespeare more exciting and relevant in their everyday lives. They are learning while having fun!</p>	<p>What “enduring understanding” will be developed by students?</p> <ul style="list-style-type: none"> •How the narrative and aesthetic ‘styles of language’ apply in the real world • The role of technology/new literacies in their English education • Learning Shakespeare can be fun and relevant
Learning Objectives		
<p>What curriculum content will be addressed?</p> <p>The narrative and aesthetic styles of language; a Shakespearean (or another author’s) play (this sample uses Act 1.3 of <i>Macbeth</i>); new literacies</p> <p>By the end of this activity, students <i>will be able to</i>:</p> <ul style="list-style-type: none"> • Comprehend, analyse and summarise a Shakespearean scene • Create and analyse multimedia texts • Identify and use narrative and aesthetic languages • Work collaboratively as a team 		<p>How are four key 21st Century Skills addressed?</p> <p><i>Creativity</i>: Students will find or create original images to pair with key lines</p> <p><i>Communication</i>: Students will present their projects and communicate to an audience through audio and image</p> <p><i>Collaboration</i>: Students work in teams to create the project.</p> <p><i>Critical Thinking</i>: Students critically analyse the play to select key lines and find suitable images/sounds to match</p>
Reflection		
<p>How will you know that they are learning?</p> <p>Regular meetings with teams/team leaders and observation of teamwork.</p> <p>Student reflections will indicate what they believed they’ve learned.</p> <p>Digital narratives can be assessed for demonstration of skills developed.</p>		<p>In what ways will students reflect on progress?</p> <p>Plenary session: individual contributions and team success in completing the project.</p> <p>Teams complete a written reflection about their learning and skill development.</p>

Meme-ing *Macbeth* Activity Plan

Possible Aspects	Description	Time
	Set-up: team formation & icebreakers (teacher’s choice)	10 min
	Warm-up • <i>Brainstorm:</i> Write down everything you associate with a witch. • <i>Warm-up activity:</i> Using select lines from <i>Macbeth</i> , find a picture, create a Meme, and post on Padlet	15 min
	Investigate: • All together: Review aesthetic/narrative language with presentation • In teams: Identify the aesthetic/narrative language in the summary excerpt of <i>Macbeth</i> 1.1-1.2 (see handout) • All together: review tips for reading Shakespeare; read first few lines of <i>Macbeth</i> 1.3 • In teams: read the rest of 1.3	45 min
	Planning: • Students verbally recap the scene for the facilitator before moving on • Students decide how to divide tasks	10 min
	Create: • Choose the key lines • Decide which images and audio to use • Storyboard/write scripts • Record and edit digital stories	50 min
	Present: Groups present their digital stories and answer questions such as: •What was your individual contribution? • What were your challenges and accomplishments •How well did you meet the goals of the task?	15 min
	Reflect: Teams complete a written reflection: •How well did you work together? • What did you learn through this activity? • Do you feel more confident with narrative and aesthetic language?	10 min

Appendix K.1: Sample Lesson Plan 1: Supplemental Materials (*Macbeth* 1.1-1.2 Summary)

The battle

It started with a battle.

My country is Scotland, and it was ruled by the old King Duncan. My master, Lord Macbeth, was one of Duncan's most loyal, brave and honest lords.

King Sweno of Norway sailed his long boats to Scotland, burnt villages and declared war on our King Duncan.

Some Scottish lords joined Sweno but loyal Macbeth led his army against the Norwegians.

I stood on a bleak, windswept hill, holding Macbeth's horse as he ran down the slope with his army. The roar of the soldiers as they swung their swords made me shiver. I looked away when Macbeth's men crashed against the Norwegians like a huge wave against a rocky shore. Metal rang on metal. Men bellowed and arrows buzzed in the air.



The fighting was fierce but finally a cry of victory cut through the air. The Norwegians ran away across the battlefield to the distant shore where their ships waited. Macbeth and his loyal friend Lord Banquo strode back up the hill. Cuts crisscrossed their arms and faces. Macbeth was suntanned, with dark hair. Banquo was fairer skinned but it was hard to tell through the blood and bruises that covered them.

Appendix K.2: Sample Lesson Plan 2: Information Literacy & Online Research

Investigating “The Curse” of *Macbeth*

Topic/Theme: Information Literacy & Online Research Skills

Class/Year Group: Years 9-12 (Ages 14-18)

Subject(s): English

Outline

<p>What is the challenge your students will tackle?</p> <p>Investigate the curse of <i>Macbeth</i>: Create a multimedia presentation, using the language of information, to explain the curse – incidents, origins, etc. They must evaluate and cite their sources and explain why their selected sources are the most trustworthy.</p>	<p>Why is this meaningful to the students - what’s the hook?</p> <p>In a world of “fake news” students are hooked by learning how to figure out who and what to trust online – and where pitfalls exists!</p>	<p>What “enduring understanding” will be developed by students?</p> <ul style="list-style-type: none"> •How to be critical consumers of information online • Why and how to assess the reliability of internet resources • The importance of citing the work and research of other scholars
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Learning Objectives

<p>What curriculum content will be addressed?</p> <ul style="list-style-type: none"> • Shakespeare biographical and Macbeth historical background; the 'curse' of Macbeth • Style of Language: information; new literacies <p>By the end of this activity, students <i>will be able to</i>:</p> <ul style="list-style-type: none"> • Conduct research online: locate, evaluate, select, and cite reliable resources • Manage, analyse, and synthesize multiple streams of information • Create and analyse multimedia texts • Identify and use language of information. 	<p>How are four key 21st Century Skills addressed?</p> <p><i>Creativity</i>: Students will create multimedia presentations to communicate their findings and ideas</p> <p><i>Communication</i>: Students will orally present their findings with the aid of audio-visual presentation software</p> <p><i>Collaboration</i>: Students work in teams to create the project.</p> <p><i>Critical Thinking</i>: Students critically analyse online resources to select appropriate, reliable sources to answer the questions</p>
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Reflection

<p>How will you know that they are learning?</p> <p>Regular meetings with teams/team leaders and observation of teamwork.</p> <p>Student reflections will indicate what they believed they’ve learned.</p> <p>Multimedia presentations can be assessed for demonstration of skills developed.</p>	<p>In what ways will students reflect on progress?</p> <p>Plenary session: individual contributions and team success in completing the project.</p> <p>Teams complete a written reflection about their learning and skill development.</p>
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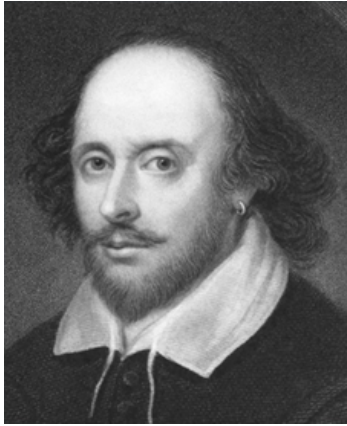
Curse of Macbeth (Info Literacy) Activity Plan

Possible Aspects	Description	Time
	Set-up: team formation/team-building activities (teacher's choice)	
	Warm-up <ul style="list-style-type: none"> • <i>Brainstorm:</i> Everything you can think of relating to Shakespeare • <i>Brainstorm:</i> Any resource you can use to find out more info about Shakespeare. 	5 min
	Investigate: <ul style="list-style-type: none"> • What is the language of information? • Analyse examples (Macbeth/Shakespeare Background) • What is information literacy? • Presentation & activities: How to find and cite reliable sources • Explain IL activity challenge 	60 min
	Planning: <ul style="list-style-type: none"> • Students begin researching and evaluating their sources (1 reliable source per team member) • Students use citation tools to track sources 	30 min
	Create: <ul style="list-style-type: none"> • Synthesise information from various sources, using organisers • Organise information into a multimedia presentation 	30 min
	Present: Groups share their presentations and answer questions such as: <ul style="list-style-type: none"> • What was your individual contribution? • What were your challenges and accomplishments? • How well did you find and select your sources? 	15 min
	Reflect: Teams complete a written reflection: <ul style="list-style-type: none"> • How well did you work together? • What did you learn through this activity? • Do you feel more confident conducting research? 	10 min

Appendix K.2: Sample Lesson Plan 2: Information Literacy, Supplemental Materials

Macbeth Background

"Macbeth: Background." *British Broadcasting Company (BBC)*. BBC, 2014. Web. 30 June 2016. <http://www.bbc.co.uk/bitesize/higher/english/macbeth/background/revision/1/>



Political: Shakespeare wrote *Macbeth* in 1606. It is important to understand the political context in which it was written, as that is the key to the main theme of the play, which is that excessive ambition will have terrible consequences. Shakespeare was writing for the theatre during the reigns of two monarchs, Queen Elizabeth I and King James I. The plays he wrote during the reign of Queen Elizabeth, such as *A Midsummer Night's Dream*, are often seen to embody the generally happy, confident and optimistic mood of the Elizabethans. However, those he wrote during James's reign, such as *Macbeth* and *Hamlet*, are darker and more cynical, reflecting the insecurities of the Jacobean period. *Macbeth* was written the year after the Gunpowder Plot of 1605.

When Queen Elizabeth died in 1603, she had no children, or even nephews or nieces. The throne was offered to James Stuart, James VI of Scotland, who then became James I of Britain. He was a distant cousin of Elizabeth, being descended from Margaret Tudor, the sister of Elizabeth's grandfather, Henry the Eighth. James was the son of the Catholic Mary Queen of Scots, who had been deposed and imprisoned when he was a baby, and later executed on Elizabeth's orders. Brought up by Protestant regents, James maintained a Protestant regime in Scotland when he came of age, and so was an acceptable choice for England which had become firmly Protestant under Elizabeth. However, his accession was by no means a popular choice with everyone. Since he was not a direct descendant of Elizabeth, there were other relatives who believed they also had a strong claim and James feared that discontented factions might gather around them. At first the Catholics had hoped James might support them, since his mother had been such a staunch Catholic, but when they realised this would not happen conspiracies developed, one of which was the Gunpowder Plot. Guy Fawkes and his men tried to blow up James and his parliament in 1605. The conspirators were betrayed, and horribly tortured on the rack until they confessed. They were then executed in the most brutal fashion as a warning to other would-be traitors. Shakespeare's play *Macbeth* is to some extent a cautionary tale, warning any other potential regicides (king-killers) of the awful fate that will inevitably overtake them.

Philosophical: Religious thinkers in the Middle Ages had upheld the idea of 'The Great Chain of Being'. This was the belief that God had designed an ordered system for both nature and humankind within which every creature and person had an allotted place. It was considered an offence against God for anyone to try to alter their station in life. After death, however, all would be raised in the kingdom of heaven, if they respected God's will. Since royal rank was bestowed by God, it was a sin to aspire to it. This doctrine – a convenient one for King James – was still widely held in Shakespeare's day.



Mary Queen of Scots

Although his mother, Mary Queen of Scots, was a beautiful and charming woman, James I was aware he was ugly and lacking in the charisma which inspired loyalty. But he was an intelligent and well-educated man, and

espoused various beliefs which he felt would keep his position secure. One of these was the so-called 'divine right of kings'. This was the belief that the power of monarchs was given directly by God, and thus monarchs were answerable only to God. Any opposition to the King was an attack on God himself, and therefore sacrilege, the most heinous of sins. The anointing ceremony at the coronation made the King virtually divine. All the Stuart kings strongly supported the belief in their 'divine right' to rule as it was an effective safeguard of their position. They even claimed Christ-like powers of healing. In Macbeth, Shakespeare alludes to King Edward of England successfully healing the sick: 'such sanctity hath heaven given his hand'. Queen Anne was the last British monarch who used 'the Queen's touch' in this way.

Historical

Shakespeare's plot is only partly based on fact. Macbeth was a real eleventh century Scottish king, but the historical Macbeth, who had a valid right to the throne, reigned capably in Scotland from 1040 till 1057. He succeeded Duncan, whom he had defeated in battle, but the real Duncan was a weak man, around Macbeth's own age, not the respected elderly figure we meet in the play. In reality, Macbeth was succeeded by his own stepson, not by Duncan's son, Malcolm, who came to the throne later. The Stuart kings claimed descent from Banquo, but Banquo is a mythical figure who never really existed. Shakespeare found his version of the story of Macbeth in the Chronicles of Holinshed, a historian of his own time. Holinshed does include a Banquo in his version, but he is also a traitor who assists Macbeth in the murder. As a tribute to the Stuarts, and James in particular, Shakespeare presents Banquo as a wise, noble and regal figure who arouses jealousy in Macbeth as much for his own good qualities as for the promise the witches make to him of founding a dynasty.

Shakespeare and the Court

During the reign of Queen Elizabeth, Shakespeare's acting company was called the 'Chamberlain's Men', and it is known that they performed for the court. After the accession of James they changed their name to the 'King's Men' as a tribute to him. The patronage of the King and court was obviously valuable to Shakespeare. In Macbeth, Shakespeare seeks to flatter and please the King in various ways. Macbeth, the character who usurps the place of a lawful King, is shown as losing everything as a result – he becomes hated and demonised by all his subjects, as does his wife, who supports him in his crime. Banquo, whom the Stuarts claimed as their ancestor, is presented in a completely positive light. When the witches show Macbeth the future, he sees a line of kings descended from Banquo that seems to 'stretch out to the crack of doom'. This flatters King James with the promise of a long-standing dynasty, although in fact James's father, Charles I, would be executed, and the Stuart line was to die out with Queen Anne in 1714.

Shakespeare also included other enthusiasms of the King in the play. James had written a book called *Basilikon Doron*, which looks at the theme of kingship. In the book, James identifies the ideal king as one who does his duty to God and to his country and who is also a man of spotless personal integrity. In the play, Shakespeare, too, explores this topic, with the character of Malcolm representing the template of the ideal king. In addition, the idealised portrait of Edward the Confessor, the 'holy king' who has the power literally to heal his people, would come across to a contemporary audience as an indirect tribute to James himself. James was also very interested in the supernatural, and had written a paper called *Daemonologie* on the subject. During his reign as King of Scotland, James is known to have been directly involved in some witch trials at North Berwick. Women were regularly burnt as witches, and Shakespeare presents his witches unequivocally as powerful and evil emissaries of the devil. In his day, the majority of the general public, too, believed in witches and the power of the supernatural, and the witch scenes would have been taken very seriously.

Appendix K.2: Sample Lesson Plan 2: Information Literacy, Supplemental Materials

12/11/2017

Evaluating an Internet Resource

Evaluating an Internet Resource

For each source you plan to use for your research, you must complete one of these forms. Teams should work together to evaluate sources, but ultimately each individual is responsible for 1 form (4 team members = 4 forms)

*Required

1. **Team Name ***

2. **Your Name ***

3. **Copy and Paste the webpage link: ***

4. **What is the URL domain of the resource? ***

Mark only one oval.

.edu

.gov

.org

.ie/.co.uk

.com

Other: _____

5. **What is the name of the organization that produces this online resource? ***

6. **What type of organization is it? ***

Authority, Currency, & Accuracy

Using the "About Page", [website.informer.com](http://www.website.informer.com), <http://www.ip-adress.com/whois/>, and www.archive.org will help you complete several of the following questions! You may also want to google search certain information - like the author!

7. **Who wrote the article/webpage? ***

8. **Can you contact this person/people? If so, what is the phone number/email? ***

9. Is the author qualified to write this page/site/resource? How do you know? *

10. When was the webpage/article published? *

11. When was the website created? *

12. When was the website last updated? *

Objectivity & Overall Assessment

13. Why was this written and for whom? *

14. What opinions (if any) are expressed by the author? *

15. Do you believe this is a valid resource to use for your project? Why? *

Appendix L: Results of the Wilcoxon Signed-Rank Test (Explanatory Case Study Data)

	Z-value*	P Value*	**Effect Size
Behavioural Engagement	4.309	<.001	.36 (small)
Technology Confidence	2.791	.005	.23 (small)
English Confidence	3.005	.003	.25 (small)
Emotional Engagement	2.913	.004	.24 (small)
Attitude to learning English with Tech	4.900	<.001	.41 (small-medium)

*The Wilcoxon signed-rank test demonstrated that there was a statistically significant change in all subscales of the ETAS. When interpreting the results from the Wilcoxon signed-rank test, the Z-value (which is a measure of standard deviation) and the P-value (the measure of significance) should be analysed in conjunction, as together they give us a fuller picture of the data (Pallant, 2007). A very large or very small Z-value (greater than +1.96 or less than -1.96 — the standard normal distribution) will correlate with a low P-value — less than .05, indicating that the change in the data was statistically significant and not likely due to random chance (Pallant, 2007, p. 224-225).

**Another important measure is the effect size of the change, which indicates the magnitude, or the strength of the correlation between the two variables (Pallant, 2007). When using a Wilcoxon signed-rank test, the effect size should be calculated dividing the Z-value by the square root of the number of observations over the two time points (Pallant, 2007). In this study, there were 73 cases, so there 146 observations. The effect sizes are also labelled small, medium, or large based on Cohen's (1988) criteria (Pallant, 2007).

Appendix M: Results of the Paired Samples *t*-test (Explanatory Case Study Data)

Pre- and post-intervention change in mean scores

	Pre-test Mean	Post-Test Mean	Change
Behavioural Engagement	3.96	4.21	+0.25
Technology Confidence	3.71	3.87	+0.16
English Confidence	3.90	4.08	+0.18
Emotional Engagement	3.94	4.16	+0.22
Learning English with tech	3.58	4.11	+0.53

Results of the paired samples *t*-test

	Std. Deviation	t	df	P-value (sig)	Effect Size
Behavioural Engagement	0.46	-4.69	72	<0.001	0.55 (medium)
Technology Confidence	0.56	-2.46	72	0.016	0.29 (small)
English Confidence	0.47	-3.13	72	0.003	0.38 (small)
Emotional Engagement	0.55	-3.32	72	0.001	0.40 (small)
Learning English with tech	0.80	-5.65	72	<0.001	0.66 (medium)

According to the paired samples *t*-test, there was an increase in means in every subscale, and all the increases were significant (at the <0.05 confidence interval). Another important measure is the effect size of the change, which indicates the “magnitude of the difference” (Sullivan and Feinn, 2012, p. 279).

Appendix N: Sample of Coded Data (Explanatory Case Study)*

Student Gender	How did you feel about the experience this week? Why?	What did you learn from the experience? (all coded for LEARN)	Was your participation this week any different than it normally is in English (in school)? How so?	Has your confidence in English changed in any way? If so, how?	Based on this week, how do you feel about using technology for English? Why?	Have your feelings about or confidence in studying Shakespeare changed in any way? How so?
Male	I enjoyed it because we were working in teams and doing interesting topics (Pos EE, Fun, Coll)	I learned how to identify different types of language and used debating skills (Styles, Pub Speak)	In school you can't really participate in English, you're just given work. I participated a lot more here. (pos BE)	Yeah I'm confident in going to 5th year English because the activities we done this week. (Pos Con)	I feel like it should be used more in schools because the internet has resources to help you understand complicated questions in English. (Pos ET)	I appreciate Shakespeare more than I did before this week and I'm ready to study him in 5th year English (pos EE)
Female	I really enjoyed it. It allowed me to learn about English in a way in which I am not used to. It was a good opportunity to learn new skills that will benefit me in English. (Pos EE, Learn, Eng Sub, Learn Mod, Val)	I learned about the use of apps & programs that will allow me to understand & learn English better (ET Pos; ICT Tools). I also I studied new techniques and Shakespeare plays, such as MacBeth (about Shakes)	It was different because I am usually an independent worker in English. However, this session allowed me to work with a group of people in order to progress with the English course, which I believe is very rewarding. (pos BE, coll, pos EE)	Not really because I never struggled with English. I still feel the same about it now, which is great. (Same Con)	It's an intriguing way to learn (pos ET). Although using technology for English might be confusing at first (neg ET), I'll need to get used to it -- I'm so used to just writing down notes my teacher provides. I'll definitely use technology in English more frequently now. (pos ET)	Yes because now I am somewhat able to translate the script (pos Con, Int Shakes). This was something that I could not do in Junior Cycle, so learning "Romeo and Juliet" proved to be quite a challenge for me.

Female	I enjoyed using technology to help me learn more (Pos EE, Learn, ET Pos)	I learnt more about Shakespeare (about Shakes) and using technology (ICT Tools) . I also learnt how to research properly and check if websites are reliable (On Res)	Yeah I feel I participated more this week then I do in school because I find English quite boring in school so I enjoyed this week (pos BE, Fun, pos EE)	I feel way more confident because using technology made it more interesting and it made me want to be more involved. (Pos Con, Pos ET, Pos BE)	I really liked using the technology it helped me learn more and it made it 10 times more interesting then it would be usually. (Pos ET, Fun)	Yeah I actually enjoy studying Shakespeare now I understand why we need to study it and I liked the different ways we learnt about Shakespeare (pos EE, learn model)
Male	it was a good week and i feel like it makes Shakespeare a lot easier (Pos EE, Learn, Shakes Int)	I learned how to work well as a group (Coll) , how to make and edit a movie (New Lit) , & how to breakdown Shakespeare and make it more understandable (Int Shakes)	yes, using technology for English makes you forget that you're really doing English and makes it way more enjoyable (pos BE, Pos ET, Fun, pos EE)	kind of, this is because the skills I learned this week (Pos Con, Learned)	I would love to do it more it makes English really fun (Pos ET, Fun)	no, I just don't like it (neg EE)
Male	I enjoyed it because I was learning about Shakespeare but it was still fun at the same time (Pos EE, Learn, about Shakes, Fun)	I learned how to translate Shakespeare (int Shakes) , work with others in a group (Coll) , and how to put together a video/ presentation. (new lit)	yes, I feel like I was involved a lot more in the things that I was learning and that I actual learned something. (pos BE, Learn)	yes I think it has, I now feel more confident when reading and translating Shakespeare. (Pos Con, Learned, Inter Shakes)	I liked using technology for English this week, it's a change from just using book etc. (Pos ET, Nov)	yes, I now think that I can read and translate Shakespeare. I feel more confident in doing so. (pos Con, Int Shakes, learn).

Female	I really enjoyed it compared to a normal English language, I hate English in school and find it boring even though I'm good at it, I hate constantly reading pieces and writing in my copy. I would love if every lesson in my school had the same environment as bridge 21, I wouldn't dread getting up in the morning to go to school. (Pos EE, Eng Sub, Learn Modl)	I learned a lot about Shakespeare (about Shakes) and English skills (Eng Sub) , I learned how to use Windows Movie maker and how to film and upload videos. (New Lit)	Yes, I'll admit that I'm not bothered what so ever with English anymore, I'll study for tests but I didn't bother doing homework last year, I didn't put much effort into class. I feel as if I put a lot of effort into my group tasks this week and I think it's because of the environment I was in and the use of technology. (pos BE, Pos ET, Fun, pos EE)	I feel more confident in English because I genuinely payed attention and put a lot of effort in, my English class in school is kind of a doss class and I learned more this week then I would in a few months in school. (Pos Con, Pos BE, Learned)	I think technology should be used in every lesson for every subject, it's the way of the world now so I don't see why it isn't being used in school as much as its being used in the real world. (Pos ET)	I feel more confident in learning Shakespeare and I feel I know a lot more about him and his works. (pos Con, Int Shakes, About Shakes, learn).
Female	I think it was really good and opened my mind up about how Shakespeare's works can be learned and enjoyed rather than just a teacher droning on without any interaction with the class. (Pos EE, Learn proc, Fun)	I learn about research and to make sure it is reliable by doing some quick checks. Also I learned to be more open about what I previously didn't like to learn and to learn it in a new way. (On res, Learn proc, self dis, learn model)	Yes I was much more enthusiastic and all the group work was a lot more enjoyable as you get to all share your ideas argue about them and then work together to make a project. (pos BE, coll, Fun, pos EE)	I don't think my confidence has changed as I was already fairly confident but I think my view of the subject has changed. (Same Con, Pos EE)	so much of English i.e newspapers, blogs, films are online now and use a wide range of technology so I think it is good to use it to learn English. Pos ET)	Yes as I feel he can be relatable to us if you actually compare our lives to his because before I thought he was just some old English man who didn't have anything to do with us. (pos EE, self dis)

*Coding Key (see section 6.4.2 for complete descriptions of each code)

	Code
Pos EE	Emotional engagement (Positive)
Neg EE	Emotional engagement (Negative)
Mix EE	Emotional engagement (Mix)
Pos BE	Behavioural engagement (Positive)
Neg BE	Behavioural engagement (Negative)
Mix BE	Behavioural engagement (Mix)
Pos Con	Confidence (positive)
Neg Con	Confidence (negative)
Same Con	Confidence (neutral)
Learned	Learned
Eng Sub	English subject
About Shakes	"About" Shakespeare
New Lit	New literacies
Styles	Styles of language
Inter Shakes	Interpreting Shakespeare
Pub Speak	Public Speaking
On Res	Online Research
Pos ET	Learning with technology (positive)
Neg ET	Learning with technology (negative)
Coll	Collaboration
Social	Social aspect
Learn Proc	Learning process
Self-dis	Self-discovery
Nov	Novelty
Val	Valuable
Not Val	Not valuable
Fun	Fun
Task	Task
Learn Mod	Learning Model

Appendix O: Schools Involved in the Supplemental Case Study

1. Balbriggan Community College, 82-84 Drogheda St, Tankardstown, Balbriggan, Co. Dublin
2. Coláiste Bríde Presentation Secondary School, New Road, Clondalkin, Dublin 26
3. Loreto College, 12 Crumlin Rd, Crumlin, Dublin 12
4. St. Joseph's Secondary School, Convent Ln, Rush, Co. Dublin
5. St. Mark's Community School, Fettercairn Rd, Fettercairn, Dublin 24
6. Tallaght Community School, Balrothery, Dublin 24, D24

Appendix P: Coding Sample – Part 1 (Supplemental Teacher Study)

Teacher	How have you incorporated the ideas and/or activities that were presented into your teaching practice? Please explain.	How many lessons and/or activities did you complete that utilised the ideas and/or content from the workshop? How long was each?	Did you utilise elements of the Bridge21 approach or activity model? If yes, how so? If not, why not?	How successful do you believe the implementation of this activity was with your students? Please explain.
1	At senior level the timed brainstorm group activity is something I use regularly as I find it very productive and time effective (ACT; BEL-P)	I used two activities. The brainstorm activity has been used regularly for 5 mins or so then the picture storyboard was something incorporated over a few classes with a lot of time dedicated it (FREQ)	Yes some elements of my class focussed on teamwork among students. The same groupwork tasks also used a lot of ICT. (CL; ICT USE)	I felt it was very good, students pooling their knowledge together made for increased quality and improved timing in regard to completing tasks. (Time-P; LEARN; CL; BEL-P;
2	I used the lesson on the art gallery. We created memes and the class had to create a digital narrative based on the picture they had chosen as a group. As individuals they then chose another picture from the art gallery and used it as inspiration for their own writing. In this way the concluding element of the lesson was linked to the L.C exam which has to be a consideration with a H.L L.C class (unfortunately!). (ACT)	I spent a week on the lesson which amounts to 3 hours (3x1hr class). We didn't have time to complete the radio ad but we did the rest of the lesson. (FREQ)	Yes, the only element that we did not complete on paper was a reflection on the successes and challenges of the lesson, although I asked students to share their opinions on the lesson orally with the class.	I know that they really enjoyed it (ENJ) and they particularly enjoyed using technology in the classroom (ICT-USE; ENJ) as I had not done any other lessons in the year that used technology in a creative way (NOV) .
3	I often use this approach to get students engaged and motivated to self-direct. I did a meme-based lesson to help with an English "comparative" film studies class shortly after the workshop. However, I don't think it works for all material I cover, so I	Countless! (FREQ)	Yes, as explained above.	They enjoyed it immensely (ENJ) . If the exam involved memes, they'd ace it. However, this particular lesson won't always work for depth of knowledge. (BEL-N)

	don't use it all the time. (ACT; BEL-N; ENG; SLL)			
4	My TY students recreated scenes from Macbeth and King Lear as an assignment, which was an idea explored at the workshop. (ACT) Unfortunately, the technology in my classroom is damaged (TECH ISS) , so the ideas and activities from the workshop weren't used to the extent I would have liked. However, the students did create things such as whatsapp threads in the form of a word document by inserting images and speech bubbles, (ACT) . They also changed the setting and character names and introduced slang into Macbeth to make it more teenager friendly and to engage with the language in a more creative fashion (ACT; ENG) . The students also got great class discussions from the articles debating whether or not Shakespeare should be taught in school. (ACT)	5 lessons: 40 minutes each. (FREQ)	I feel like I did in terms of being a facilitator and letting the students discover and create for themselves (SLL) . For example, the students worked in small groups in the computer room to complete the 'recreating Shakespeare' assignment mentioned above. (CL; ICT use)	Successful in the sense that the students really enjoyed this approach to Shakespeare (ENJ) . Unsuccessful in the sense that technological aid wasn't always available for those lessons (projector not working, computer room being used by another class, etc.) (TECH ISS; TECH ACC; BAR) Although someone from the workshop very kindly offered to come back to school with ipads, realistically, my class group was too large for group work with 4 i pads to run smoothly.
5	Better use of combining IT and Collaborative Learning (ICT use; CL)	Staggered over the year (FREQ)	Yes to combine IT and Collaborative Learning (ICT use; CL) ...using Class Notebook...IT being slow impaired results (TECH ISS; BAR) ...collaborative side was great (CL)	IT is an issue. Our students do not have their own devices and the computer did not work quickly enough to collate work (TECH ACC; TECH ISS; BAR)The students saw the real benefit of the Bridge 21 approach though (LEARN; BEL-P)

Coding Key (see section 7.4.2 for details of the code descriptions)

ACT	Activity
BEL-P	Belief – Positive
BEL-N	Belief – Negative
FREQ	Frequency
CL	Collaborative Learning
ICT use	Technology use
LEARN	Learning

ENG	Engagement in learning
SLL	Student-led Learning
TECH ISS	Technical Issues
TECH ACC	Access to ICT
ENJ	Student enjoyment
NOV	Novelty
BAR	Barrier

Coding Sample – Part 2 (Supplemental Teacher Study)

Teacher	Please describe any barriers you have faced to implementing the workshop content in your teaching practice.	Would you do the activity again, or a different one, in the future? Please explain.	Did you find the workshop useful/helpful? Why or why not?	How effective is the Bridge 21 model of teaching and learning in English?	Please give reasons for your answer
1	Some ICT facilities in the school were not good enough for the students to use and it was quite difficult when the computer room was not available (BAR; TECH ACC; TEC ISS)	No I have used the same activity again and will definitely do so in the future. (BEL-P)	I found the alternative methods used in the lessons very interesting and gave me good ideas for adapting them to my own lessons. (IDEA; METH)	Very Effective (BEL-P)	Opens up different options for students to explore a topic and it feels very much like how other subjects go about completing a task (BEL-P)
2	The access to technology – we couldn't use the computer rooms as they were block booked for the times I had English so we booked the tablets (we have a new trolley of tablets). Unfortunately, there is no wifi in my room but we managed by	Yes I would absolutely complete this lesson again. (BEL-P)	I found the workshop very useful because I hadn't used memes before and I could see the potential to use them in the classroom (RES; IDEA). I also really enjoyed being given the opportunity to	Effective (BEL-P)	It engages students and creates a positive atmosphere in the class and a buzz about learning. (BEL-P; ENG; LEARN)

	going outside in the area outside the classroom – I think this actually added to the novelty (NOV) of the class and was only sorry that I didn't have a few cushions or a bean bags. (BAR; TECH ACC; TEC ISS)		collaborate and learn with the English Department as due to the industrial action this year we have not had any planning time together.		
3	Time-consuming for planning; we have so many classes/subjects that it's not feasible to use this method all the time, as it is one requiring planning to get used to (BAR; TIME-CH). Also, I find it works for some topics, but it doesn't necessarily work for all; I still believe in delivering quality teacher-led content too. Moderation works for me. (BAR; BEL-N)	Yes, as they're enjoyable. (BEL-P; ENJ)	Yes, for discovering new apps (RES), but as I've been to so many of these workshops, I feel I'm being told again and again what I already know.	Effective (BEL-P)	Explained above. (ENG; ENJ)
4	Technology was not readily available for every class. This resulted in being able to incorporate digital learning into two classes per week. (BAR; TECH ACC)	Yes. I would certainly do the activity again (both the 'meme' one and the articles from teachers as a comprehension and discussion builder) In future, I would like to try the activity in which the students make a video rather than the usual 'paper' assignment. (BEL-P)	I found the workshop very helpful in terms of resources (there were some apps and websites I hadn't heard of). (RES)	Effective (BEL-P)	Student friendly, original, lets learners take greater responsibility for their own learning (SLL; ENJ)

5	IT as mentioned above (TECH ACC; TECH ISS; BAR)	Yes...hopefully It will evolve to make it easier (BEL-P)	Yes, good ideas given (IDEA)	Effective (BEL-P)	Great in theory (BEL-P), it is just equipment that let us down a little (BAR; TECH ISS)
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Coding Key (see section 7.4.2 for details of the code descriptions)

ACT	Activity
BEL-P	Belief – Positive
BEL-N	Belief – Negative
FREQ	Frequency
CL	Collaborative Learning
ICT use	Technology use
LEARN	Learning
IDEA	Idea

ENG	Engagement in learning
SLL	Student-led Learning
TECH ISS	Technical Issues
TECH ACC	Access to ICT
ENJ	Student enjoyment
NOV	Novelty
BAR	Barrier
METH	Methods

Appendix Q: Gender and New Literacies – Future Research

Within the field of new literacies studies, gender is also of particular concern. According to research in this area, girls lag behind boys in developing new literacies (Alvermann, 2008; Chandler-Olcott & Mahar, 2003; Moeller, 2011; Sanford, 2005). Adolescent males more commonly partake in new literacy practices such as blogging, programming IT, gaming, and reading graphic novels, while adolescent females partake in more conventional literacy practices, such as reading novels and analysing character development. It was beyond the scope of this Ph.D. research to explore in the literature and the data collection and analysis the impact of the learning interventions on students, but using the quantitative ETAS, the researcher was able to provide a snapshot of the impact on the female students, as compared to the male students, and she suggests further research analysing how pedagogies for teaching new literacies and/or the Bridge21 impacts students, based on gender. The results are provided below.

Impact of the Learning Intervention (Explanatory Case Study), Based on Gender
(Females: N=42; Males: N=31)

		Pre-Test Mean	Post-Test Mean	P-Value (Significance)	Effect Size*
Behavioural Engagement (BE)	Female	3.97	4.25	0.002	0.52 (medium)
	Male	3.95	4.16	0.001	0.63 (medium)
Emotional Engagement (EE)	Female	4.01	4.26	0.007	0.44 (medium)
	Male	3.85	4.02	0.096	--
English Confidence (EC)	Female	3.86	4.07	0.006	0.44 (medium)
	Male	3.96	4.09	0.150	--
Learning English with tech (ET)	Female	3.45	4.08		
	Male	3.77	4.15	0.004	0.56 (medium)
Technology Confidence (TC)	Female	3.63	3.86	0.002	0.37 (medium)
	Male	3.81	3.88	0.413	--

*No effect size is reported for changes that were not statistically significant; instead the symbol (--) is used.